Spasticity in children and young people with non-progressive brain disorders: management of spasticity, co-existing motor disorders and their early musculoskeletal complications

Appendices

National Collaborating Centre for Women's and Children's Health

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This guideline has been fully funded by NICE. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient.

Implementation of this guidance is the responsibility of local commissioners and/or providers

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Appendix A Scope

NATIONAL INSTITUTE FOR HEALTH AND CLINICAL EXCELLENCE

SCOPE

1 Guideline title

Spasticity in children and young people with non-progressive brain disorders: management of spasticity and co-existing motor disorders and their early musculoskeletal complications

1.1 Short title

Spasticity in children and young people with non-progressive brain disorders

2 The remit

The Department of Health has asked NICE: 'To prepare a clinical guideline on the management of spasticity in children with a non-progressive brain injury'.

3 Clinical need for the guideline

3.1 Epidemiology

a) Spasticity is a sign found in some motor disorders which is characterised by hyperexcitability of the stretch reflex, resulting in a velocity-dependent increase in tonic stretch reflexes (muscle tone) with exaggerated tendon jerk. It is one components of the upper motor neuron syndrome.

b) Spasticity is a common and often serious abnormality affecting motor function. Spasticity results in an increased resistance to passive movement of a muscle through hyperactive stretch reflexes causing rapid

and strong contraction of the muscle. This dysregulation of tone with movement can result in a wide range of clinical manifestations and functional impairments.

c) Spasticity in children and young people is most often seen in cerebral palsy, although it can also occur with other forms of non-progressive and progressive brain disorders, the latter is outside the remit of this guideline.

d) In children and young people with cerebral palsy, the motor disorder can be characterised using the following approaches:

- Anatomic distribution of motor disorder
  Unilateral involvement or bilateral involvement
  Description of involvement of each limb, trunk and oropharynx
- Nature of motor disorder
  Spastic, dyskinetic or ataxic as predominat abnormality
  Dyskinetic further divided into dystonic or choreathetosis
  Additional tone or movement problems listed as secondary types
- Functional motor ability
  Gross Motor Function Classification System (GMFCS) used to assess ambulation
  Manual Ability Classification System (MACS) used to assess hand and arm function
- Accompanying Impairments

This system of classification was developed by the Surveillance of Cerebral Palsy in Europe (SCPE) project and replaces the previous classification where the following terms were used to describe anatomic distribution:

- Hemiplegia – one side of body affected, arm usually more severely than leg
- Diplegia – legs predominantly affected, mild to moderate upper limb impairment
- Quadriplegia – sever impairment of arms and legs, often with trunk

weakness and oropharyngeal involvement

As the guideline will be referring to literature over the last few decades, these terms will still be used in the assessment of the evidence for management of spasticity.

e) Cerebral palsy describes a group of permanent disorders of the development of movement and posture, causing activity limitation that are attributed to non-progressive disturbances that occurred in the developing foetal or infant brain. The motor disorders of cerebral palsy are often accompanied by disturbances of sensation, perception, cognition, communication, and behaviour, by epilepsy, and by secondary musculoskeletal problems.

f) The prevalence of cerebral palsy in the UK is about 2 per 1000 live births. This figure has not changed significantly in the past 40 years. Around 40% of children with cerebral palsy were born prematurely. In many of these children the precise cause of cerebral palsy is not apparent, but various risk factors can be identified, including maternal illness and postnatal events.

g) Although in cerebral palsy the causative brain damage is static, the motor manifestations change over time. Typically, abnormalities of movement and posture are first recognised during infancy or early childhood and progressive disability can occur.

h) Up to 80% of children with cerebral palsy have a spastic motor impairment. Other types of motor impairment in cerebral palsy include dyskinetic (with athetosis, dystonia and chorea) and ataxic (with abnormalities of coordination and balance). It is quite common for children with spastic cerebral palsy to also have other motor disorders such as dystonia or ataxia.

i) Examples of non-progressive disorders that may affect the brain of a fetus or infant include brain malformations, prenatal vascular events (stroke) and infections (such as cytomegalovirus), perinatal hypoxic or ischaemic

encephalopathy, and postnatal head injury or meningitis. When this damage occurs in the developing brains of children under three years of age, it is referred to in this guideline as cerebral palsy.

j) Non-progressive disturbances may also occur in older children and young people, for example, from head trauma, encephalitis or meningitis. Non-progressive disturbances affecting movement and posture occurring after this age are defined in this guideline as being “acquired”.

k) Depending on which parts of the motor cortex are damaged, the imbalance between flexor and extensor muscles may lead to abnormal posture of the joints. It is important to distinguish dynamic postural abnormalities (due to muscle spasticity) from fixed contractures (muscles that have become permanently shortened after long-term spasticity).

l) The functional abilities of children with spasticity often deteriorate over time. The cause of the progression is not often identified. It may include weakness, posturing, contracture, dystonia, ataxia or other motor disorders. Incorrect diagnosis and high expectations can all lead to functional deterioration. Effective management of spasticity and other motor problems could be important in preventing functional decline.

m) The muscular imbalances associated with spasticity often result in abnormal posture, which is initially 'dynamic' with the potential to improve with effective treatment of spasticity. In time the abnormal posturing can become permanent because of contractures, which in turn, may cause fixed joint deformities. Uncorrected deformities in spastic cerebral palsy can cause pain, impair function, reduce mobility and cause difficulties in caring for the child.

n) Subluxation or full dislocation of joints arise most commonly in the hips, but shoulder, elbow and ankle dislocations also occur though infrequently. Significant bony deformities can form such as kyphosis and scoliosis of the spine.

o) These changes may substantially worsen the child's functional disability

and impair the ability to walk or sit. Postural management or other specialist equipment may be necessary. Children and young people may avoid walking if it becomes unsafe or uncomfortable or if it requires a large effort. Abnormal posturing of the shoulder, elbow, or hand may greatly impair the function of the upper limb. These functional deteriorations can cause a consequent reduction in the individual's independence, for example in dressing or toileting or in access to education or play. A lack of independence leads to an increased need for support by paid carers or family members. It may also reduce employment opportunities.

p) Progressive disability requires acknowledgment, surveillance, prevention and management, especially during the transition to young adulthood when the demands of normal teenage life become more dominant in determining the health of the individual.

q) Successful treatment of spasticity might lead to better motor function, reduction or prevention of contractures and other fixed musculoskeletal deformities, enhanced functional abilities and independence, and ultimately an improvement in the person's quality of life.

3.2 Current practice

a) The aims of managing spasticity are to minimise the effect that it has on the child – to treat pain, improve motor function, improve ease of care, and prevent the consequences of spasticity. In combination with other interventions dealing with the child’s associated motor disorders and co-morbidities, the aim is to promote independence and to achieve as complete an integration into society as possible for the affected child or young person.

b) Many treatments are used in the management of spasticity, with considerable variation in practice.

c) Many physiotherapy regimens are commonly used in children and young people with spasticity. These include passive stretching, muscle

strengthening therapeutic exercises, serial casting, using splints and discouraging and preventing postures and movement that lead to disability and deformity, and encouraging postures and movement that improve function.

d) Orthoses, aids and appliances are used to manage seating and posture or– for example – to hold limbs in an advantageous position to improve functionality and to prevent or treat deformity. Ankle–foot orthoses of various sorts are frequently used. Similar devices are also used to immobilise the knee or to encourage hip abduction. Upper limb orthoses may be employed.

e) Spasticity may be alleviated by a wide range of interventions aimed at modulating the abnormal stretch reflex:

- Oral anti-spastic medications such as baclofen may be used in those with extensive spasticity.
- Intrathecal baclofen is administered into the cerebrospinal fluid using an implanted pump. It is used for severe spasticity.
- Local injection with botulinum toxin A may be effective. This works by temporarily blocking the release of the neuromuscular transmitter acetylcholine.
- Selective dorsal rhizotomy is used to reduce spasticity in the legs by interruption of the spinal reflex, and is covered by 'Selective dorsal rhizotomy for spasticity in cerebral palsy', NICE interventional procedure guidance 373 (2010). This procedure has potential adverse effects such as hip instability and spinal deformity.

f) Orthopaedic surgery has a major role in the management of early and late consequences of spasticity. Muscle–tendon lengthening procedures can both release shortened muscles and weaken spastic muscle, thereby improving the balance of forces influencing joint position. Osteotomy procedures can correct deformities and stabilise hip dislocation. Rotational osteotomy can correct torsional deformities and relieve malaligned muscular forces. Spinal deformities can be treated with fusion

and instrumentation techniques. Disorders such as pes equinus and pes varus, scissoring and hip instability can be managed using such techniques. Hip subluxation or dislocation occurs in up to 25% of children with cerebral palsy and surgery can be helpful to stabilise joints. Surgical procedures can alleviate many of the consequences of spasticity, resulting in significant functional improvement.

g) Expertise in and access to various types of treatment varies. Bracing techniques may be employed inappropriately or without evidence of benefit. Conversely, in some areas orthoses are not funded. Placement of intrathecal baclofen pumps is available in certain regional centres only.

4 The guideline

The guideline development process is described in detail on the NICE website (see section 6, 'Further information').

This scope defines what the guideline will (and will not) examine, and what the guideline developers will consider. The scope is based on the referral from the Department of Health.

The areas that will be addressed by the guideline are described in the following sections.

4.1 Population

4.1.1 Groups that will be covered

a) Children and young people from birth up to their 19th birthday who have spasticity as a result of a non-progressive brain disorder. It will include those with spasticity resulting from cerebral palsy and those with spasticity resulting from a non-progressive brain injury acquired later in childhood or adolescence.

b) Subgroups of this population will be considered in relation to the anatomic distribution of the motor disorder and the nature of the motor disorder.

4.1.2 Groups that will not be covered

a) Adults 19 years and older.

b) Children and young people with spasticity resulting from a progressive brain disorder. However, many of the recommendations on the management of spasticity might also apply to these children and young people.

c) Children with a pure dystonia or other motor disorders which do not co-exist with spasticity.

4.2 Healthcare setting

a) All settings in which NHS care is provided.

4.3 Clinical management

4.3.1 Key clinical issues that will be covered

Unless otherwise stated, each issue will be considered in relation to the subgroups of people with unilateral spasticity and bilateral spasticity. If clinically appropriate, each issue will also be considered in relation to the severity of the functional impairment using GMFCS and MACS. However, as this classification system has only recently come into general use, we will also use the older classification system (of spastic monoplegia, diplegia , hemiplegia and quadriplegia with severity graded as mild, moderate, or severe) as necessary to describe the reported evidence.

a) Physiotherapy and occupational therapy interventions that have a direct effect to reduce spasticity, its musculoskeletal consequences, or accompanying motor disorders for example, muscle shortening.

b) Orthoses (for example, ankle-foot orthoses, knee splints, serial casting and upper limb orthoses) for preventing and treating contractures and improving function (such as mobility).

c) Oral medications specifically baclofen, benzodiazepines (diazepam,

nitrazepam, clonazepam), levodopa, tizanidine and dantrolene

d) Long-term use of intramuscular botulinum toxin A and B to reduce spasticity, maintain motor function and prevent secondary complications.

e) Whether an effective response to a bolus dose of intrathecal baclofen predicts an effective long-term response in children and young people with moderate to severe spasticity.

f) The intrathecal baclofen pump to reduce spasticity, maintain motor function, to improve posture and improve health related quality of life in children and young people with moderate to severe spasticity.

g) Orthopaedic surgery specifically (tendon lengthening and transfer procedures, and osteotomy) to prevent and correct deformities and prevent joint dislocations.

h) Multilevel surgery (multiple surgical procedures done at the same time) compared with interval surgery (consecutive operations) to improve health related quality of life in children and young people.

i) Selective dorsal rhizotomy.

4.3.2 Clinical issues that will not be covered

a) Diagnosis and assessment of spasticity and co-existing motor disorders.

b) Management of spasticity and co-existing motor disorders caused by a progressive brain disorder or a spinal cord injury.

c) Management of motor disorders which do not co-exist with spasticity.

d) Holistic management of cerebral palsy or other non-progressive brain disorders.

e) Play therapy.

f) Complementary and alternative therapies.

g) Management of the following complications:

- kyphosis
- scoliosis.

h) Management of comorbidities, including:

- cognitive and learning disabilities
- visual, hearing and speech impairments
- epilepsy
- feeding difficulties (including enteral tube feeding)
- disorders of nutrition and growth
- impaired bone mineralisation (osteoporosis)
- pressure sores
- urological disorders (voiding difficulties or incontinence)
- gastrointestinal disorders (including gastro-oesophageal reflux and constipation)
- respiratory disorders (including apnoea, airway obstruction and chronic aspiration).

4.4 Main outcomes

a) Reduction of spasticity.

b) Optimisation of movement and function.

c) Reduction of pain.

d) Adverse effects of interventions.

e) Acceptability and tolerability in children and young people.

f) Health related quality of life.

4.5 Economic aspects

Developers will take into account both clinical and cost effectiveness when making recommendations involving a choice between alternative interventions. A review of

the economic evidence will be conducted and analyses will be carried out as appropriate. The preferred unit of effectiveness is the quality-adjusted life year (QALY), and the costs considered will usually only be from an NHS and personal social services (PSS) perspective. Further detail on the methods can be found in 'The guidelines manual' (see 'Further information').

4.6 Status

4.6.1 Scope

This is the final scope.

4.6.2 Timing

The development of the guideline recommendations will begin in July 2010.

5 Related NICE guidance

5.1 Published guidance

Selective dorsal rhizotomy for spasticity in cerebral palsy. NICE interventional procedure guidance 373 (2010). Available from www.nice.org.uk/guidance/IPG373.

6 Further information

Information on the guideline development process is provided in:

- 'How NICE clinical guidelines are developed: an overview for stakeholders' the public and the NHS'
- 'The guidelines manual'.

These are available from the NICE website (www.nice.org.uk/guidelinesmanual). Information on the progress of the guideline will also be available from the NICE website (www.nice.org.uk).

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Appendix B Declarations of interest

All GDG members' interests were recorded on declaration forms provided by NICE. The forms covered consultancies, fee-paid work, shareholdings, fellowships and support from the healthcare industry. GDG members' interests are listed in this section. This appendix includes all interests declared on or before 10 October 2011. No material conflicts of interest were identified during development of the guideline.

Table C.1 GDG members' declarations of interest

GDG member	Interest
Paul Eunson (Chair)	Non-personal pecuniary: Lothian Health Board received funding (to be used for books, meetings and study leave for departmental staff) in relation to membership of a European working group on intrathecal baclofen, and in relation to a physicians advisory panel for Medtronic (resigned from the advisory panel when offered position of GDG chair) Personal non-pecuniary: Member of British and European working parties developing consensus documents for use of intrathecal baclofen in management of spasticity in children and adults; co-author of article published in the European Journal of Paediatric Neurology (Bernard Dan, Francesco Motta, Johann SH Vles, Michael Vloeberghs, Jules G Becher, Paul Eunson, Vincent Gautheron, Sonnhild Lutjen, Volker Mall, Samuel Ignacio Pascual-Pascual, Petra Pauwels, Geir Ketil Røste, Consensus on use of intrathecal baclofen (ITB) therapy in paediatric spasticity, European Journal of Paediatric Neurology, 19 June 2009, e-pub ahead of press); wrote two chapters for a textbook (aimed at healthcare professionals) on use of intrathecal baclofen; gave a lecture at the Royal College of Paediatrics and Child Health (RCPCH) in relation to management of motor disorders in children with cerebral palsy; presented a paper relating to spasticity at the Society of British Neurosurgeons
Gordon Allan	No interests declared
Liz Barnes	Non-personal pecuniary: HemiHelp received funding from Ipsen for editorial input to a botox information sheet Personal non-pecuniary: trustee of HemiHelp with responsibility for information services; involved in producing information sheets relating to treatments covered by the guideline (including botulinum toxin, orthopaedic surgery, and orthoses); HemiHelp has not recommended or endorsed any particular drug or orthosis; contributed to chapters about social care, family life, education, etc as joint author of 'The Hemiplegia Handbook' (to be published by Mac Keith Press)
Lucinda Carr	Personal pecuniary: received books from Mac Keith Press in lieu of payment as co-author on two chapters of a book (Stroke and cerebrovascular disease, international review of child neurology, Mac Keith Press 2009) relating to outcome and rehabilitation after stroke in children; received travel and subsistence expenses in relation to two European consensus group meetings sponsored by Allergan on the use of botulinum toxin in children with cerebral palsy, and received an honorarium in relation to one of the meetings; both meetings resulted in publication of articles in the European Journal of Paediatric

	Neurology (neither publication recommended a specific botulinum toxin product) Personal non-pecuniary: contributed to guidelines on use of botulinum toxin in children with cerebral palsy; made presentations to the Dystonia Society, made a cerebral palsy information video for NHS Choices, and spoke about cerebral palsy on BBC Casenotes; wrote a chapter (an overview of cerebral palsy) of a book (Oxford textbook of orthopaedics and trauma, Oxford University Press, in press)
Stephanie Cawker	Personal pecuniary: Received an educational grant from Ipsen towards fees, travel and accommodation to attend an international hip management course in Liverpool Personal non-pecuniary: member of the national committee of the Association of Paediatric Physiotherapists; clinical interest liaison officer at the Chartered Society of Physiotherapy
Elspeth Dixon	Personal pecuniary: tutor for an Open College Network validated postural care course, and using it in current NHS job Personal non-pecuniary: member of an informal focus group on postural care that includes healthcare professionals and families from around the country; the group has not made any public statements on spasticity
Christina Gericke	Personal non-pecuniary: European delegate and council member of the British Association of Occupational Therapists
Alec Musson	Personal pecuniary: atended a national study day for botulinum toxin physiotherapist injectors that was sponsored by Allergen, Ipsen, Medtronic and Caiyside Imaging Ltd; funded by Leeds Teaching Hospitals NHS Trust to visit a team in the USA that performs selective dorsal rhizotomy (SDR); gave a lecture at a neurology network meeting that was sponsored by Medtronic
James Robb	Personal pecuniary: received royalties from sale of a book (Editors Luqmani R, Robb JE, Porter DE, Keating JF, Textbook of orthopaedics, trauma and rheumatology, Mosbey Elsevier, 2008) and received a copy of the book; will receive an honorarium as co-author of chapters (on orthopaedic management of cerebral palsy, and hereditary and developmental neuromuscular disorders, respectively) in another book (Editors Benson, Fixsen, Macnicol and Parsch, Children's orthopaedics and fractures, third edition, Springer, 2010); received travel and accommodation expenses for an international meeting on hip management in cerebral palsy held in Liverpool (personal remit was to consider salvage surgery for the dislocated hip; a position statement is expected to be published) Personal non-pecuniary: member of a working party aiming to establish a Scottish screening programme for hip surveillance in children and young people with cerebral palsy
Trudy Ward	Personal pecuniary: receives health expert witness fees for work undertaken as instructions to the courts through Triangle (www.triangle.org.uk); court instruction work relates to children with complex health needs and disability; receives funding through Triangle (mainly from local authorities) for training related to disabled children; received the Action for Sick Children Norah Rees Award comprising a one-off payment, a crystal award, free attendance at the conference, and payment of travel expenses; receives travel expenses relating to position as representative of the Royal College of Nursing (RCN) on the Care Quality Commission review of support for families with disabled children; receives travel expenses from the RCN as representative on the Council for Disabled Children Personal non-pecuniary: Chair of the RCN and Young People's Continuing and Community Care Forum, which supports RCN members working with children

	and young people with acute, long-term and palliative care needs within community settings; represents the RCN on the Council for Disabled Children
Jane Williams	Personal pecuniary: receives travel expenses for attending meetings of the British Academy of Childhood Disability (BACD), the British Association of Community Child Health (BACCH) and meetings of the RCPCH; received fees from BACD as a guest lecturer on a non-related topic Personal non-pecuniary: chair of BACD; member of BACCH, British Paediatric Neurology Association (BPNA), European Academy of Childhood Disability (EACD), and editorial board of Developmental Medicine and Child Neurology (Mac Keith Press); referred patients to a team involved in intrathecal baclofen research; refers patients for assessment for botulinum neurotoxin treatment

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2 **Table C.2** NCC staff members' declarations of interest

NCC-WCH staff	Interest
Lauren Bardisa-Ezcurra	No interests declared
Zosia Beckles	No interests declared
Shona Burman-Roy	No interests declared
Katherine Cullen	No interests declared
Juliet Kenny	No interests declared
Moira Mugglestone	No interests declared
Stephen Murphy	No interests declared
Wendy Riches	No interests declared

3 **Table C.3** External advisors' declarations of interest

External advisor	Interest
Christopher Morris	Personal pecuniary: receives a royalty for editing a book (Paediatric orthoses) Non-personal pecuniary: runs a childhood disability research unit funded by Cerebra, which conducts research including evaluation of orthoses Personal non-pecuniary: published papers and gave presentations expressing opinions about orthotic management
Andrew Roberts	No interests declared

Appendix C Stakeholders

The final published guideline will include a list of registered stakeholder organisations. The current list of stakeholder organisations is available on the NICE website (see http://guidance.nice.org.uk/CG/Wave22/5/SHRegistration/SHList/pdf/English)

Appendix D Review protocols

Question 1 What is the effectiveness of physical therapy (physiotherapy and occupational therapy) interventions in children with spasticity with or without other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non progressive brain disorder?

	Details	Additional comments
Review question	What is the effectiveness of physical therapy (physiotherapy and occupational therapy) interventions in children with spasticity with or without other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non progressive brain disorder?	
Objectives	To establish the clinical effectiveness of Physiotherapy and Occupational Therapy interventions in managing spasticity and the negative consequences of spasticity caused by a non-progressive brain disorder in children and young people . Specifically to reduce pain, to reduce its musculoskeletal consequences eg muscle shortening or fixed contractures, to optimize movement and functional ability and to improve HRQoL and participation	
Language	English	
Study design	Randomised controlled trials and systematic reviews of RCTs will be included. Studies that compare results across treatment groups will be included if there are no RCTs available. Sample size Studies n> 30 will be included. Studies with n=10 – 30 will be discussed with the topic group before inclusion. Studies n<10 will be excluded. Case series are excluded	
Status	Published papers	
Population	Children with spasticity and with or without other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder	

Interventions	1. Strengthening interventions • Progressive Resistive exercise • Rebound therapy • Treadmill training 2. Stretching • Casting/serial casting • Passive stretching 3. Postural Management • 24 hour postural management • Functional Sitting Position (FSP) • Seating solutions/moulded seats • Knee blocks • Sleep systems • Standing frames 4. Task focused active use therapy (which including Constraint Induced Movement Therapy)	
Comparison	1. Active use functional programme vs. no active use functional programme 2. Strengthening vs. usual care (if not including strengthening) 3. Serial casting vs. usual care (if not including serial casting) 4. Early casting after BoNT vs. delayed casting after BoNT • Early casting: at time of injection • Delayed: from 1 week 5. Casting + BoNT vs. BoNT only 6. Postural management vs. usual care (if not including postural management) 7. Passive stretching vs. usual care (if not including passive stretching)	
Outcomes	(To be categorised as short term (up to 3 months using shortest in study) or medium term (3-12 months using longest in study) **Reduction of spasticity** • Ashworth and Modified Ashworth • Tardieu, if Ashworth not available **Optimisation of movement** • Active range of movement • Passive range of movement *(also proxy measure of contractures)* **Optimisation of function** • Gross Motor Function Measure (GMFM) • Pediatric Evaluation of disability Inventory – (PEDI) physical score, global score • GAS	

	• COPM - P • AHA • SHUE • Speed or distance of walking (where relevant) **Quality of life** • Child health Questionnaire CHQ • PedsQL • As reported **Pain - Reduction of pain (assessment time under 3 months)** • Pain scale – any objective scale **Acceptability & tolerability** • COPM-S • Compliance • Family estimate of acceptability/ tolerability **Adverse effects** • Overstretch injury • Pain • Fractures/dislocations/subluxations • Pressure sores • Pressure pulses • Eczema • Skin rupture	
Other criteria for inclusion/ exclusion of studies	Papers which include comparisons like “usual care”, “routine PT”, “conventional PT” but do not describe these interventions will be excluded	
Search strategies	See separate document Searches will be limited to papers published from 1970 in Europe, USA, Canada and Australia	
Review strategies	Studies will be assessed for study quality according to the process described in the NICE guidelines manual (January 2009) A list of excluded studies will be provided following weeding Evidence tables and an evidence profile will be used to summarise the evidence	

Question 2 What is the effectiveness of orthotic interventions (for example, ankle-foot orthoses, knee splints, and upper limb orthoses) as compared to no orthoses to optimise movement and function, to prevent or treat contractures in children with spasticity and with or without other motor disorders caused by a non-progressive brain disorder?

	Details	**Additional comments**
Review	What is the effectiveness of orthotic interventions (for	

question	example, ankle-foot orthoses, knee splints, and upper limb orthoses) as compared to no orthoses to optimise movement and function, to prevent or treat contractures in children with spasticity and with or without other motor disorders caused by a non-progressive brain disorder?	
Objectives	1. To determine the effectiveness of orthoses (for example, ankle-foot orthoses, knee splints, and upper limb orthoses) • in improving posture and function • in preventing contractures • in treating contractures 2. To identify the information needs of parents carers children and young people for making informed choices	
Language	English	
Study design	Randomised controlled trials and systematic reviews of RCTs will be included. Studies that compare results from different treatment groups will be included if there are no RCTs available.	
Status	Published papers	
Population	Children with spasticity and with or without other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder	
Intervention	1. ankle-foot orthoses (AFO) 2. Knee orthoses 3. Hip orthoses 4. Upper limb orthoses 5. Body trunk orthoses	
Comparison	A) Comparisons to no treatment/no orthosis Wrist hand orthoses vs no treatment Thumb abduction orthoses vs no treatment Knee orthoses vs no treatment Hip abduction orthoses (trade name SWASH) vs no treatment Solid ankle foot orthosis (AFO) vs no treatment (weightbearing or non-weight bearing) Prescribed footwear / orthopaedic boots vs no treatment Body trunk orthoses vs no treatment B) Comparisons to Solid AFOs (SAFOs) Hinged AFO with plantarflexion stop vs SAFO Posterior leaf spring AFO vs SAFO Anterior ground reaction AFO (a variation on solid AFO) vs SAFO Supramalleolar foot orthosis (SMO/AFO) vs SAFO	

	Foot orthosis / heel cup vs SAFO C) Orthosis 1 vs Another treatment - if clinically relevant for lower limb/upper limb/trunk)	
Outcomes	**1. Optimisation of movement** Active Range of movement (ROM) Passive Range of movement (ROM) **2. Optimisation of function** Goal attainment scale (GAS) GMFM (Gross Motor Function Measure) PEDI (pediatric evaluation of disability inventory) – physical and if not global scale Handling objects Gait efficiency Speed or distance of walking (where relevant) **3. Reduction of pain** As reported **4. QoL** Child Health Questionnaire **5. Acceptability & tolerability** As reported by patient or carer or CYP report including cosmesis **6. Adverse effects** Effects on adjacent joints Effects on muscle strength Overlengthening of musculo-tendinous unit Effects on sensation skin breakdown	
Other criteria for inclusion/ exclusion of studies	Exclude babies/children/young people with extreme dystonia where orthoses are contraindicated	
Search strategies	See separate document	
Review strategies	Studies will be assessed for study quality according to the process described in the NICE guidelines manual (January 2009) A list of excluded studies will be provided following weeding Evidence tables and an evidence profile will be used to summarise the evidence	

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Question 3 What is the effectiveness of oral medications including baclofen, benzodiazepines (diazepam, nitrazepam, clonazepam), tizanidine, dantrolene, clonidine, trihexyphenidyl, tetrabenazine and levodopa in the treatment of spasticity and other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder in children and young people?

	Details	**Additional comments**
Review question	What is the effectiveness of oral medications including baclofen, benzodiazepines (diazepam, nitrazepam, clonazepam), tizanidine, dantrolene, clonidine, trihexyphenidyl, tetrabenazine and levodopa in the treatment of spasticity and other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder in children and young people?	
Objectives	To examine the use of oral medications for the management of spasticity/dystonia By comparing oral medications against placebo – to establish if they work, in whom they work, and to consider when their use is indicated and when it should be stopped. Also to consider whether their administration gives additional benefit compared to physiotherapy alone By comparing different medications – to establish the comparative effectiveness of medications given singly or in combination To establish if there is evidence of additional benefit of oral medications in combination To establish the evidence for indications for lines of treatment (adjunctive or "instead of other treatment")	
Language	English	
Study design	We will include results from a systematic review if it reports a relevant outcome and if it is up-to date. We will include parallel and crossover RCTs with a minimum of n=10 and n=5 respectively. Those with n<30 and n<15 respectively will be discussed with the topic group before inclusion. Studies that are n>30 or n>15 respectively will be included. We will not include controlled clinical trials, cohort studies or non comparative studies such as case studies, case series or case control studies	
Status	Published papers	
Population	Children and young people aged 0 to 18 years old with spasticity with or without other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder	
Intervention	Oral medications: -baclofen -benzodiazepines (diazepam, nitrazepam, clonazepam) -tizanidine - dantrolene - clonidine - trihexyphenidyl - tetrabenazine - levodopa	
Comparison	***Medication 1 vs placebo or no treatment*** 1. Diazepam vs placebo or no treatment 2. Nitrazepam vs placebo or no treatment 3. Clonazepam vs placebo or no treatment 4. Any benzodiazepine vs placebo or no treatment 5. Baclofen vs placebo or no treatment	

	6. Dantrolene vs placebo or no treatment 7. Clonidine vs placebo or no treatment 8. Trihexyphenidyl vs placebo or no treatment 9. Levodopa vs placebo or no treatment 10. Tetrabenazine vs placebo or no treatment 11. Tizanidine vs placebo ***Medication 1 vs Medication 2*** 1. Baclofen vs any benzodiazepine 2. Baclofen vs tizanidine 3. Baclofen vs trihexyphenidyl 4. Baclofen vs levodopa ***Medication 1 + Medication 2 vs placebo or no treatment*** No comparisons requested ***Medication 1 + Medication 2 vs Medication 1*** 12. Dantrolene + baclofen vs baclofen 13. Diazepam + baclofen vs baclofen 1. Trihexyphenidyl plus tetrabenazine vs trihexyphenidyl ***Medication 1 + Medication 2 vs Medication 3*** 1 Baclofen plus dantrolene vs tizanidine 2 Baclofen plus Dantrolene plus diazepam vs baclofen ***Within medication class - Medication 1 vs Medication 2*** 1 Diazepam vs clonazepam 2 Nitrazepam vs clonazepam 3 Diazepam vs nitrazepam	
Outcomes	**Reduction of spasticity/dystonia** - Ashworth scale or Modified Ashworth scale - Tardieu scale - Health professional assessment - Scissoring - Frequency of spasms - Severity of spasms (Barry Albright Dystonia scale) **Optimisation of function** - GMFM - Change in functioning (parents' estimation) - PEDI - GAS - Walking performance, speed or distance or timed up and go - Ability to climb steps, time maintained in sitting position, time maintained in hand knee position, time required to rollover - Change in ease of bathing, bracing, dressing, wheelchair transfer, self help, ease of handling and other activities of daily living (nurse estimation) - Evaluation of activities of daily living - Changes in self help skills - ability to reach for and transfer objects, to place pegs in a board, operate a wheelchair – OT assessed **Acceptability & tolerability** - However measured **QoL** - However measured - (to include Well being of the child, enhancement of the behavioural profile of the child, participation) **Reduction of pain** - However measured **Adverse effects** : - Extrapyramidal symptoms - Nausea - Weight loss - Appetite suppression - Constipation - Increased drooling	

	- Seizure severity and seizure frequency - Drowsiness - hypotonia **Other outcomes :** - Respiratory function - Articulatory speed - Blood count *(monitoring for Tizanidine) - liver function (monitoring for Dantrolene & Tizanidine)	
Other criteria for inclusion/ exclusion of studies		
Search strategies	See separate document	
Review strategies	Studies will be assessed for study quality according to the process described in the NICE guidelines manual (January 2009) A list of excluded studies will be provided following weeding Evidence tables and an evidence profile will be used to summarise the evidence	

Question 4 What is the effectiveness of the long-term use of Intramuscular Botulinum neurotoxin A or B (BoNT) in combination with other interventions (physio/OT/orthoses) as compared to other interventions at reducing spasticity, maintaining motor function and preventing secondary complications in children with spasticity and with or without other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder?

	Details	**Additional comments**
Review question	What is the effectiveness of the long-term use of Intramuscular Botulinum toxin A or B (BoNT) in combination with other interventions (physio/OT/orthoses) as compared to other interventions at reducing spasticity, maintaining motor function and preventing secondary complications in children with spasticity and with or without other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder?	.
Objectives	• To examine clinical effectiveness of a single BoNT treatment at 3-4 and at 6 months and of repeated BoNT treatments at 3-4 and at 12 months in comparison to other treatment modalities • To identify subgroups in whom treatment is particularly (in)effective : By age, severity of spasticity • To examine BoNT administration methods eg guidance techniques, single or	

	multilevel administration • To examine effectiveness by BoNT use in different muscle groups • To examine effectiveness by no or frequency of repeat injections • To consider the information needs of parents, carers, children and young people to make informed decisions	
Language	English	
Study design	Systematic reviews Randomised controlled trials	
Status	Published papers	
Population	Children with spasticity and with or without other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder	
Intervention	Single or repeated injections of intramuscular BoNT A (given with a defined programme of physical therapy using stretching, casting, positioning, strengthening, enforced therapy or orthoses)	
Comparison	**1) BoNT vs another treatment 1** • BoNT and therapy vs therapy alone • BoNT and therapy v placebo and therapy (Therapy interventions : stretching, casting, positioning, strengthening, constraint therapy,orthoses) • BoNT and therapy vs oral antispasmodic medication and therapy • BoNT A vs BoNT B	
Outcomes	**1. Reduction of spasticity** *Upper and Lower limb* • Ashworth scale/modified Ashworth scale for preference. • Tardieu/modified Tardieu **2. Optimisation of movement** Active range of movement Passive range of movement 3. **Optimisation of function** Goal attainment scale (GAS) GMFM (Gross Motor Function Measure) PEDI (pediatric evaluation of disability inventory) – physical and if not global scale COPM-P *Lower Limb*	

	Walking - speed and distance only 4. QoL Child Health Questionnaire 5. Acceptability & tolerability • As reported by patient, carer or CYP • COPM-S 6. Reduction of pain • As reported 7. Adverse effects Antibody build up *Upper limb* • Breathing and swallowing problems • Muscle weakness *Lower limb* • Loss ability to walk • Muscle weakness 8. Prevention of secondary complications • Contractures (proxy measurement is PROM) Outcomes assessed at 3-4 months (ie within the expected therapeutic period) and at 6 months (ie beyond the therapeutic period) were prioritised for the review by the GDG.	
Other criteria for inclusion/ exclusion of studies	Exclude : BoNT vs placebo or no treatment/usual care Exclude : BoNT vs casting Consider BoNT and constraint therapy vs BoNT (or constraint therapy) as part of physio protocol Exclude BoNT (with some background PT/OT/orthoses) vs PT/OT/orthoses treatment 1 + PT/OT/orthoses treatment 2	
Search strategies	See separate document	
Review strategies	Studies will be assessed for study quality according to the process described in the NICE guidelines manual (January 2009) A list of excluded studies will be provided following weeding Evidence tables and an evidence profile will be used to summarise the evidence	

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Question 5 In children and young people with spasticity due to a non-progressive brain disorder does an intrathecal baclofen test (ITB-T) help to identify those likely to benefit from continuous pump-administered intrathecal baclofen (CITB)?

	Details	**Additional comments**
Review question	In children and young people with spasticity due to a non-progressive brain disorder does an intrathecal baclofen test (ITB-T) help to identify those likely to benefit from continuous pump-administered intrathecal baclofen (CITB)?	
Objectives	To consider if clinical and cost benefits of performing a pre-implantation test outweigh harms of not performing a test dose	To consider if clinical and cost benefits of performing a pre-implantation test outweigh harms of not performing a test dose for a responder or a non responder
Language	English	
Study design	Parallel or crossover randomised controlled trials (RCTs) with a long-enough follow-up of at least one of the groups in which the pump was implanted Systematic reviews of RCTs Studies n<10 will be excluded Studies with n=10 – 30 will be discussed with the topic group Studies n> 30 will be included If there is no higher quality evidence then controlled clinical trials will be included and if these are not available then cohort studies, case control studies or case studies where the sample size is >50 will be included	
Status	Published papers	
Population	Children 0 to 18 years old with spasticity and other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder Population: Studies with < 60-70 % of children in a mixed adult/children population will be excluded. Studies with < 60-70% of children with spasticity in a mixed population of children with/without spasticity will be excluded.	

	Studies with < 80-90% of children with non-progressive brain disorder (NPBD) in a mixed population of children with NPBDs and other disorders will be excluded	
Intervention	Testing with ITB prior to pump implementation	
Comparison	Response to ITB-T vs response to Pump administered ITB Eg a ITB test vs. no ITB test b ITB test vs. placebo test	
Outcomes	Reduction of spasticity • Ashworth (preferred) or Tardieu • Reduction in spasms • Passive Range of Movement (PROM) Reduction of dystonia Optimisation of movement and function GMFM (preferably, if available GMFM 66) PEDI GAS Reduction of pain (validated scores if available Ease of care (validated scores if available) Acceptability (parent/carer and or CYP report) Quality of life Serious adverse events	
Other criteria for inclusion/ exclusion of studies	Exclude studies which only report results from neuro - physiological tests but not related to clinical outcomes	
Search strategies	See separate document	
Review strategies	Studies will be assessed for study quality according to the process described in the NICE guidelines manual (January 2009) A list of excluded studies will be provided following weeding	

	Evidence tables and an evidence profile will be used to summarise the evidence	

Question 6 In children and young people with spasticity due to a non-progressive brain disorder what are the benefits and risks of continuous intrathecal baclofen therapy (CITB)?

	Details	**Additional comments**
Review question	In children and young people with spasticity due to a non-progressive brain disorder what are the benefits and risks of continuous intrathecal baclofen therapy (CITB)?	
Objectives	To examine the effectiveness and safety of continuous pump administered ITB (CITB)	
Language	English	
Study design	Parallel or crossover randomised controlled trials (RCTs) with follow-up of at least one of the groups in which the pump was implanted Systematic reviews of RCTs Studies n<10 will be excluded Studies with n=10 – 30 will be discussed with the topic group Studies n> 30 will be included If there is no higher quality evidence then controlled clinical trials or cohort studies will be included. If these are not available then prospective case studies where the sample size is >50 will be included Case control studies will be included only for adverse effects outcomes but not for effectiveness Retrospective case series will be exclude	
Status	Published papers	
Population	Children 0 to 18 years old with spasticity and other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder Population: Studies with < 60-70 % of children in a mixed adult/children population will be excluded Studies with < 60-70% of children with spasticity in a mixed	

	population of children with/without spasticity will be excluded Studies with < 80-90% of children with non-progressive brain disorder (NPBD) in a mixed population of children with NPBDs and other disorders will be excluded	
Intervention	Continuous ITB for at least 6 months	
Comparison	ITB vs. traditional care however (as defined by authors)	
Outcomes	Reduction of spasticity • Ashworth (preferred) or Tardieu • Reduction in spasms • Passive Range of Movement (PROM) Reduction of dystonia Optimisation of movement and function GMFM (preferably, if available GMFM 66) PEDI GAS COPM-P Reduction of pain (validated scores if available) Ease of care (validated scores if available) Acceptability and tolerability COPM-S Parent/carer and or CYP report Quality of life Child Health Questionnaire, Peds QL, or as reported Serious adverse events and complications of treatment 1. Surgical Complications eg. Infection, CSF leak, wound breakdown 2. Mechanical Complications eg. Catheter fracture/kink/disconnection 3. Pump/Operator failure eg overdose or sudden withdrawal of Baclofen 4. Additional Complications for other medical / surgical treatments eg. MRI scan, high frequency USS, scoliosis and hip surgery, VP shunting	
Other criteria for inclusion/ exclusion of studies	Exclude studies which only report result from neuro - physiological tests but not related to clinical outcomes	
Search strategies	See separate document	

Review strategies	Studies will be assessed for study quality according to the process described in the NICE guidelines manual (January 2009) A list of excluded studies will be provided following weeding Evidence tables and an evidence profile will be used to summarise the evidence	

Question 7 What is the effectiveness of orthopaedic surgery in preventing or treating musculoskeletal deformity in children with spasticity caused by a non-progressive brain disorder?

	Details	**Additional comments**
Review question	What is the effectiveness of orthopaedic surgery in preventing or treating musculoskeletal deformity in children with spasticity caused by a non-progressive brain disorder?	
Objectives	• To establish the clinical effectiveness of orthopaedic surgery • To determine the indications for orthopaedic surgery • To determine optimal timing of orthopaedic surgery	
Language	English	
Study design	Parallel or crossover randomised controlled trials and systematic reviews of RCTs are included Studies n<10 will be excluded Studies with n=10 – 30 will be discussed with the topic group Studies n> 30 will be included If there is no higher quality evidence then controlled clinical trials or cohort studies will be included. If these are not available then prospective case series will be included	
Status	Published papers	
Population	Children with spasticity caused by a non-progressive brain disorder	
Intervention	1. tendon lengthening 2. tendon transfer 3. osteotomy 4. joint fusion/arthrodesis 5. early bony and/or soft tissue	

Comparison	Comparisons to examine efficacy 1. tendon lengthening vs. no intervention 2. tendon transfer vs. no intervention 3. osteotomy vs. no intervention 4. joint fusion/arthrodesis vs. no intervention 5. early bony and/or soft tissue vs no intervention 6. early bony and soft tissue vs soft tissue alone 7. surgery (the above procedures) vs. physiotherapy 8. surgery (the above procedures) vs. orthoses 9. surgery (the above procedures) vs. botulinum toxin 2. 10. early surgery vs delayed surgery	
Outcomes	**1. Optimisation of movement and function** • Goal attainment scale (GAS) • Active and passive range of movement (ROM) • GMFM (Gross Motor Function Measure) • PEDI (pediatric evaluation of disability inventory) – physical and if not global scale COPM-P • timed walk • timed up and go • Any other speed or distance of walking estimate □ Ease of care **2. *Prevention of deterioration*** Hip Migration Percentage **3. Reduction of pain** As reported **4. QoL** As reported, or from the Child Health Questionnaire or Peds QL **5. Acceptability & tolerability** COPM-S As reported by patient or carer or CYP **6. Adverse effects**	
Other criteria for		

inclusion/ exclusion of studies		
Search strategies	See separate document	
Review strategies	Studies will be assessed for study quality according to the process described in the NICE guidelines manual (January 2009) A list of excluded studies will be provided following weeding Evidence tables and an evidence profile will be used to summarise the evidence	

Question 8 What is the effectiveness of single event multilevel orthopaedic surgery (SEMLS) in managing musculoskeletal deformity in children with spasticity caused by a non-progressive brain disorder?

	Details	**Additional comments**
Review question	What is the effectiveness of single event multilevel orthopaedic surgery (SEMLS) in managing musculoskeletal deformity in children with spasticity caused by a non-progressive brain disorder?	
Objectives	To establish the clinical effectiveness of SEMLS	
Language	English	
Study design	Parallel or crossover randomised controlled trials and systematic reviews of RCTs are included Studies n<10 will be excluded Studies with n=10 – 30 will be discussed with the topic group Studies n> 30 will be included If there is no higher quality evidence then controlled clinical trials or cohort studies will be included.	
Status	Published papers	
Population	Children with musculoskeletal deformity associated with spasticity (with or without other motor disorders) caused by a non-progressive brain disorders	
Intervention	Single Event Multilevel surgery Procedures: 1. tendon lengthening 2. tendon transfer 3. osteotomy 4. joint fusion/arthrodesis 5. early bony 6. soft tissue	

Comparison	1. SEMLS (the above procedures) vs orthopaedic surgery 2. SEMLS (the above procedures) vs. Physiotherapy 3. SEMLS (the above procedures) vs. orthoses 4. SEMLS (the above procedures) vs BoNT	
Outcomes	• **1. Optimisation of movement and function** • Goal attainment scale (GAS) • Active and passive range of movement (ROM) • GMFM (Gross Motor Function Measure) • PEDI (pediatric evaluation of disability inventory) – physical and if not global scale COPM - P • timed walk • timed up and go • Any other speed or distance of walking estimate □ Ease of care **2. *Prevention of deterioration*** □ Hip Migration Percentage **3. Reduction of pain** As reported **4. QoL** As reported, for example Child Health Questionnaire, Peds QL **5. Acceptability & tolerability** COPM-S As reported by patient or carer or CYP report **6. Adverse effects** As reported	
Other criteria for inclusion/ exclusion of studies		
Search strategies	See separate document	

Review strategies	Studies will be assessed for study quality according to the process described in the NICE guidelines manual (January 2009) A list of excluded studies will be provided following weeding Evidence tables and an evidence profile will be used to summarise the evidence	

Question 9 What is the clinical effectiveness of Selective Dorsal Rhizotomy in children and young people with spasticity caused by a non-progressive brain disorder?

	Details	**Additional comments**
Review question	What is the clinical effectiveness of Selective Dorsal Rhizotomy in children and young people with spasticity caused by a non-progressive brain disorder?	.
Objectives	To establish clinical effectiveness and long-term outcomes of SDR in children and young people with spasticty	
Language	*English*	
Study design	Randomised controlled trials (RCTs) and systematic reviews of RCTs will be included. Non-randomised prospective comparative studies will be included Case series > 200 will be included for evidence on major adverse events that are clearly related to the SDR procedure	.
Status	*Published papers*	
Population	Children and young people with spasticity (with or without other motor disorders) caused by a non-progressive brain disorder	
Intervention	Selective Dorsal Rhizotomy	
Comparisons	SDR and therapy vs therapy alone SDR and therapy versus Soft Tissue Surgery (eg, tendonotomy) and therapy SDR and therapy versus Intrathecal Baclofen and therapy SDR and therapy v Programme of Botulinum injections and therapy	
Outcomes	Reduction of spasticity • Ashworth (preferred) or Tardieu • Active and passive range of movement (PROM) Optimisation of movement and function • Walking speed and distance • GMFM (preferably, if available	

	GMFM 66) • PEDI • GAS-T Reduction of pain (validated scores if available, otherwise non validated reporting) Acceptability (parent/carer and or CYP report) Serious adverse events, including • Mortality • Bladder dysfunction (voiding difficulties) • Bowel dysfunction (faecal incontinence) • Scoliosis • Hip dislocation Quality of life Time frames for measured outcomes Early - < 6 Months (if multiple measurements pre 6 months take earliest reported in study) Intermediate 6-12 months Late > >12 months (if multiple measurements post 12 months take the last time-point)	
Other criteria for inclusion/ exclusion of studies		
Search strategies		…
Review strategies	Studies will be assessed for study quality according to the process described in the NICE guidelines manual (January 2009) A list of excluded studies will be provided following weeding Evidence tables and an evidence profile will be used to summarise the evidence	…

Appendix E Outcome measures

Reduction of spasticity

Data assessing muscle tone were preferentially extracted if measured using Ashworth scores. The GDG acknowledged that although there was no consistent method of presenting or summarising outcomes using this categorical scoring method, it was more readily and commonly performed in clinical practice than estimates derived using Tardieu scores. The NCC-WCH technical team recorded in the evidence tables how Ashworth scores were estimated in the included studies. Where Ashworth scores were not available, Tardieu scores (the estimate R2 – R1) were included.

Optimisation of movement and function

Movement incorporates joint movement and walking ability. Functional ability was assessed using validated tools that estimate the child or young person's skills and ability to reach developmental milestones, predefined tasks, general mobility, or in combined activities reflecting ICF domains of participation (for example, self-care). Functional ability could be reported by the child or young person, their parent or other carers.

The GDG recognised the importance of individualised goal setting in determining functional optimisation. The GDG considered the limitations of each tool (for example, its application to children and young people of different ages and with different disabilities and levels of comprehension, its sensitivity to detect change, floor and ceiling effects).

The GDG prioritised the following assessments of movement and function.

Movement

Range of motion

Estimates of active and passive range of movement (ROM) were included where possible. ROM is the distance and direction a joint can move between its limits. Active ROM is ideally measured with a goniometer and estimates the range of movement through which a child or young person can move a joint actively (without assistance) using the adjacent muscles (that is, active movements use contractile muscle tissues as well as inert tissues). Further testing with passive motion and manual resistance helps to clarify the tissues at fault and the source of any associated pain. Passive ROM is assessed while the joint is moved with assistance and with no effort from the child or young person (that is, the contractile muscle tissues are not engaged and movement, or pain, is a function of inert tissues only).

The GDG's view was that improvements in active and passive ROM would become clinically worthwhile when they resulted in clinically important improvement in function, For example, passive ROM might translate to an improvement in ease of care, reduction of pain, or improved Gross Motor Function Measure (GMFM; see below). In the absence of long-term studies, the GDG's view was that passive ROM was a reasonable early indicator (proxy) for development of contractures.

Function

Walking

Gait assessment varies in complexity. It can range through observation of walking, examination of footprints in paint on a strip of paper, to a full gait analysis using specialised computerised equipment

to observe the effort required to walk and specific parameters of motion, positioning and forces generated by the leg and foot during walking. The GDG prioritised estimations of walking speed and distance only as clinically these would be universally estimable and because they believed that ultimately they are the most important outcomes for children and young people. The GDG noted that inability to walk would not be a relevant outcome for girls aged under 15 months or boys aged under 18 months, although for early walkers a pattern of walking typical of cerebral palsy (for example, walking on the toes or dragging a leg) would warrant further investigation.

Goal Attainment Scaling

The GDG agreed with emerging evidence that goals are more likely to be achieved if children and young people are involved in setting them. The GDG therefore gave a high prioritisation to Goal Attainment Scaling (GAS). This is a mathematical technique for quantifying achievement (or non achievement) of set goals. Usually three to five specific, measurable, achievable, realistic, and timebound (SMART) goals are identified individually to suit the child or young person, and levels are set around current and expected levels of performance. Goals may be weighted in order of priority for an infividual child or young person and anticipated difficulty. Each goal is rated on a five-point scale indicating improvement or deterioration. The composite goal score can be transformed mathematically into a standardised T-score, with a mean of 50 and standard deviation (SD) of 10.

The GDG believed that this technique would avoid some potential problems of other standardised measures, such as a ceiling effect, lack of sensitivity and disjunction between the child or young person's main concerns and domains of the measure.

Canadian Occupational Performance Measure

The Canadian Occupational Performance Measure (COPM) measures change in performance over time as perceived by the child or young person. It is completed by the child or young person with assistance from an occupational therapist. The GDG noted that this tool may be difficult to use with children or young people who have communication problems or who cannot understand the scoring system. The developers of the COPM reported difficulty using it with children aged under 8 years. The COPM is individualised for the child or young person, restricting generalised interpretation of its results.

There are two components to the COPM: performance and satisfaction. The GDG considered COPM performance as a measure of function and COPM satisfaction as a measure of acceptability and tolerability. Goals are set with the child or young person for daily activities in three domains: self-care, productivity, and leisure. The child or young person then chooses their five most important activities and grades each of them from 1 to 10 for performance and satisfaction. The mean values of the five scores become the baseline performance and satisfaction scores (maximum of 10, minimum of 1). Scoring is repeated for the same activities after a period of time. Evidence suggests that a change of two or more points at reassessment is clinically meaningful.

Paediatric Evaluation of Disability Inventory

The Paediatric Evaluation of Disability Inventory (PEDI) is a paediatric clinical assessment tool that supports a programme of intervention priorities and goal setting by describing functional skill attainment (rather than component skills) and detecting delays in attainment in children aged 6 months to 7.5 years with a range of disabling conditions and mixed impairments (Haley 1992). It can also be used to evaluate skills of older children whose abilities arel below those expected of a child aged 7.5 years. It can be used to evaluate progress over time in individuals or groups or changes following an intervention.

The tool is administered by healthcare professionals and educators through observation or structured interviews with parents or carers. It evaluates three separate domains (self-care, mobility and social function), which can be examined separately or in combination. Scores for capability and performance are calculated for each domain and can be further analysed as a normative standard or scaled score.

Clinically meaningful differences in scores are those that exceed two standard errors (SEs) above or below the standard normative score for a particular domain (self-care, mobility, or social function) or two SEs above or below the scaled score for a particular domain. This has been expressed as a change score of 11.5, or approximately 11% (at a 95% confidence level), in a study that aimed to

determine the minimal clinically important difference for children for inpatient rehabilitation (Lyer 2003).

Gross Motor Function Measure

The GMFM is a clinical assessment tool that measures gross motor function and has been validated for use in children and young people with cerebral palsy aged 5 months to 16 years. There are two versions: the GMFM 88 has 88 items and raw scores are summarised on an ordinal scale; the more recently developed GMFM 66 contains a subset of GMFM 88 and is converted in an interval scale.

Parents and therapists assess five dimensions of the child or young person's functioning: lying and rolling; sitting; crawling and kneeling; standing; and walking running and jumping. Each item of the tool is scored from 0 (does not initiate) to 3 (completes) in each dimension. Research has identified that at least 13 items are needed to produce meaningful scores.

Clinically meaningful differences in scores (where 0 is 'not important' and 7 is 'tremendously important') have been researched from the parents' and therapists' perspectives. The results obtained for parents were: 4.6 (2.7% increase in GMFM score), 5.8 (5.2% increase in GMFM score change), and 6.0 (1.6% increase in GMFM score). The results for therapists were: 3.8 (1.8% increase in GMFM score), 5.4 (7% increase in GMFM score), and 6.0 (24% increase in GMFM score).

Reduction of pain

The GDG considered all reported measures of pain.

Adverse effects of interventions

The GDG prioritised intervention-specific adverse effects (for example, drowsiness with benzodiazepines, antibodies raised to botulinum toxin, or urinary problems following selective dorsal rhizotomy (SDR)). The GDG also considered all outcomes indicative of deterioration (for example, development of contractures or increased pain).

Acceptability and tolerability

For evaluating acceptability and tolerability in children and young people, the GDG prioritised validated assessment techniques (for example, COPM satisfaction) and also considered study-specific questionnaire.

Health related quality of life

The Child Health Questionnaire (CHQ), a generic quality of life instrument designed for children and young people aged 5-18 years, measures dimensions in two domains: physical and psychosocial. The physical domain includes scales for physical functioning, role or social limitations, general health perceptions; and body pain. The psychosocial domain includes scales for role or social limitations, emotions and behaviour, self-esteem; mental health; general behaviour; impact on parents' emotions, impact on parents' time, family activities; and family cohesion.

There are four versions of the CHQ, these being parent forms with 98, 50 or 28 items, and a self-report form for children and young people aged 10-18 years, although the self-report form is rarely used. The parent form with 50 items is used most frequently, and there is conflicting evidence regarding its reliability for assessing the outcome of an intervention in children with cerebral palsy.

Generic questionnaires tend to have lower responsiveness to change and less sensitivity than disease-specific measures. The GDG noted concerns regarding the relevance of some items in the CHQ for children and young people with severe cerebral palsy, particularly the items relating to physical functioning (for example, cycling and playing football). The GDG also noted that the CHQ does not address issues related to transferring or handling, limiting its value when applied to children and young people with cerebral palsy. The GDG was aware that floor and ceiling effects have been

reported, with floor effects occurring more frequently in physical domains, and ceiling effects occurring more frequently in psychosocial domains. The GDG recognised that this suggests poor face validity of parent-reported CHQ data when applied to children and young people with cerebral palsy, but concluded that the CHQ was an acceptable tool for evaluating health related quality of life in the guideline.

References

Haley S et al. 1992. Pediatric Evaluation of Disability Inventory (PEDI) Development, Standardization and Administration Manual. Boston: PEDI Research Group, New England Medical Center Hospitals:1992

Lyer LV et al. 2003 .Establishing minimal clinically important differences for scores on the pediatric evaluation of disability inventory for inpatient rehabilitation Phys.Ther. 83(10) 888-98

Appendix F Search strategies

Question 1 What is the effectiveness of physical therapy (physiotherapy and occupational therapy) interventions in children with spasticity with or without other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non progressive brain disorder?

Ovid MEDLINE(R) 1950+

SPAST_Q1_physio_RCTs_SRs_ medline_060910

#	Searches
1	randomized controlled trial.pt.
2	controlled clinical trial.pt.
3	DOUBLE BLIND METHOD/
4	SINGLE BLIND METHOD/
5	RANDOM ALLOCATION/
6	RANDOMIZED CONTROLLED TRIALS/
7	or/1-6
8	((single or double or triple or treble) adj5 (blind$ or mask$)).tw,sh.
9	clinical trial.pt.
10	exp CLINICAL TRIAL/
11	exp CLINICAL TRIALS AS TOPIC/
12	(clinic$ adj5 trial$).tw,sh.
13	PLACEBOS/
14	placebo$.tw,sh.
15	random$.tw,sh.
16	or/8-15
17	or/7,16
18	META ANALYSIS/
19	META ANALYSIS AS TOPIC/
20	meta analysis.pt.
21	(metaanaly$ or meta-analy$ or (meta adj analy$)).tw,sh.
22	(systematic$ adj5 (review$ or overview$)).tw,sh.
23	(methodologic$ adj5 (review$ or overview$)).tw,sh.
24	or/18-23

25	review$.pt.
26	(medline or medlars or embase or cinahl or cochrane or psycinfo or psychinfo or psychlit or psyclit or "web of science" or "science citation" or scisearch).tw.
27	((hand or manual$) adj2 search$).tw.
28	(electronic database$ or bibliographic database$ or computeri?ed database$ or online database$).tw,sh.
29	(pooling or pooled or mantel haenszel).tw,sh.
30	(peto or dersimonian or der simonian or fixed effect).tw,sh.
31	or/26-30
32	and/25,31
33	or/24,32
34	letter.pt.
35	case report.tw.
36	comment.pt.
37	editorial.pt.
38	historical article.pt.
39	or/34-38
40	17 not 39
41	33 not 39
42	or/40-41
43	MUSCLE SPASTICITY/
44	exp SPASM/
45	exp MUSCLE HYPERTONIA/
46	(spastic$ or spasm$).ti,ab.
47	hyperton$.ti,ab.
48	or/43-47
49	exp BRAIN INJURIES/
50	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
51	ABI.ti,ab.
52	static encephalopath$.ti,ab.
53	CEREBRAL PALSY/
54	(cerebral adj3 pals$).ti,ab.
55	exp MENINGITIS/
56	(meningitis or meningococcal).ti,ab.
57	exp CRANIOCEREBRAL TRAUMA/
58	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
59	exp ENCEPHALITIS/
60	encephaliti$.ti,ab.

61	exp CEREBROVASCULAR DISORDERS/
62	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
63	exp HYDROCEPHALUS/
64	hydrocephal$.ti,ab.
65	SHAKEN BABY SYNDROME/
66	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
67	or/49-66
68	and/48,67
69	exp PHYSICAL THERAPY MODALITIES/
70	exp REHABILITATION/
71	OCCUPATIONAL THERAPY/
72	((physical or occupational) adj3 therap$).ti,ab.
73	physiotherap$.ti,ab.
74	(rehab$ or habilitat$).ti,ab.
75	exp EXERCISE THERAPY/
76	exp EXERCISE MOVEMENT TECHNIQUES/
77	RESISTANCE TRAINING/
78	exp MUSCLE STRENGTH/
79	(musc$ adj3 (strength$ or strong$)).ti,ab.
80	((exercis$ or mov$) adj3 therap$).ti,ab.
81	kinesi?therap$.ti,ab.
82	((resist$ or strength$ or weight$ or agonist$ or circuit$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
83	((function$ or locomot$ or e#centric or concentric or target$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
84	treadmill$.ti,ab.
85	(multi?gym$ or multi gym$).ti,ab.
86	(cycle$ or bicycle$ or bike$ or tricycle$ or trike$ or hand cycle$ or hand?cycle$).ti,ab.
87	((rebound or trampolin$) adj3 therap$).ti,ab.
88	(proprioceptive neuromuscular facilitation or PNF).ti,ab.
89	(motor adj3 (learn$ or train$ or re learn$ or re?learn$ or perform$)).ti,ab.
90	MRP.ti,ab.
91	((task$ or environment$ or context$ or occupat$ or participat$ or function$ or activit$) adj3 (manipulat$ or approach$ or train$ or therap$)).ti,ab.
92	dynamic system$.ti,ab.
93	ACTIVITIES OF DAILY LIVING/
94	(activ$ adj3 (daily living or daily life)).ti,ab.
95	ADL.ti,ab.

96	(bobath or NDT).ti,ab.
97	((neuro?development$ or neuro development$ or neuromuscular or key point$) adj3 (train$ or treatment$ or therap$ or facilitat$ or approach$ or control$)).ti,ab.
98	system$ approach$.ti,ab.
99	(normal adj2 mov$ adj2 (pattern$ or facilitat$)).ti,ab.
100	(abnormal adj2 mov$ adj2 (inhibit$ or control$)).ti,ab.
101	RESTRAINT, PHYSICAL/
102	(constraint$ adj3 therap$).ti,ab.
103	(CIMT or MCIMT or "forced use").ti,ab.
104	MUSCLE STRETCHING EXERCISES/
105	((activ$ or passiv$ or musc$ or dynamic$ or static$ or isometric$ or relax$ or ballistic$) adj3 (stretch$ or mov$)).ti,ab.
106	CASTS, SURGICAL/
107	((serial or series) adj3 cast$).ti,ab.
108	exp POSTURE/
109	(postur$ adj3 (care$ or caring or manag$)).ti,ab.
110	(functional sitting position$ or FSP).ti,ab.
111	((speciali#ed or adapt$ or solution$ or mo?ld$) adj3 seat$).ti,ab.
112	(knee$ adj3 block$).ti,ab.
113	(sleep$ adj3 system$).ti,ab.
114	(stand$ adj3 (fram$ or practi$)).ti,ab.
115	HYDROTHERAPY/
116	(hydrotherap$ or aquatherap$).ti,ab.
117	((water or swim$ or aquatic) adj3 therap$).ti,ab.
118	exp ELECTRIC STIMULATION THERAPY/
119	(electric$ stimulation adj3 (therap$ or function$ or neuromuscular)).ti,ab.
120	FES.ti,ab.
121	(home$ adj3 (activ$ or handl$ or interven$ or therap$ or program$ or care$ or caring)).ti,ab.
122	BIOFEEDBACK, PSYCHOLOGY/
123	(bio feedback$ or bio?feedback$ or feedback$).ti,ab.
124	THERAPY, COMPUTER-ASSISTED/
125	(virtual realit$ or VR).ti,ab.
126	(balance adj3 (train$ or practi$ or exercis$ or game$)).ti,ab.
127	wii fit.ti,ab.
128	(computer$ adj3 (therap$ or game$)).ti,ab.
129	or/69-128
130	and/68,129
131	limit 130 to english language

132	limit 131 to animals
133	limit 131 to (animals and humans)
134	132 not 133
135	131 not 134
136	limit 135 to yr="1970 -Current"
137	and/42,136

Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations

SPAST_Q1_physio_medline_in-process_060910

#	Searches
1	(spastic$ or spasm$).ti,ab.
2	hyperton$.ti,ab.
3	or/1-2
4	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
5	ABI.ti,ab.
6	static encephalopath$.ti,ab.
7	(cerebral adj3 pals$).ti,ab.
8	(meningitis or meningococcal).ti,ab.
9	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
10	encephaliti$.ti,ab.
11	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
12	hydrocephal$.ti,ab.
13	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
14	or/4-13
15	and/3,14
16	((physical or occupational) adj3 therap$).ti,ab.
17	physiotherap$.ti,ab.
18	(rehab$ or habilitat$).ti,ab.
19	(musc$ adj3 (strength$ or strong$)).ti,ab.
20	((exercis$ or mov$) adj3 therap$).ti,ab.
21	kinesi?therap$.ti,ab.
22	((resist$ or strength$ or weight$ or agonist$ or circuit$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
23	((function$ or locomot$ or e#centric or concentric or target$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
24	treadmill$.ti,ab.
25	(multi?gym$ or multi gym$).ti,ab.
26	(cycle$ or bicycle$ or bike$ or tricycle$ or trike$ or hand cycle$ or hand?cycle$).ti,ab.
27	((rebound or trampolin$) adj3 therap$).ti,ab.
28	(proprioceptive neuromuscular facilitation or PNF).ti,ab.
29	(motor adj3 (learn$ or train$ or re learn$ or re?learn$ or perform$)).ti,ab.
30	MRP.ti,ab.

31	((task$ or environment$ or context$ or occupat$ or participat$ or function$ or activit$) adj3 (manipulat$ or approach$ or train$ or therap$)).ti,ab.
32	dynamic system$.ti,ab.
33	(activ$ adj3 (daily living or daily life)).ti,ab.
34	ADL.ti,ab.
35	(bobath or NDT).ti,ab.
36	((neuro?development$ or neuro development$ or neuromuscular or key point$) adj3 (train$ or treatment$ or therap$ or facilitat$ or approach$ or control$)).ti,ab.
37	system$ approach$.ti,ab.
38	(normal adj2 mov$ adj2 (pattern$ or facilitat$)).ti,ab.
39	(abnormal adj2 mov$ adj2 (inhibit$ or control$)).ti,ab.
40	(constraint$ adj3 therap$).ti,ab.
41	(CIMT or MCIMT or "forced use").ti,ab.
42	((activ$ or passiv$ or musc$ or dynamic$ or static$ or isometric$ or relax$ or ballistic$) adj3 (stretch$ or mov$)).ti,ab.
43	((serial or series) adj3 cast$).ti,ab.
44	(postur$ adj3 (care$ or caring or manag$)).ti,ab.
45	(functional sitting position$ or FSP).ti,ab.
46	((speciali#ed or adapt$ or solution$ or mo?ld$) adj3 seat$).ti,ab.
47	(knee$ adj3 block$).ti,ab.
48	(sleep$ adj3 system$).ti,ab.
49	(stand$ adj3 (fram$ or practi$)).ti,ab.
50	(hydrotherap$ or aquatherap$).ti,ab.
51	((water or swim$ or aquatic) adj3 therap$).ti,ab.
52	(electric$ stimulation adj3 (therap$ or function$ or neuromuscular)).ti,ab.
53	FES.ti,ab.
54	(home$ adj3 (activ$ or handl$ or interven$ or therap$ or program$ or care$ or caring)).ti,ab.
55	(bio feedback$ or bio?feedback$ or feedback$).ti,ab.
56	(virtual realit$ or VR).ti,ab.
57	(balance adj3 (train$ or practi$ or exercis$ or game$)).ti,ab.
58	wii fit.ti,ab.
59	(computer$ adj3 (therap$ or game$)).ti,ab.
60	or/16-59
61	and/15,60

1
2

EBM Reviews - Cochrane Central Register of Controlled Trials

SPAST_Q1_physio_cctr_060910

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	or/1-5
7	exp BRAIN INJURIES/
8	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
9	ABI.ti,ab.
10	static encephalopath$.ti,ab.
11	CEREBRAL PALSY/
12	(cerebral adj3 pals$).ti,ab.
13	exp MENINGITIS/
14	(meningitis or meningococcal).ti,ab.
15	exp CRANIOCEREBRAL TRAUMA/
16	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
17	exp ENCEPHALITIS/
18	encephaliti$.ti,ab.
19	exp CEREBROVASCULAR DISORDERS/
20	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
21	exp HYDROCEPHALUS/
22	hydrocephal$.ti,ab.
23	SHAKEN BABY SYNDROME/
24	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
25	or/7-24
26	and/6,25
27	exp PHYSICAL THERAPY MODALITIES/
28	exp REHABILITATION/
29	OCCUPATIONAL THERAPY/
30	((physical or occupational) adj3 therap$).ti,ab.
31	physiotherap$.ti,ab.
32	(rehab$ or habilitat$).ti,ab.

33	exp EXERCISE THERAPY/
34	exp EXERCISE MOVEMENT TECHNIQUES/
35	RESISTANCE TRAINING/
36	exp MUSCLE STRENGTH/
37	(musc$ adj3 (strength$ or strong$)).ti,ab.
38	((exercis$ or mov$) adj3 therap$).ti,ab.
39	kinesi?therap$.ti,ab.
40	((resist$ or strength$ or weight$ or agonist$ or circuit$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
41	((function$ or locomot$ or e#centric or concentric or target$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
42	treadmill$.ti,ab.
43	(multi?gym$ or multi gym$).ti,ab.
44	(cycle$ or bicycle$ or bike$ or tricycle$ or trike$ or hand cycle$ or hand?cycle$).ti,ab.
45	((rebound or trampolin$) adj3 therap$).ti,ab.
46	(proprioceptive neuromuscular facilitation or PNF).ti,ab.
47	(motor adj3 (learn$ or train$ or re learn$ or re?learn$ or perform$)).ti,ab.
48	MRP.ti,ab.
49	((task$ or environment$ or context$ or occupat$ or participat$ or function$ or activit$) adj3 (manipulat$ or approach$ or train$ or therap$)).ti,ab.
50	dynamic system$.ti,ab.
51	ACTIVITIES OF DAILY LIVING/
52	(activ$ adj3 (daily living or daily life)).ti,ab.
53	ADL.ti,ab.
54	(bobath or NDT).ti,ab.
55	((neuro?development$ or neuro development$ or neuromuscular or key point$) adj3 (train$ or treatment$ or therap$ or facilitat$ or approach$ or control$)).ti,ab.
56	system$ approach$.ti,ab.
57	(normal adj2 mov$ adj2 (pattern$ or facilitat$)).ti,ab.
58	(abnormal adj2 mov$ adj2 (inhibit$ or control$)).ti,ab.
59	RESTRAINT, PHYSICAL/
60	(constraint$ adj3 therap$).ti,ab.
61	(CIMT or MCIMT or "forced use").ti,ab.
62	MUSCLE STRETCHING EXERCISES/
63	((activ$ or passiv$ or musc$ or dynamic$ or static$ or isometric$ or relax$ or ballistic$) adj3 (stretch$ or mov$)).ti,ab.
64	CASTS, SURGICAL/
65	((serial or series) adj3 cast$).ti,ab.
66	exp POSTURE/
67	(postur$ adj3 (care$ or caring or manag$)).ti,ab.

68	(functional sitting position$ or FSP).ti,ab.
69	((speciali#ed or adapt$ or solution$ or mo?ld$) adj3 seat$).ti,ab.
70	(knee$ adj3 block$).ti,ab.
71	(sleep$ adj3 system$).ti,ab.
72	(stand$ adj3 (fram$ or practi$)).ti,ab.
73	HYDROTHERAPY/
74	(hydrotherap$ or aquatherap$).ti,ab.
75	((water or swim$ or aquatic) adj3 therap$).ti,ab.
76	exp ELECTRIC STIMULATION THERAPY/
77	(electric$ stimulation adj3 (therap$ or function$ or neuromuscular)).ti,ab.
78	FES.ti,ab.
79	(home$ adj3 (activ$ or handl$ or interven$ or therap$ or program$ or care$ or caring)).ti,ab.
80	BIOFEEDBACK, PSYCHOLOGY/
81	(bio feedback$ or bio?feedback$ or feedback$).ti,ab.
82	THERAPY, COMPUTER-ASSISTED/
83	(virtual realit$ or VR).ti,ab.
84	(balance adj3 (train$ or practi$ or exercis$ or game$)).ti,ab.
85	wii fit.ti,ab.
86	(computer$ adj3 (therap$ or game$)).ti,ab.
87	or/27-86
88	and/26,87

1
2

EBM Reviews - Cochrane Database of Systematic Reviews 2005+, EBM Reviews - Database of Abstracts of Reviews of Effects

SPAST_Q1_physio_cdsrdare_060910

#	Searches
1	MUSCLE SPASTICITY.kw.
2	SPASM.kw.
3	MUSCLE HYPERTONIA.kw.
4	(spastic$ or spasm$).tw,tx.
5	hyperton$.tw,tx.
6	or/1-5
7	BRAIN INJURIES.kw.
8	((non progressive or non?progressive or acquired) adj2 brain injur$).tw,tx.
9	ABI.tw,tx.
10	static encephalopath$.tw,tx.
11	CEREBRAL PALSY.kw.
12	(cerebral adj3 pals$).tw,tx.
13	MENINGITIS.kw.
14	(meningitis or meningococcal).tw,tx.
15	CRANIOCEREBRAL TRAUMA.kw.
16	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw,tx.
17	ENCEPHALITIS.kw.
18	encephaliti$.tw,tx.
19	CEREBROVASCULAR DISORDERS.kw.
20	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw,tx.
21	HYDROCEPHALUS.kw.
22	hydrocephal$.tw,tx.
23	SHAKEN BABY SYNDROME.kw.
24	(shak$ adj3 (injur$ or syndrome$)).tw,tx.
25	or/7-24
26	and/6,25
27	PHYSICAL THERAPY MODALITIES.kw.
28	REHABILITATION.kw.
29	OCCUPATIONAL THERAPY.kw.
30	((physical or occupational) adj3 therap$).tw,tx.
31	physiotherap$.tw,tx.

32	(rehab$ or habilitat$).tw,tx.
33	EXERCISE THERAPY.kw.
34	EXERCISE MOVEMENT TECHNIQUES.kw.
35	RESISTANCE TRAINING.kw.
36	MUSCLE STRENGTH.kw.
37	(musc$ adj3 (strength$ or strong$)).tw,tx.
38	((exercis$ or mov$) adj3 therap$).tw,tx.
39	kinesi?therap$.tw,tx.
40	((resist$ or strength$ or weight$ or agonist$ or circuit$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).tw,tx.
41	((function$ or locomot$ or e#centric or concentric or target$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).tw,tx.
42	treadmill$.tw,tx.
43	(multi?gym$ or multi gym$).tw,tx.
44	(cycle$ or bicycle$ or bike$ or tricycle$ or trike$ or hand cycle$ or hand?cycle$).tw,tx.
45	((rebound or trampolin$) adj3 therap$).tw,tx.
46	(proprioceptive neuromuscular facilitation or PNF).tw,tx.
47	(motor adj3 (learn$ or train$ or re learn$ or re?learn$ or perform$)).tw,tx.
48	MRP.tw,tx.
49	((task$ or environment$ or context$ or occupat$ or participat$ or function$ or activit$) adj3 (manipulat$ or approach$ or train$ or therap$)).tw,tx.
50	dynamic system$.tw,tx.
51	ACTIVITIES OF DAILY LIVING.kw.
52	(activ$ adj3 (daily living or daily life)).tw,tx.
53	ADL.tw,tx.
54	(bobath or NDT).tw,tx.
55	((neuro?development$ or neuro development$ or neuromuscular or key point$) adj3 (train$ or treatment$ or therap$ or facilitat$ or approach$ or control$)).tw,tx.
56	system$ approach$.tw,tx.
57	(normal adj2 mov$ adj2 (pattern$ or facilitat$)).tw,tx.
58	(abnormal adj2 mov$ adj2 (inhibit$ or control$)).tw,tx.
59	RESTRAINT, PHYSICAL.kw.
60	(constraint$ adj3 therap$).tw,tx.
61	(CIMT or MCIMT or "forced use").tw,tx.
62	MUSCLE STRETCHING EXERCISES.kw.
63	((activ$ or passiv$ or musc$ or dynamic$ or static$ or isometric$ or relax$ or ballistic$) adj3 (stretch$ or mov$)).tw,tx.
64	CASTS, SURGICAL.kw.
65	((serial or series) adj3 cast$).tw,tx.
66	POSTURE.kw.

67	(postur$ adj3 (care$ or caring or manag$)).tw,tx.
68	(functional sitting position$ or FSP).tw,tx.
69	((speciali#ed or adapt$ or solution$ or mo?ld$) adj3 seat$).tw,tx.
70	(knee$ adj3 block$).tw,tx.
71	(sleep$ adj3 system$).tw,tx.
72	(stand$ adj3 (fram$ or practi$)).tw,tx.
73	HYDROTHERAPY.kw.
74	(hydrotherap$ or aquatherap$).tw,tx.
75	((water or swim$ or aquatic) adj3 therap$).tw,tx.
76	ELECTRIC STIMULATION THERAPY.kw.
77	(electric$ stimulation adj3 (therap$ or function$ or neuromuscular)).tw,tx.
78	FES.tw,tx.
79	(home$ adj3 (activ$ or handl$ or interven$ or therap$ or program$ or care$ or caring)).tw,tx.
80	BIOFEEDBACK, PSYCHOLOGY.kw.
81	(bio feedback$ or bio?feedback$ or feedback$).tw,tx.
82	THERAPY, COMPUTER-ASSISTED.kw.
83	(virtual realit$ or VR).tw,tx.
84	(balance adj3 (train$ or practi$ or exercis$ or game$)).tw,tx.
85	wii fit.tw,tx.
86	(computer$ adj3 (therap$ or game$)).tw,tx.
87	or/27-86
88	and/26,87

1
2

EMBASE 1980+

SPAST_Q1_physio_RCTs_SRs_embase_060910

#	Searches
1	CLINICAL TRIALS/
2	(clinic$ adj5 trial$).ti,ab,sh.
3	SINGLE BLIND PROCEDURE/
4	DOUBLE BLIND PROCEDURE/
5	RANDOM ALLOCATION/
6	CROSSOVER PROCEDURE/
7	PLACEBO/
8	placebo$.ti,ab,sh.
9	random$.ti,ab,sh.
10	RANDOMIZED CONTROLLED TRIALS/
11	((single or double or triple or treble) adj (blind$ or mask$)).ti,ab,sh.
12	randomi?ed control$ trial$.tw.
13	or/1-12
14	META ANALYSIS/
15	((meta adj analy$) or metaanalys$ or meta-analy$).ti,ab,sh.
16	(systematic$ adj5 (review$ or overview$)).ti,sh,ab.
17	(methodologic$ adj5 (review$ or overview$)).ti,ab,sh.
18	or/14-17
19	review.pt.
20	(medline or medlars or embase).ab.
21	(scisearch or science citation index).ab.
22	(psychlit or psyclit or psychinfo or psycinfo or cinahl or cochrane).ab.
23	((hand or manual$) adj2 search$).tw.
24	(electronic database$ or bibliographic database$ or computeri?ed database$ or online database$).tw.
25	(pooling or pooled or mantel haenszel).tw.
26	(peto or dersimonian or "der simonian" or fixed effect).tw.
27	or/20-26
28	and/19,27
29	or/18,28
30	(book or conference paper or editorial or letter or note or proceeding or short survey).pt.
31	13 not 30
32	29 not 30
33	or/31-32

34	SPASTICITY/
35	exp MUSCLE SPASM/
36	exp MUSCLE HYPERTONIA/
37	(spastic$ or spasm$).ti,ab.
38	hyperton$.ti,ab.
39	or/34-38
40	exp BRAIN INJURY/
41	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
42	ABI.ti,ab.
43	static encephalopath$.ti,ab.
44	CEREBRAL PALSY/
45	(cerebral adj3 pals$).ti,ab.
46	exp MENINGITIS/
47	(meningitis or meningococcal).ti,ab.
48	exp HEAD INJURY/
49	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
50	exp ENCEPHALITIS/
51	encephaliti$.ti,ab.
52	exp CEREBROVASCULAR DISEASE/
53	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
54	exp HYDROCEPHALUS/
55	hydrocephal$.ti,ab.
56	SHAKEN BABY SYNDROME/
57	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
58	or/40-57
59	and/39,58
60	exp PHYSIOTHERAPY/ or PEDIATRIC PHYSIOTHERAPY/
61	exp REHABILITATION/ or PEDIATRIC REHABILITATION/
62	OCCUPATIONAL THERAPY/
63	((physical or occupational) adj3 therap$).ti,ab.
64	physiotherap$.ti,ab.
65	(rehab$ or habilitat$).ti,ab.
66	exp KINESIOTHERAPY/
67	MOVEMENT THERAPY/
68	MUSCLE TRAINING/
69	RESISTANCE TRAINING/

70	MUSCLE STRENGTH/
71	(musc$ adj3 (strength$ or strong$)).ti,ab.
72	((exercis$ or mov$) adj3 therap$).ti,ab.
73	kinesi?therap$.ti,ab.
74	((resist$ or strength$ or weight$ or agonist$ or circuit) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
75	((function$ or locomot$ or e#centric or concentric or target$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
76	TREADMILL/ or TREADMILL EXERCISE/
77	treadmill$.ti,ab.
78	(multi?gym$ or multi gym$).ti,ab.
79	BICYCLE/
80	(cycle$ or bicycle$ or bike$ or tricycle$ or trike$ or hand cycle$ or hand?cycle$).ti,ab.
81	((rebound or trampolin$) adj3 therap$).ti,ab.
82	(proprioceptive neuromuscular facilitation or PNF).ti,ab.
83	MOTOR PERFORMANCE/
84	(motor adj3 (learn$ or train$ or re learn$ or re?learn$ or perform$)).ti,ab.
85	MRP.ti,ab.
86	((task$ or environment$ or context$ or occupat$ or participat$ or function$ or activit$) adj3 (manipulat$ or approach$ or train$ or therap$)).ti,ab.
87	dynamic system$.ti,ab.
88	DAILY LIFE ACTIVITY/
89	(activ$ adj3 (daily living or daily life)).ti,ab.
90	ADL.ti,ab.
91	NEUROMUSCULAR FACILITATION/
92	(bobath or NDT).ti,ab.
93	((neuro?development$ or neuro development$ or neuromuscular or key point$) adj3 (train$ or treatment$ or therap$ or facilitat$ or approach$ or control$)).ti,ab.
94	system$ approach$.ti,ab.
95	(normal adj2 mov$ adj2 (pattern$ or facilitat$)).ti,ab.
96	(abnormal adj2 mov$ adj2 (inhibit$ or control$)).ti,ab.
97	CONSTRAINT INDUCED THERAPY/
98	(constraint$ adj3 therap$).ti,ab.
99	(CIMT or MCIMT or "forced use").ti,ab.
100	STRETCHING EXERCISE/
101	((activ$ or passiv$ or musc$ or dynamic$ or static$ or isometric$ or relax$ or ballistic$) adj3 (stretch$ or mov$)).ti,ab.
102	PLASTER CAST/
103	((serial or series) adj3 cast$).ti,ab.
104	BODY POSTURE/

105	(postur$ adj3 (care$ or caring or manag$)).ti,ab.
106	SITTING/
107	(functional sitting position$ or FSP).ti,ab.
108	((speciali#ed or adapt$ or solution$ or mo?ld$) adj3 seat$).ti,ab.
109	(knee$ adj3 block$).ti,ab.
110	(sleep$ adj3 system$).ti,ab.
111	(stand$ adj3 (fram$ or practi$)).ti,ab.
112	HYDROTHERAPY/
113	(hydrotherap$ or aquatherap$).ti,ab.
114	((water or swim$ or aquatic) adj3 therap$).ti,ab.
115	FUNCTIONAL ELECTRICAL STIMULATION/
116	(electric$ stimulation adj3 (therap$ or function$ or neuromuscular)).ti,ab.
117	FES.ti,ab.
118	exp HOME CARE/
119	HOME REHABILITATION/ or HOME PHYSIOTHERAPY/
120	(home$ adj3 (activ$ or handl$ or interven$ or therap$ or program$ or care$ or caring)).ti,ab.
121	exp FEEDBACK SYSTEM/
122	(bio feedback$ or bio?feedback$ or feedback$).ti,ab.
123	exp COMPUTER ASSISTED THERAPY/
124	VIRTUAL REALITY/
125	(virtual realit$ or VR).ti,ab.
126	(balance adj3 (train$ or practi$ or exercis$ or game$)).ti,ab.
127	wii fit.ti,ab.
128	(computer$ adj3 (therap$ or game$)).ti,ab.
129	or/60-128
130	and/59,129
131	limit 130 to english language
132	limit 131 to yr="1970 -Current"
133	and/33,132

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CINAHL 1981+

SPAST_Q1_physiotherapy_cinahl_060910

#	Query	Limiters/Expanders
S146	S145	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase
S145	S44 and S144	Search modes - Boolean/Phrase
S144	S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58 or S59 or S60 or S61 or S62 or S63 or S64 or S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73 or S74 or S75 or S76 or S77 or S78 or S79 or S80 or S81 or S82 or S83 or S84 or S85 or S86 or S87 or S88 or S89 or S90 or S91 or S92 or S93 or S94 or S95 or S96 or S97 or S98 or S99 or S100 or S101 or S102 or S103 or S104 or S105 or S106 or S107 or S108 or S109 or S110 or S111 or S112 or S113 or S114 or S115 or S116 or S117 or S118 or S119 or S120 or S121 or S122 or S123 or S124 or S125 or S126 or S127 or S128 or S129 or S130 or S131 or S132 or S133 or S134 or S135 or S136 or S137 or S138 or S139 or S140 or S141 or S142 or S143	Search modes - Boolean/Phrase
S143	AB (computer N3 therap*) or AB (computer N3 game*)	Search modes - Boolean/Phrase
S142	TI (computer N3 therap*) or TI (computer N3 game*)	Search modes - Boolean/Phrase
S141	TI (wii fit) or AB (wii fit)	Search modes - Boolean/Phrase
S140	AB (balance N3 train*) or AB (balance N3 practi*) or AB (balance N3 exercis*) or AB (balance N3 game*)	Search modes - Boolean/Phrase
S139	TI (balance N3 train*) or TI (balance N3 practi*) or TI (balance N3 exercis*) or TI (balance N3 game*)	Search modes - Boolean/Phrase
S138	TI (virtual realit* or VR) or AB (virtual realit* or VR)	Search modes - Boolean/Phrase
S137	MH VIRTUAL REALITY OR MH VIDEO GAMES	Search modes - Boolean/Phrase
S136	MH THERAPY, COMPUTER ASSISTED+	Search modes - Boolean/Phrase
S135	TI (bio-feedback* or biofeedback* or feedback*) or AB (bio-feedback* or biofeedback* or feedback*)	Search modes - Boolean/Phrase
S134	MH BIOFEEDBACK	Search modes - Boolean/Phrase

S133	AB (home* N3 activ*) or AB (home* N3 handl*) or AB (home* N3 interven*) or AB (home* N3 therap*) or AB (home* N3 program*) or AB (home* N3 care*) or AB (home* N3 caring)	Search modes - Boolean/Phrase
S132	TI (home* N3 activ*) or TI (home* N3 handl*) or TI (home* N3 interven*) or TI (home* N3 therap*) or TI (home* N3 program*) or TI (home* N3 care*) or TI (home* N3 caring)	Search modes - Boolean/Phrase
S131	MH HOME REHABILITATION+	Search modes - Boolean/Phrase
S130	TI (FES) or AB (FES)	Search modes - Boolean/Phrase
S129	TI (functional electric* stimulation or electric* stimulation therap* or neuromuscular electric* stimulation) or AB (functional electric* stimulation or electric* stimulation therap* or neuromuscular electric* stimulation)	Search modes - Boolean/Phrase
S128	MH ELECTRIC STIMULATION+	Search modes - Boolean/Phrase
S127	AB (water N3 therap*) or AB (swim* N3 therap*) or AB (aquatic N3 therap*)	Search modes - Boolean/Phrase
S126	TI (water N3 therap*) or TI (swim* N3 therap*) or TI (aquatic N3 therap*)	Search modes - Boolean/Phrase
S125	TI (hydrotherap* or aquatherap*) or AB (hydrotherap* or aquatherap*)	Search modes - Boolean/Phrase
S124	MH HYDROTHERAPY+	Search modes - Boolean/Phrase
S123	AB (stand* N3 fram*) or AB (stand* N3 practi*)	Search modes - Boolean/Phrase
S122	TI (stand* N3 fram*) or TI (stand* N3 practi*)	Search modes - Boolean/Phrase
S121	TI (sleep* N3 system*) or AB (sleep* N3 system*)	Search modes - Boolean/Phrase
S120	TI (knee* N3 block*) or AB (knee* N3 block*)	Search modes - Boolean/Phrase
S119	TI (speciali?ed seat* or adapt* seat* or seat* solution* or mo#ld* seat*) or AB (speciali?ed seat* or adapt* seat* or seat* solution* or mo#ld* seat*)	Search modes - Boolean/Phrase
S118	TI (functional sitting position* or FSP) or AB (functional sitting position* or FSP)	Search modes - Boolean/Phrase
S117	AB (postur* N3 care*) or AB (postur* N3 caring) or AB (postur* N3 manag*)	Search modes - Boolean/Phrase
S116	TI (postur* N3 care*) or TI (postur* N3 caring) or TI (postur* N3 manag*)	Search modes - Boolean/Phrase

S115	MH POSTURE+	Search modes - Boolean/Phrase
S114	AB (serial N3 cast*) or AB (series N3 cast*)	Search modes - Boolean/Phrase
S113	TI (serial N3 cast*) or TI (series N3 cast*)	Search modes - Boolean/Phrase
S112	MH CASTS	Search modes - Boolean/Phrase
S111	AB (activ* N3 mov*) or AB (passiv* N3 mov*) or AB (musc* N3 mov*) or AB (dynamic* N3 mov*) or AB (static* N3 mov*) or AB (isometric* N3 mov*) or AB (relax* N3 mov*) or AB (ballistic* N3 mov*)	Search modes - Boolean/Phrase
S110	TI (activ* N3 mov*) or TI (passiv* N3 mov*) or TI (musc* N3 mov*) or TI (dynamic* N3 mov*) or TI (static* N3 mov*) or TI (isometric* N3 mov*) or TI (relax* N3 mov*) or TI (ballistic* N3 mov*)	Search modes - Boolean/Phrase
S109	AB (activ* N3 stretch*) or AB (passiv* N3 stretch*) or AB (musc* N3 stretch*) or AB (dynamic* N3 stretch*) or AB (static* N3 stretch*) or AB (isometric* N3 stretch*) or AB (relax* N3 stretch*) or AB (ballistic* N3 stretch*)	Search modes - Boolean/Phrase
S108	TI (activ* N3 stretch*) or TI (passiv* N3 stretch*) or TI (musc* N3 stretch*) or TI (dynamic* N3 stretch*) or TI (static* N3 stretch*) or TI (isometric* N3 stretch*) or TI (relax* N3 stretch*) or TI (ballistic* N3 stretch*)	Search modes - Boolean/Phrase
S107	MH STRETCHING	Search modes - Boolean/Phrase
S106	TI (CIMT or MCIMT or "forced use") or AB (CIMT or MCIMT or "forced use")	Search modes - Boolean/Phrase
S105	TI (constraint* N3 therap*) or AB (constraint* N3 therap*)	Search modes - Boolean/Phrase
S104	MH CONSTRAINT-INDUCED THERAPY	Search modes - Boolean/Phrase
S103	TI (normal movement* or abnormal movement*) or AB (normal movement* or abnormal movement*)	Search modes - Boolean/Phrase
S102	TI (system* approach*) or AB (system* approach*)	Search modes - Boolean/Phrase
S101	AB (key point N3 treatment*) or AB (key point N3 train*) or AB (key point N3 facilitat*) or AB (key point N3 therap*)	Search modes - Boolean/Phrase
S100	TI (key point N3 treatment*) or TI (key point N3 train*) or TI (key point N3 facilitat*) or TI (key point N3 therap*)	Search modes - Boolean/Phrase
S99	AB (neuromuscular N3 treatment*) or AB (neuromuscular N3 train*) or AB (neuromuscular N3 facilitat*) or AB (neuromuscular N3 therap*)	Search modes - Boolean/Phrase

S98	TI (neuromuscular N3 treatment*) or TI (neuromuscular N3 train*) or TI (neuromuscular N3 facilitat*) or TI (neuromuscular N3 therap*)	Search modes - Boolean/Phrase
S97	AB (neurodevelopment* N3 treatment*) or AB (neurodevelopment* N3 train*) or AB (neurodevelopment* N3 facilitat*) or AB (neurodevelopment* N3 therap*)	Search modes - Boolean/Phrase
S96	TI (neurodevelopment* N3 treatment*) or TI (neurodevelopment* N3 train*) or TI (neurodevelopment* N3 facilitat*) or TI (neurodevelopment* N3 therap*)	Search modes - Boolean/Phrase
S95	TI (bobath or NDT) or AB (bobath or NDT)	Search modes - Boolean/Phrase
S94	MH NEUROMUSCULAR FACILITATION	Search modes - Boolean/Phrase
S93	TI (ADL) or AB (ADL)	Search modes - Boolean/Phrase
S92	AB (activit* N3 daily living) or AB (activit* N3 daily life)	Search modes - Boolean/Phrase
S91	TI (activit* N3 daily living) or TI (activit* N3 daily life)	Search modes - Boolean/Phrase
S90	MH ACTIVITIES OF DAILY LIVING+	Search modes - Boolean/Phrase
S89	TI (dynamic system*) or AB (dynamic system*)	Search modes - Boolean/Phrase
S88	AB (task* N3 therap*) or AB (environment* N3 therap*) or AB (context* N3 therap*) or AB (participat* N3 therap*) or AB (function* N3 therap*) or AB (activit* N3 therap*)	Search modes - Boolean/Phrase
S87	TI (task* N3 therap*) or TI (environment* N3 therap*) or TI (context* N3 therap*) or TI (participat* N3 therap*) or TI (function* N3 therap*) or TI (activit* N3 therap*)	Search modes - Boolean/Phrase
S86	AB (task* N3 approach*) or AB (environment* N3 approach*) or AB (context* N3 approach*) or AB (participat* N3 approach*) or AB (function* N3 approach*) or AB (activit* N3 approach*)	Search modes - Boolean/Phrase
S85	TI (task* N3 approach*) or TI (environment* N3 approach*) or TI (context* N3 approach*) or TI (participat* N3 approach*) or TI (function* N3 approach*) or TI (activit* N3 approach*)	Search modes - Boolean/Phrase
S84	TI (MRP) or AB (MRP)	Search modes - Boolean/Phrase
S83	AB (motor N3 learn*) or AB (motor N3 train*) or AB (motor N3 re-learn*) or AB (motor N3 relearn*) or AB (motor N3 perform*)	Search modes - Boolean/Phrase
S82	TI (motor N3 learn*) or TI (motor N3 train*) or TI (motor N3	Search modes -

	re-learn*) or TI (motor N3 relearn*) or TI (motor N3 perform*)	Boolean/Phrase
S81	MH MOTOR SKILLS	Search modes - Boolean/Phrase
S80	MH PSYCHOMOTOR PERFORMANCE+	Search modes - Boolean/Phrase
S79	TI (proprioceptive neuromuscular facilitation or PNF) or AB (proprioceptive neuromuscular facilitation or PNF)	Search modes - Boolean/Phrase
S78	AB (rebound N3 therap8) or AB (trampolin* N3 therap*)	Search modes - Boolean/Phrase
S77	TI (rebound N3 therap8) or TI (trampolin* N3 therap*)	Search modes - Boolean/Phrase
S76	TI (cycle* or bicycle* or bike* or tricycle* or trike* or hand-cycle* or handcycle*) or AB (cycle* or bicycle* or bike* or tricycle* or trike* or hand-cycle* or handcycle*)	Search modes - Boolean/Phrase
S75	MH BICYCLES	Search modes - Boolean/Phrase
S74	TI (multi-gym* or multigym*) or AB (multi-gym* or multigym*)	Search modes - Boolean/Phrase
S73	TI (treadmill*) or AB (treadmill*)	Search modes - Boolean/Phrase
S72	MH TREADMILLS	Search modes - Boolean/Phrase
S71	TI (locomot* N3 musc*) or AB (locomot* N3 musc*)	Search modes - Boolean/Phrase
S70	TI (function* N3 musc*) or AB (function* N3 musc*)	Search modes - Boolean/Phrase
S69	TI (weight* N3 bear*) or AB (weight N3 bear*)	Search modes - Boolean/Phrase
S68	AB (function* N3 exercis*) or AB (locomot* N3 exercis*) or AB (e?centric* N3 exercis*) or AB (concentric* N3 exercis*) or AB (target* N3 exercis*)	Search modes - Boolean/Phrase
S67	TI (function* N3 exercis*) or TI (locomot* N3 exercis*) or TI (e?centric* N3 exercis*) or TI (concentric* N3 exercis*) or TI (target* N3 exercis*)	Search modes - Boolean/Phrase
S66	AB (resist* N3 exercis*) or AB (strength* N3 exercis*) or AB (weight* N3 exercis*) or AB (agonist* N3 exercis*) or AB (circuit* N3 exercis*)	Search modes - Boolean/Phrase
S65	TI (resist* N3 exercis*) or TI (strength* N3 exercis*) or TI (weight* N3 exercis*) or TI (agonist* N3 exercis*) or TI (circuit* N3 exercis*)	Search modes - Boolean/Phrase
S64	AB (function* N3 train*) or AB (locomot* N3 train*) or AB	Search modes -

	(e?centric* N3 train*) or AB (concentric* N3 train*) or AB (target* N3 train*)	Boolean/Phrase
S63	TI (function* N3 train*) or TI (locomot* N3 train*) or TI (e?centric* N3 train*) or TI (concentric* N3 train*) or TI (target* N3 train*)	Search modes - Boolean/Phrase
S62	AB (resist* N3 train*) or AB (strength* N3 train*) or AB (weight* N3 train*) or AB (agonist* N3 train*) or AB (circuit* N3 train*)	Search modes - Boolean/Phrase
S61	TI (resist* N3 train*) or TI (strength* N3 train*) or TI (weight* N3 train*) or TI (agonist* N3 train*) or TI (circuit* N3 train*)	Search modes - Boolean/Phrase
S60	TI (kinesi#therap*) or AB (kinesi#therap*)	Search modes - Boolean/Phrase
S59	AB (exercis* N3 therap*) or AB (mov* N3 therap*)	Search modes - Boolean/Phrase
S58	TI (exercis* N3 therap*) or TI (mov* N3 therap*)	Search modes - Boolean/Phrase
S57	TI (musc* N3 str?ng*) or AB (musc* N3 str?ng*)	Search modes - Boolean/Phrase
S56	MH MUSCLE STRENGTH+	Search modes - Boolean/Phrase
S55	MH UPPER EXTREMITY EXERCISES+	Search modes - Boolean/Phrase
S54	MH MUSCLE STRENGTHENING+	Search modes - Boolean/Phrase
S53	MH AEROBIC EXERCISES+	Search modes - Boolean/Phrase
S52	MH THERAPEUTIC EXERCISE+	Search modes - Boolean/Phrase
S51	TI (rehab* or habilitat*) or AB (rehab* or habilitat*)	Search modes - Boolean/Phrase
S50	TI (physiotherap*) or AB (physiotherap*)	Search modes - Boolean/Phrase
S49	AB (physical N3 therap*) or AB (occupational N3 therap*)	Search modes - Boolean/Phrase
S48	TI (physical N3 therap*) or TI (occupational N3 therap*)	Search modes - Boolean/Phrase
S47	MH REHABILITATION+	Search modes - Boolean/Phrase
S46	MH OCCUPATIONAL THERAPY+	Search modes - Boolean/Phrase
S45	MH PHYSICAL THERAPY+	Search modes -

		Boolean/Phrase
S44	S6 and S43	Search modes - Boolean/Phrase
S43	S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17 or S18 or S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32 or S33 or S34 or S35 or S36 or S37 or S38 or S39 or S40 or S41 or S42	Search modes - Boolean/Phrase
S42	AB (shak* N3 injur*) or AB (shak* N3 syndrome*)	Search modes - Boolean/Phrase
S41	TI (shak* N3 injur*) or TI (shak* N3 syndrome*)	Search modes - Boolean/Phrase
S40	MH SHAKEN BABY SYNDROME	Search modes - Boolean/Phrase
S39	TI (hydrocephal*) or AB (hydrocephal*)	Search modes - Boolean/Phrase
S38	MH HYDROCEPHALUS+	Search modes - Boolean/Phrase
S37	AB (cerebrovascular N2 disorder*) or AB (cerebrovascular N2 disease*) or AB (cerebrovascular N2 insufficien*) or AB (cerebrovascular N2 occlusion*) or AB (cerebrovascular N2 damage*) or AB (cerebrovascular N2 disturb*) or AB (cerebrovascular N2 insult*)	Search modes - Boolean/Phrase
S36	TI (cerebrovascular N2 disorder*) or TI (cerebrovascular N2 disease*) or TI (cerebrovascular N2 insufficien*) or TI (cerebrovascular N2 occlusion*) or TI (cerebrovascular N2 damage*) or TI (cerebrovascular N2 disturb*) or TI (cerebrovascular N2 insult*)	Search modes - Boolean/Phrase
S35	AB (intracranial vascular N2 disorder*) or AB (intracranial vascular N2 disease*) or AB (intracranial vascular N2 insufficien*) or AB (intracranial vascular N2 oclusion*) or AB (intracranial vascular N2 damage*) or AB (intracranial vascular N2 disturb*) or AB (intracranial vascular N2 insult*)	Search modes - Boolean/Phrase
S34	TI (intracranial vascular N2 disorder*) or TI (intracranial vascular N2 disease*) or TI (intracranial vascular N2 insufficien*) or TI (intracranial vascular N2 oclusion*) or TI (intracranial vascular N2 damage*) or TI (intracranial vascular N2 disturb*) or TI (intracranial vascular N2 insult*)	Search modes - Boolean/Phrase
S33	AB (intra-cranial vascular N2 disorder*) or AB (intra-cranial vascular N2 disease*) or AB (intra-cranial vascular N2 insufficien*) or AB (intra-cranial vascular N2 occlusion*) or AB (intra-cranial vascular N2 damage*) or AB (intra-cranial vascular N2 disturb*) or AB (intra-cranial vascular N2 insult*)	Search modes - Boolean/Phrase

S32	TI (intra-cranial vascular N2 disorder*) or TI (intra-cranial vascular N2 disease*) or TI (intra-cranial vascular N2 insufficien*) or TI (intra-cranial vascular N2 occlusion*) or TI (intra-cranial vascular N2 damage*) or TI (intra-cranial vascular N2 disturb*) or TI (intra-cranial vascular N2 insult*)	Search modes - Boolean/Phrase
S31	AB (brain vascular N2 disorder*) or AB (brain vascular N2 disease*) or AB (brain vascular N2 insufficien*) or AB (brain vascular N2 occlusion*) or AB (brain vascular N2 damage*) or AB (brain vascular N2 disturb*) or AB (brain vascular N2 insult*)	Search modes - Boolean/Phrase
S30	TI (brain vascular N2 disorder*) or TI (brain vascular N2 disease*) or TI (brain vascular N2 insufficien*) or TI (brain vascular N2 occlusion*) or TI (brain vascular N2 damage*) or TI (brain vascular N2 disturb*) or TI (brain vascular N2 insult*)	Search modes - Boolean/Phrase
S29	MH CEREBROVASCULAR DISORDERS+	Search modes - Boolean/Phrase
S28	TI (encephaliti*) or AB (encephaliti*)	Search modes - Boolean/Phrase
S27	MH ENCEPHALITIS+	Search modes - Boolean/Phrase
S26	AB (craniocerebral N3 injur*) or AB (craniocerebral N3 trauma*) or AB (craniocerebral N3 damage*) or AB (craniocerebral N3 disturb*) or AB (craniocerebral N3 insult*)	Search modes - Boolean/Phrase
S25	TI (craniocerebral N3 injur*) or TI (craniocerebral N3 trauma*) or TI (craniocerebral N3 damage*) or TI (craniocerebral N3 disturb*) or TI (craniocerebral N3 insult*)	Search modes - Boolean/Phrase
S24	AB (cerebral N3 injur*) or AB (cerebral N3 trauma*) or AB (cerebral N3 damage*) or AB (cerebral N3 disturb*) or AB (cerebral N3 insult*)	Search modes - Boolean/Phrase
S23	TI (cerebral N3 injur*) or TI (cerebral N3 trauma*) or TI (cerebral N3 damage*) or TI (cerebral N3 disturb*) or TI (cerebral N3 insult*)	Search modes - Boolean/Phrase
S22	AB (skull N3 injur*) or AB (skull N3 trauma*) or AB (skull N3 damage*) or AB (skull N3 disturb*) or AB (skull N3 insult*)	Search modes - Boolean/Phrase
S21	TI (skull N3 injur*) or TI (skull N3 trauma*) or TI (skull N3 damage*) or TI (skull N3 disturb*) or TI (skull N3 insult*)	Search modes - Boolean/Phrase
S20	AB (brain N3 injur*) or AB (brain N3 trauma*) or AB (brain N3 damage*) or AB (brain N3 disturb*) or AB (brain N3 insult*)	Search modes - Boolean/Phrase
S19	TI (brain N3 injur*) or TI (brain N3 trauma*) or TI (brain N3 damage*) or TI (brain N3 disturb*) or TI (brain N3 insult*)	Search modes - Boolean/Phrase
S18	AB (head N3 injur*) or AB (head N3 trauma*) or AB (head	Search modes -

	N3 damage*) or AB (head N3 disturb*) or AB (head N3 insult*)	Boolean/Phrase
S17	TI (head N3 injur*) or TI (head N3 trauma*) or TI (head N3 damage*) or TI (head N3 disturb*) or TI (head N3 insult*)	Search modes - Boolean/Phrase
S16	MH HEAD INJURIES+	Search modes - Boolean/Phrase
S15	TI (meningitis or meningococcal) or AB (meningitis or meningococcal)	Search modes - Boolean/Phrase
S14	MH MENINGITIS+	Search modes - Boolean/Phrase
S13	TI (cerebral N3 pals*) or AB (cerebral N3 pals*)	Search modes - Boolean/Phrase
S12	MH CEREBRAL PALSY	Search modes - Boolean/Phrase
S11	TI (static encephalopath*) or AB (static encephalopath*)	Search modes - Boolean/Phrase
S10	TI (ABI) or AB (ABI)	Search modes - Boolean/Phrase
S9	AB (non-progressive N2 brain injur*) or AB (nonprogressive N2 brain injur*) or AB (acquired N2 brain injur*)	Search modes - Boolean/Phrase
S8	TI (non-progressive N2 brain injur*) or TI (nonprogressive N2 brain injur*) or TI (acquired N2 brain injur*)	Search modes - Boolean/Phrase
S7	MH BRAIN INJURIES+	Search modes - Boolean/Phrase
S6	S1 or S2 or S3 or S4 or S5	Search modes - Boolean/Phrase
S5	TI (hyperton*) or AB (hyperton*)	Search modes - Boolean/Phrase
S4	TI (spastic* or spasm*) or AB (spastic* or spasm*)	Search modes - Boolean/Phrase
S3	MH MUSCLE HYPERTONIA+	Search modes - Boolean/Phrase
S2	MH SPASM+	Search modes - Boolean/Phrase
S1	MH MUSCLE SPASTICITY	Search modes - Boolean/Phrase

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PsycINFO 1967+

SPAST_Q1_physio_psycinfo_060910

#	Searches
1	exp SPASMS/
2	MUSCLE SPASMS/
3	(spastic$ or spasm$).ti,ab,id.
4	hyperton$.ti,ab,id.
5	or/1-4
6	exp TRAUMATIC BRAIN INJURY/
7	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab,id.
8	ABI.ti,ab,id.
9	static encephalopath$.ti,ab,id.
10	CEREBRAL PALSY/
11	(cerebral adj3 pals$).ti,ab,id.
12	exp MENINGITIS/
13	(meningitis or meningococcal).ti,ab,id.
14	exp HEAD INJURIES/
15	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab,id.
16	exp ENCEPHALITIS/
17	encephaliti$.ti,ab,id.
18	exp CEREBROVASCULAR DISORDERS/
19	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab,id.
20	HYDROCEPHALUS/
21	hydrocephal$.ti,ab,id.
22	(shak$ adj3 (injur$ or syndrome$)).ti,ab,id.
23	or/6-22
24	and/5,23
25	PHYSICAL THERAPY/
26	NEUROREHABILITATION/
27	OCCUPATIONAL THERAPY/
28	((physical or occupational) adj3 therap$).ti,ab,id.
29	physiotherap$.ti,ab,id.
30	(rehab$ or habilitat$).ti,ab,id.
31	exp EXERCISE/ or MOVEMENT THERAPY/
32	MUSCLE TONE/ or PHYSICAL STRENGTH/

33	(musc$ adj3 (strength$ or strong$)).ti,ab,id.
34	((exercis$ or mov$) adj3 therap$).ti,ab,id.
35	kinesi?therap$.ti,ab,id.
36	((resist$ or strength$ or weight$ or agonist$ or circuit$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab,id.
37	((function$ or locomot$ or e#centric or concentric or target$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab,id.
38	treadmill$.ti,ab,id.
39	(multi?gym$ or multi gym$).ti,ab,id.
40	(cycle$ or bicycle$ or bike$ or tricycle$ or trike$ or hand cycle$ or hand?cycle$).ti,ab,id.
41	((rebound or trampolin$) adj3 therap$).ti,ab,id.
42	(proprioceptive neuromuscular facilitation or PNF).ti,ab,id.
43	PERCEPTUAL MOTOR LEARNING/ or MOTOR SKILLS/
44	(motor adj3 (learn$ or train$ or re learn$ or re?learn$ or perform$)).ti,ab,id.
45	MRP.ti,ab,id.
46	((task$ or environment$ or context$ or occupat$ or participat$ or function$ or activit$) adj3 (manipulat$ or approach$ or train$ or therap$)).ti,ab,id.
47	dynamic system$.ti,ab,id.
48	ACTIVITIES OF DAILY LIVING/
49	(activ$ adj3 (daily living or daily life)).ti,ab,id.
50	ADL.ti,ab,id.
51	exp NEUROPSYCHOLOGICAL REHABILITATION/
52	(bobath or NDT).ti,ab,id.
53	((neuro?development$ or neuro development$ or neuromuscular or key point$) adj3 (train$ or treatment$ or therap$ or facilitat$ or approach$ or control$)).ti,ab,id.
54	system$ approach$.ti,ab,id.
55	(normal adj2 mov$ adj2 (pattern$ or facilitat$)).ti,ab,id.
56	(abnormal adj2 mov$ adj2 (inhibit$ or control$)).ti,ab,id.
57	PHYSICAL RESTRAINT/
58	(constraint$ adj3 therap$).ti,ab,id.
59	(CIMT or MCIMT or "forced use").ti,ab,id.
60	((activ$ or passiv$ or musc$ or dynamic$ or static$ or isometric$ or relax$ or ballistic$) adj3 (stretch$ or mov$)).ti,ab,id.
61	((serial or series) adj3 cast$).ti,ab,id.
62	(postur$ adj3 (care$ or caring or manag$)).ti,ab,id.
63	(functional sitting position$ or FSP).ti,ab,id.
64	((speciali#ed or adapt$ or solution$ or mo?ld$) adj3 seat$).ti,ab,id.
65	(knee$ adj3 block$).ti,ab,id.
66	(sleep$ adj3 system$).ti,ab,id.
67	(stand$ adj3 (fram$ or practi$)).ti,ab,id.

68	(hydrotherap$ or aquatherap$).ti,ab,id.
69	((water or swim$ or aquatic) adj3 therap$).ti,ab,id.
70	exp ELECTRICAL STIMULATION/
71	(electric$ stimulation adj3 (therap$ or function$ or neuromuscular)).ti,ab,id.
72	FES.ti,ab,id.
73	HOME CARE/
74	(home$ adj3 (activ$ or handl$ or interven$ or therap$ or program$ or care$ or caring)).ti,ab,id.
75	exp BIOFEEDBACK/ or BIOFEEDBACK TRAINING/
76	(bio feedback$ or bio?feedback$ or feedback$).ti,ab,id.
77	COMPUTER ASSISTED THERAPY/
78	(virtual realit$ or VR).ti,ab,id.
79	(balance adj3 (train$ or practi$ or exercis$ or game$)).ti,ab,id.
80	wii fit.ti,ab,id.
81	(computer$ adj3 (therap$ or game$)).ti,ab,id.
82	or/25-81
83	and/24,82
84	limit 83 to yr="1970 -Current"

AMED (Allied and Complementary Medicine) 1985+

SPAST_Q1_physio_amed_060910

#	Searches
1	MUSCLE SPASTICITY/
2	SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab,et.
5	hyperton$.ti,ab,et.
6	or/1-5
7	exp BRAIN INJURIES/
8	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab,et.
9	ABI.ti,ab,et.
10	static encephalopath$.ti,ab,et.
11	CEREBRAL PALSY/
12	(cerebral adj3 pals$).ti,ab,et.
13	exp MENINGITIS/
14	(meningitis or meningococcal).ti,ab,et.
15	exp HEAD INJURIES/
16	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab,et.
17	exp ENCEPHALITIS/
18	encephaliti$.ti,ab,et.
19	exp CEREBROVASCULAR DISORDERS/
20	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab,et.
21	HYDROCEPHALUS/
22	hydrocephal$.ti,ab,et.
23	(shak$ adj3 (injur$ or syndrome$)).ti,ab,et.
24	or/7-23
25	and/6,24
26	PHYSIOTHERAPY/ or exp PHYSICAL THERAPY MODALITIES/
27	REHABILITATION/ or exp REHABILITATION MODALITIES/
28	OCCUPATIONAL THERAPY/ or exp OCCUPATIONAL THERAPY MODALITIES/
29	((physical or occupational) adj3 therap$).ti,ab,et.
30	physiotherap$.ti,ab,et.
31	(rehab$ or habilitat$).ti,ab,et.
32	exp EXERCISE THERAPY/

33	exp MUSCLE STRENGTH/
34	(musc$ adj3 (strength$ or strong$)).ti,ab,et.
35	((exercis$ or mov$) adj3 therap$).ti,ab,et.
36	kinesi?therap$.ti,ab,et.
37	((resist$ or strength$ or weight$ or agonist$ or circuit$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab,et.
38	((function$ or locomot$ or e#centric or concentric or target$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab,et.
39	treadmill$.ti,ab,et.
40	(multi?gym$ or multi gym$).ti,ab,et.
41	(cycle$ or bicycle$ or bike$ or tricycle$ or trike$ or hand cycle$ or hand?cycle$).ti,ab,et.
42	((rebound or trampolin$) adj3 therap$).ti,ab,et.
43	(proprioceptive neuromuscular facilitation or PNF).ti,ab,et.
44	exp PSYCHOMOTOR PERFORMANCE/
45	(motor adj3 (learn$ or train$ or re learn$ or re?learn$ or perform$)).ti,ab,et.
46	MRP.ti,ab,et.
47	((task$ or environment$ or context$ or occupat$ or participat$ or function$ or activit$) adj3 (manipulat$ or approach$ or train$ or therap$)).ti,ab,et.
48	dynamic system$.ti,ab,et.
49	ACTIVITIES OF DAILY LIVING/
50	(activ$ adj3 (daily living or daily life)).ti,ab,et.
51	ADL.ti,ab,et.
52	NEURODEVELOPMENTAL THERAPY/
53	(bobath or NDT).ti,ab,et.
54	((neuro?development$ or neuro development$ or neuromuscular or key point$) adj3 (train$ or treatment$ or therap$ or facilitat$ or approach$ or control$)).ti,ab,et.
55	system$ approach$.ti,ab,et.
56	(normal adj2 mov$ adj2 (pattern$ or facilitat$)).ti,ab,et.
57	(abnormal adj2 mov$ adj2 (inhibit$ or control$)).ti,ab,et.
58	RESTRAINT PHYSICAL/ or exp IMMOBILIZATION/
59	(constraint$ adj3 therap$).ti,ab,et.
60	(CIMT or MCIMT or "forced use").ti,ab,et.
61	((activ$ or passiv$ or musc$ or dynamic$ or static$ or isometric$ or relax$ or ballistic$) adj3 (stretch$ or mov$)).ti,ab,et.
62	CASTING/
63	((serial or series) adj3 cast$).ti,ab,et.
64	exp POSTURE/
65	(postur$ adj3 (care$ or caring or manag$)).ti,ab,et.
66	SEATING/
67	(functional sitting position$ or FSP).ti,ab,et.

68	((speciali#ed or adapt$ or solution$ or mo?ld$) adj3 seat$).ti,ab,et.
69	(knee$ adj3 block$).ti,ab,et.
70	(sleep$ adj3 system$).ti,ab,et.
71	(stand$ adj3 (fram$ or practi$)).ti,ab,et.
72	exp HYDROTHERAPY/
73	(hydrotherap$ or aquatherap$).ti,ab,et.
74	((water or swim$ or aquatic) adj3 therap$).ti,ab,et.
75	exp ELECTROTHERAPY/
76	(electric$ stimulation adj3 (therap$ or function$ or neuromuscular)).ti,ab,et.
77	FES.ti,ab,et.
78	HOME CARE/
79	(home$ adj3 (activ$ or handl$ or interven$ or therap$ or program$ or care$ or caring)).ti,ab,et.
80	BIOFEEDBACK/
81	(bio feedback$ or bio?feedback$ or feedback$).ti,ab,et.
82	VIRTUAL REALITY/
83	(virtual realit$ or VR).ti,ab,et.
84	(balance adj3 (train$ or practi$ or exercis$ or game$)).ti,ab,et.
85	wii fit.ti,ab,et.
86	(computer$ adj3 (therap$ or game$)).ti,ab,et.
87	or/26-86
88	and/25,87

Question 1 Health economics searches

Ovid MEDLINE(R) 1950+

SPAST_Q1_physio_economic_medline_070910

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	MUSCLE SPASTICITY/
9	exp SPASM/

10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	or/8-12
14	exp BRAIN INJURIES/
15	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
16	ABI.ti,ab.
17	static encephalopath$.ti,ab.
18	CEREBRAL PALSY/
19	(cerebral adj3 pals$).ti,ab.
20	exp MENINGITIS/
21	(meningitis or meningococcal).ti,ab.
22	exp CRANIOCEREBRAL TRAUMA/
23	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
24	exp ENCEPHALITIS/
25	encephaliti$.ti,ab.
26	exp CEREBROVASCULAR DISORDERS/
27	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
28	exp HYDROCEPHALUS/
29	hydrocephal$.ti,ab.
30	SHAKEN BABY SYNDROME/
31	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
32	or/14-31
33	and/13,32
34	exp PHYSICAL THERAPY MODALITIES/
35	exp REHABILITATION/
36	OCCUPATIONAL THERAPY/
37	((physical or occupational) adj3 therap$).ti,ab.
38	physiotherap$.ti,ab.
39	(rehab$ or habilitat$).ti,ab.
40	exp EXERCISE THERAPY/
41	exp EXERCISE MOVEMENT TECHNIQUES/
42	RESISTANCE TRAINING/
43	exp MUSCLE STRENGTH/
44	(musc$ adj3 (strength$ or strong$)).ti,ab.
45	((exercis$ or mov$) adj3 therap$).ti,ab.

46	kinesi?therap$.ti,ab.
47	((resist$ or strength$ or weight$ or agonist$ or circuit$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
48	((function$ or locomot$ or e#centric or concentric or target$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
49	treadmill$.ti,ab.
50	(multi?gym$ or multi gym$).ti,ab.
51	(cycle$ or bicycle$ or bike$ or tricycle$ or trike$ or hand cycle$ or hand?cycle$).ti,ab.
52	((rebound or trampolin$) adj3 therap$).ti,ab.
53	(proprioceptive neuromuscular facilitation or PNF).ti,ab.
54	(motor adj3 (learn$ or train$ or re learn$ or re?learn$ or perform$)).ti,ab.
55	MRP.ti,ab.
56	((task$ or environment$ or context$ or occupat$ or participat$ or function$ or activit$) adj3 (manipulat$ or approach$ or train$ or therap$)).ti,ab.
57	dynamic system$.ti,ab.
58	ACTIVITIES OF DAILY LIVING/
59	(activ$ adj3 (daily living or daily life)).ti,ab.
60	ADL.ti,ab.
61	(bobath or NDT).ti,ab.
62	((neuro?development$ or neuro development$ or neuromuscular or key point$) adj3 (train$ or treatment$ or therap$ or facilitat$ or approach$ or control$)).ti,ab.
63	system$ approach$.ti,ab.
64	(normal adj2 mov$ adj2 (pattern$ or facilitat$)).ti,ab.
65	(abnormal adj2 mov$ adj2 (inhibit$ or control$)).ti,ab.
66	RESTRAINT, PHYSICAL/
67	(constraint$ adj3 therap$).ti,ab.
68	(CIMT or MCIMT or "forced use").ti,ab.
69	MUSCLE STRETCHING EXERCISES/
70	((activ$ or passiv$ or musc$ or dynamic$ or static$ or isometric$ or relax$ or ballistic$) adj3 (stretch$ or mov$)).ti,ab.
71	CASTS, SURGICAL/
72	((serial or series) adj3 cast$).ti,ab.
73	exp POSTURE/
74	(postur$ adj3 (care$ or caring or manag$)).ti,ab.
75	(functional sitting position$ or FSP).ti,ab.
76	((speciali#ed or adapt$ or solution$ or mo?ld$) adj3 seat$).ti,ab.
77	(knee$ adj3 block$).ti,ab.
78	(sleep$ adj3 system$).ti,ab.
79	(stand$ adj3 (fram$ or practi$)).ti,ab.
80	HYDROTHERAPY/

81	(hydrotherap$ or aquatherap$).ti,ab.
82	((water or swim$ or aquatic) adj3 therap$).ti,ab.
83	exp ELECTRIC STIMULATION THERAPY/
84	(electric$ stimulation adj3 (therap$ or function$ or neuromuscular)).ti,ab.
85	FES.ti,ab.
86	(home$ adj3 (activ$ or handl$ or interven$ or therap$ or program$ or care$ or caring)).ti,ab.
87	BIOFEEDBACK, PSYCHOLOGY/
88	(bio feedback$ or bio?feedback$ or feedback$).ti,ab.
89	THERAPY, COMPUTER-ASSISTED/
90	(virtual realit$ or VR).ti,ab.
91	(balance adj3 (train$ or practi$ or exercis$ or game$)).ti,ab.
92	wii fit.ti,ab.
93	(computer$ adj3 (therap$ or game$)).ti,ab.
94	or/34-93
95	and/33,94
96	limit 95 to english language
97	limit 96 to animals
98	limit 96 to (animals and humans)
99	97 not 98
100	96 not 99
101	limit 100 to yr="1970 -Current"
102	and/7,101

EBM Reviews - Cochrane Central Register of Controlled Trials

SPAST_Q1_physio_economic_cctr_070910

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	MUSCLE SPASTICITY/
9	exp SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	or/8-12
14	exp BRAIN INJURIES/
15	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
16	ABI.ti,ab.
17	static encephalopath$.ti,ab.
18	CEREBRAL PALSY/
19	(cerebral adj3 pals$).ti,ab.
20	exp MENINGITIS/
21	(meningitis or meningococcal).ti,ab.
22	exp CRANIOCEREBRAL TRAUMA/
23	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
24	exp ENCEPHALITIS/
25	encephaliti$.ti,ab.
26	exp CEREBROVASCULAR DISORDERS/
27	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
28	exp HYDROCEPHALUS/
29	hydrocephal$.ti,ab.
30	SHAKEN BABY SYNDROME/
31	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
32	or/14-31

33	and/13,32
34	exp PHYSICAL THERAPY MODALITIES/
35	exp REHABILITATION/
36	OCCUPATIONAL THERAPY/
37	((physical or occupational) adj3 therap$).ti,ab.
38	physiotherap$.ti,ab.
39	(rehab$ or habilitat$).ti,ab.
40	exp EXERCISE THERAPY/
41	exp EXERCISE MOVEMENT TECHNIQUES/
42	RESISTANCE TRAINING/
43	exp MUSCLE STRENGTH/
44	(musc$ adj3 (strength$ or strong$)).ti,ab.
45	((exercis$ or mov$) adj3 therap$).ti,ab.
46	kinesi?therap$.ti,ab.
47	((resist$ or strength$ or weight$ or agonist$ or circuit$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
48	((function$ or locomot$ or e#centric or concentric or target$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
49	treadmill$.ti,ab.
50	(multi?gym$ or multi gym$).ti,ab.
51	(cycle$ or bicycle$ or bike$ or tricycle$ or trike$ or hand cycle$ or hand?cycle$).ti,ab.
52	((rebound or trampolin$) adj3 therap$).ti,ab.
53	(proprioceptive neuromuscular facilitation or PNF).ti,ab.
54	(motor adj3 (learn$ or train$ or re learn$ or re?learn$ or perform$)).ti,ab.
55	MRP.ti,ab.
56	((task$ or environment$ or context$ or occupat$ or participat$ or function$ or activit$) adj3 (manipulat$ or approach$ or train$ or therap$)).ti,ab.
57	dynamic system$.ti,ab.
58	ACTIVITIES OF DAILY LIVING/
59	(activ$ adj3 (daily living or daily life)).ti,ab.
60	ADL.ti,ab.
61	(bobath or NDT).ti,ab.
62	((neuro?development$ or neuro development$ or neuromuscular or key point$) adj3 (train$ or treatment$ or therap$ or facilitat$ or approach$ or control$)).ti,ab.
63	system$ approach$.ti,ab.
64	(normal adj2 mov$ adj2 (pattern$ or facilitat$)).ti,ab.
65	(abnormal adj2 mov$ adj2 (inhibit$ or control$)).ti,ab.
66	RESTRAINT, PHYSICAL/
67	(constraint$ adj3 therap$).ti,ab.
68	(CIMT or MCIMT or "forced use").ti,ab.

69	MUSCLE STRETCHING EXERCISES/
70	((activ$ or passiv$ or musc$ or dynamic$ or static$ or isometric$ or relax$ or ballistic$) adj3 (stretch$ or mov$)).ti,ab.
71	CASTS, SURGICAL/
72	((serial or series) adj3 cast$).ti,ab.
73	exp POSTURE/
74	(postur$ adj3 (care$ or caring or manag$)).ti,ab.
75	(functional sitting position$ or FSP).ti,ab.
76	((speciali#ed or adapt$ or solution$ or mo?ld$) adj3 seat$).ti,ab.
77	(knee$ adj3 block$).ti,ab.
78	(sleep$ adj3 system$).ti,ab.
79	(stand$ adj3 (fram$ or practi$)).ti,ab.
80	HYDROTHERAPY/
81	(hydrotherap$ or aquatherap$).ti,ab.
82	((water or swim$ or aquatic) adj3 therap$).ti,ab.
83	exp ELECTRIC STIMULATION THERAPY/
84	(electric$ stimulation adj3 (therap$ or function$ or neuromuscular)).ti,ab.
85	FES.ti,ab.
86	(home$ adj3 (activ$ or handl$ or interven$ or therap$ or program$ or care$ or caring)).ti,ab.
87	BIOFEEDBACK, PSYCHOLOGY/
88	(bio feedback$ or bio?feedback$ or feedback$).ti,ab.
89	THERAPY, COMPUTER-ASSISTED/
90	(virtual realit$ or VR).ti,ab.
91	(balance adj3 (train$ or practi$ or exercis$ or game$)).ti,ab.
92	wii fit.ti,ab.
93	(computer$ adj3 (therap$ or game$)).ti,ab.
94	or/34-93
95	and/33,94
96	and/7,95

1
2

EBM Reviews - Health Technology Assessment

SPAST_Q1_physio_economic_hta_070910

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).tw.
5	hyperton$.tw.
6	or/1-5
7	exp BRAIN INJURIES/
8	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.
9	ABI.tw.
10	static encephalopath$.tw.
11	CEREBRAL PALSY/
12	(cerebral adj3 pals$).tw.
13	exp MENINGITIS/
14	(meningitis or meningococcal).tw.
15	exp CRANIOCEREBRAL TRAUMA/
16	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.
17	exp ENCEPHALITIS/
18	encephaliti$.tw.
19	exp CEREBROVASCULAR DISORDERS/
20	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.
21	exp HYDROCEPHALUS/
22	hydrocephal$.tw.
23	SHAKEN BABY SYNDROME/
24	(shak$ adj3 (injur$ or syndrome$)).tw.
25	or/7-24
26	and/6,25
27	exp PHYSICAL THERAPY MODALITIES/
28	exp REHABILITATION/
29	OCCUPATIONAL THERAPY/
30	((physical or occupational) adj3 therap$).tw.
31	physiotherap$.tw.
32	(rehab$ or habilitat$).tw.

33	exp EXERCISE THERAPY/
34	exp EXERCISE MOVEMENT TECHNIQUES/
35	RESISTANCE TRAINING/
36	exp MUSCLE STRENGTH/
37	(musc$ adj3 (strength$ or strong$)).tw.
38	((exercis$ or mov$) adj3 therap$).tw.
39	kinesi?therap$.tw.
40	((resist$ or strength$ or weight$ or agonist$ or circuit$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).tw.
41	((function$ or locomot$ or e#centric or concentric or target$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).tw.
42	treadmill$.tw.
43	(multi?gym$ or multi gym$).tw.
44	(cycle$ or bicycle$ or bike$ or tricycle$ or trike$ or hand cycle$ or hand?cycle$).tw.
45	((rebound or trampolin$) adj3 therap$).tw.
46	(proprioceptive neuromuscular facilitation or PNF).tw.
47	(motor adj3 (learn$ or train$ or re learn$ or re?learn$ or perform$)).tw.
48	MRP.tw.
49	((task$ or environment$ or context$ or occupat$ or participat$ or function$ or activit$) adj3 (manipulat$ or approach$ or train$ or therap$)).tw.
50	dynamic system$.tw.
51	ACTIVITIES OF DAILY LIVING/
52	(activ$ adj3 (daily living or daily life)).tw.
53	ADL.tw.
54	(bobath or NDT).tw.
55	((neuro?development$ or neuro development$ or neuromuscular or key point$) adj3 (train$ or treatment$ or therap$ or facilitat$ or approach$ or control$)).tw.
56	system$ approach$.tw.
57	(normal adj2 mov$ adj2 (pattern$ or facilitat$)).tw.
58	(abnormal adj2 mov$ adj2 (inhibit$ or control$)).tw.
59	RESTRAINT, PHYSICAL/
60	(constraint$ adj3 therap$).tw.
61	(CIMT or MCIMT or "forced use").tw.
62	MUSCLE STRETCHING EXERCISES/
63	((activ$ or passiv$ or musc$ or dynamic$ or static$ or isometric$ or relax$ or ballistic$) adj3 (stretch$ or mov$)).tw.
64	CASTS, SURGICAL/
65	((serial or series) adj3 cast$).tw.
66	exp POSTURE/
67	(postur$ adj3 (care$ or caring or manag$)).tw.

68	(functional sitting position$ or FSP).tw.
69	((speciali#ed or adapt$ or solution$ or mo?ld$) adj3 seat$).tw.
70	(knee$ adj3 block$).tw.
71	(sleep$ adj3 system$).tw.
72	(stand$ adj3 (fram$ or practi$)).tw.
73	HYDROTHERAPY/
74	(hydrotherap$ or aquatherap$).tw.
75	((water or swim$ or aquatic) adj3 therap$).tw.
76	exp ELECTRIC STIMULATION THERAPY/
77	(electric$ stimulation adj3 (therap$ or function$ or neuromuscular)).tw.
78	FES.tw.
79	(home$ adj3 (activ$ or handl$ or interven$ or therap$ or program$ or care$ or caring)).tw.
80	BIOFEEDBACK, PSYCHOLOGY/
81	(bio feedback$ or bio?feedback$ or feedback$).tw.
82	THERAPY, COMPUTER-ASSISTED/
83	(virtual realit$ or VR).tw.
84	(balance adj3 (train$ or practi$ or exercis$ or game$)).tw.
85	wii fit.tw.
86	(computer$ adj3 (therap$ or game$)).tw.
87	or/27-86
88	and/26,87

EBM Reviews - NHS Economic Evaluation Database

SPAST_Q1_physio_economic_nhseed_070910

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).tw.
5	hyperton$.tw.
6	or/1-5
7	exp BRAIN INJURIES/
8	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.
9	ABI.tw.
10	static encephalopath$.tw.
11	CEREBRAL PALSY/
12	(cerebral adj3 pals$).tw.
13	exp MENINGITIS/
14	(meningitis or meningococcal).tw.
15	exp CRANIOCEREBRAL TRAUMA/
16	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.
17	exp ENCEPHALITIS/
18	encephaliti$.tw.
19	exp CEREBROVASCULAR DISORDERS/
20	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.
21	exp HYDROCEPHALUS/
22	hydrocephal$.tw.
23	SHAKEN BABY SYNDROME/
24	(shak$ adj3 (injur$ or syndrome$)).tw.
25	or/7-24
26	and/6,25
27	exp PHYSICAL THERAPY MODALITIES/
28	exp REHABILITATION/
29	OCCUPATIONAL THERAPY/
30	((physical or occupational) adj3 therap$).tw.
31	physiotherap$.tw.
32	(rehab$ or habilitat$).tw.

33	exp EXERCISE THERAPY/
34	exp EXERCISE MOVEMENT TECHNIQUES/
35	RESISTANCE TRAINING/
36	exp MUSCLE STRENGTH/
37	(musc$ adj3 (strength$ or strong$)).tw.
38	((exercis$ or mov$) adj3 therap$).tw.
39	kinesi?therap$.tw.
40	((resist$ or strength$ or weight$ or agonist$ or circuit$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).tw.
41	((function$ or locomot$ or e#centric or concentric or target$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).tw.
42	treadmill$.tw.
43	(multi?gym$ or multi gym$).tw.
44	(cycle$ or bicycle$ or bike$ or tricycle$ or trike$ or hand cycle$ or hand?cycle$).tw.
45	((rebound or trampolin$) adj3 therap$).tw.
46	(proprioceptive neuromuscular facilitation or PNF).tw.
47	(motor adj3 (learn$ or train$ or re learn$ or re?learn$ or perform$)).tw.
48	MRP.tw.
49	((task$ or environment$ or context$ or occupat$ or participat$ or function$ or activit$) adj3 (manipulat$ or approach$ or train$ or therap$)).tw.
50	dynamic system$.tw.
51	ACTIVITIES OF DAILY LIVING/
52	(activ$ adj3 (daily living or daily life)).tw.
53	ADL.tw.
54	(bobath or NDT).tw.
55	((neuro?development$ or neuro development$ or neuromuscular or key point$) adj3 (train$ or treatment$ or therap$ or facilitat$ or approach$ or control$)).tw.
56	system$ approach$.tw.
57	(normal adj2 mov$ adj2 (pattern$ or facilitat$)).tw.
58	(abnormal adj2 mov$ adj2 (inhibit$ or control$)).tw.
59	RESTRAINT, PHYSICAL/
60	(constraint$ adj3 therap$).tw.
61	(CIMT or MCIMT or "forced use").tw.
62	MUSCLE STRETCHING EXERCISES/
63	((activ$ or passiv$ or musc$ or dynamic$ or static$ or isometric$ or relax$ or ballistic$) adj3 (stretch$ or mov$)).tw.
64	CASTS, SURGICAL/
65	((serial or series) adj3 cast$).tw.
66	exp POSTURE/
67	(postur$ adj3 (care$ or caring or manag$)).tw.

68	(functional sitting position$ or FSP).tw.
69	((speciali#ed or adapt$ or solution$ or mo?ld$) adj3 seat$).tw.
70	(knee$ adj3 block$).tw.
71	(sleep$ adj3 system$).tw.
72	(stand$ adj3 (fram$ or practi$)).tw.
73	HYDROTHERAPY/
74	(hydrotherap$ or aquatherap$).tw.
75	((water or swim$ or aquatic) adj3 therap$).tw.
76	exp ELECTRIC STIMULATION THERAPY/
77	(electric$ stimulation adj3 (therap$ or function$ or neuromuscular)).tw.
78	FES.tw.
79	(home$ adj3 (activ$ or handl$ or interven$ or therap$ or program$ or care$ or caring)).tw.
80	BIOFEEDBACK, PSYCHOLOGY/
81	(bio feedback$ or bio?feedback$ or feedback$).tw.
82	THERAPY, COMPUTER-ASSISTED/
83	(virtual realit$ or VR).tw.
84	(balance adj3 (train$ or practi$ or exercis$ or game$)).tw.
85	wii fit.tw.
86	(computer$ adj3 (therap$ or game$)).tw.
87	or/27-86
88	and/26,87

EMBASE 1980+

SPAST_Q1_physio_economic_embase_070910

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	SPASTICITY/
9	exp MUSCLE SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	or/8-12
14	exp BRAIN INJURY/
15	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
16	ABI.ti,ab.
17	static encephalopath$.ti,ab.
18	CEREBRAL PALSY/
19	(cerebral adj3 pals$).ti,ab.
20	exp MENINGITIS/
21	(meningitis or meningococcal).ti,ab.
22	exp HEAD INJURY/
23	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
24	exp ENCEPHALITIS/
25	encephaliti$.ti,ab.
26	exp CEREBROVASCULAR DISEASE/
27	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
28	exp HYDROCEPHALUS/
29	hydrocephal$.ti,ab.
30	SHAKEN BABY SYNDROME/
31	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
32	or/14-31

33	and/13,32
34	exp PHYSIOTHERAPY/ or PEDIATRIC PHYSIOTHERAPY/
35	exp REHABILITATION/ or PEDIATRIC REHABILITATION/
36	OCCUPATIONAL THERAPY/
37	((physical or occupational) adj3 therap$).ti,ab.
38	physiotherap$.ti,ab.
39	(rehab$ or habilitat$).ti,ab.
40	exp KINESIOTHERAPY/
41	MOVEMENT THERAPY/
42	MUSCLE TRAINING/
43	RESISTANCE TRAINING/
44	MUSCLE STRENGTH/
45	(musc$ adj3 (strength$ or strong$)).ti,ab.
46	((exercis$ or mov$) adj3 therap$).ti,ab.
47	kinesi?therap$.ti,ab.
48	((resist$ or strength$ or weight$ or agonist$ or circuit) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
49	((function$ or locomot$ or e#centric or concentric or target$) adj3 (musc$ or train$ or bear$ or exercis$ or agonist$)).ti,ab.
50	TREADMILL/ or TREADMILL EXERCISE/
51	treadmill$.ti,ab.
52	(multi?gym$ or multi gym$).ti,ab.
53	BICYCLE/
54	(cycle$ or bicycle$ or bike$ or tricycle$ or trike$ or hand cycle$ or hand?cycle$).ti,ab.
55	((rebound or trampolin$) adj3 therap$).ti,ab.
56	(proprioceptive neuromuscular facilitation or PNF).ti,ab.
57	MOTOR PERFORMANCE/
58	(motor adj3 (learn$ or train$ or re learn$ or re?learn$ or perform$)).ti,ab.
59	MRP.ti,ab.
60	((task$ or environment$ or context$ or occupat$ or participat$ or function$ or activit$) adj3 (manipulat$ or approach$ or train$ or therap$)).ti,ab.
61	dynamic system$.ti,ab.
62	DAILY LIFE ACTIVITY/
63	(activ$ adj3 (daily living or daily life)).ti,ab.
64	ADL.ti,ab.
65	NEUROMUSCULAR FACILITATION/
66	(bobath or NDT).ti,ab.
67	((neuro?development$ or neuro development$ or neuromuscular or key point$) adj3 (train$ or treatment$ or therap$ or facilitat$ or approach$ or control$)).ti,ab.
68	system$ approach$.ti,ab.

69	(normal adj2 mov$ adj2 (pattern$ or facilitat$)).ti,ab.
70	(abnormal adj2 mov$ adj2 (inhibit$ or control$)).ti,ab.
71	CONSTRAINT INDUCED THERAPY/
72	(constraint$ adj3 therap$).ti,ab.
73	(CIMT or MCIMT or "forced use").ti,ab.
74	STRETCHING EXERCISE/
75	((activ$ or passiv$ or musc$ or dynamic$ or static$ or isometric$ or relax$ or ballistic$) adj3 (stretch$ or mov$)).ti,ab.
76	PLASTER CAST/
77	((serial or series) adj3 cast$).ti,ab.
78	BODY POSTURE/
79	(postur$ adj3 (care$ or caring or manag$)).ti,ab.
80	SITTING/
81	(functional sitting position$ or FSP).ti,ab.
82	((speciali#ed or adapt$ or solution$ or mo?ld$) adj3 seat$).ti,ab.
83	(knee$ adj3 block$).ti,ab.
84	(sleep$ adj3 system$).ti,ab.
85	(stand$ adj3 (fram$ or practi$)).ti,ab.
86	HYDROTHERAPY/
87	(hydrotherap$ or aquatherap$).ti,ab.
88	((water or swim$ or aquatic) adj3 therap$).ti,ab.
89	FUNCTIONAL ELECTRICAL STIMULATION/
90	(electric$ stimulation adj3 (therap$ or function$ or neuromuscular)).ti,ab.
91	FES.ti,ab.
92	exp HOME CARE/
93	HOME REHABILITATION/ or HOME PHYSIOTHERAPY/
94	(home$ adj3 (activ$ or handl$ or interven$ or therap$ or program$ or care$ or caring)).ti,ab.
95	exp FEEDBACK SYSTEM/
96	(bio feedback$ or bio?feedback$ or feedback$).ti,ab.
97	exp COMPUTER ASSISTED THERAPY/
98	VIRTUAL REALITY/
99	(virtual realit$ or VR).ti,ab.
100	(balance adj3 (train$ or practi$ or exercis$ or game$)).ti,ab.
101	wii fit.ti,ab.
102	(computer$ adj3 (therap$ or game$)).ti,ab.
103	or/34-102
104	and/33,103
105	limit 104 to english language

106	limit 105 to yr="1970 -Current"
107	and/7,106

Question 2 What is the effectiveness of orthotic interventions (for example, ankle-foot orthoses, knee splints, and upper limb orthoses) as compared to no orthoses to optimise movement and function, to prevent or treat contractures in children with spasticity and with or without other motor disorders caused by a non-progressive brain disorder?

Ovid MEDLINE(R) 1950+

SPAST_Q2_orthoses_stem_medline_080910

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	exp DYSKINESIAS/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	exp DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).ti,ab.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).ti,ab.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).ti,ab.
17	exp ATAXIA/
18	atax$.ti,ab.
19	upper motor neuron? lesion$.ti,ab.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
23	ABI.ti,ab.
24	static encephalopath$.ti,ab.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).ti,ab.
27	exp MENINGITIS/
28	(meningitis or meningococcal).ti,ab.

29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
31	exp ENCEPHALITIS/
32	encephaliti$.ti,ab.
33	exp STROKE/
34	stroke$.ti,ab.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp HYDROCEPHALUS/
39	hydrocephal$.ti,ab.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	(unilateral$ or bilateral$).ti,ab.
51	or/43-50
52	and/20,51
53	and/42,51
54	and/20,42
55	or/52-54
56	exp ORTHOTIC DEVICES/
57	BRACES/
58	SPLINTS/
59	exp CLOTHING/
60	SHOES/
61	(orthos$ or orthotic$).ti,ab.
62	(splint$ or brace$ or bracing or cuff$).ti,ab.
63	AFO.ti,ab.
64	(GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS).ti,ab.

65	(KAFO or HKAFO or THKAFO).ti,ab.
66	(TLSO or CTLSO).ti,ab.
67	(insole$ or shoe$ or boot$ or footwear$ or insert$).ti,ab.
68	(heel adj3 (cup$ or cushion$ or flare$ or wedge$ or elevat$ or lift$ or extend$ or thomas$ or counter$ or relief$)).ti,ab.
69	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (rocker$ or metatarsal or wedge$ or flare$)).ti,ab.
70	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (steel or elevat$ or excavat$ or scaphoid or crest$)).ti,ab.
71	((flare$ or wedge$) adj3 (medial$ or lateral$)).ti,ab.
72	(contracture correction device$ or CCD).ti,ab.
73	(lycra or spandex or elastane).ti,ab.
74	(body suit$ or body?suit$).ti,ab.
75	(sleeved vest$ or glove$).ti,ab.
76	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (garment$ or sleeve$ or splint$ or sling$ or sock$ or vest$)).ti,ab.
77	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (stocking$ or shorts or leggings or suit$ or brace$ or cuff$)).ti,ab.
78	((toeoff or benik or matrix) adj3 (splint$ or support$ or brace$ or cuff$)).ti,ab.
79	piedro$.ti,ab.
80	or/56-79
81	and/55,80
82	limit 81 to english language
83	limit 82 to animals
84	limit 82 to (animals and humans)
85	83 not 84
86	82 not 85

1
2

Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations

SPAST_Q2_orthoses_medlne_in-process_080910

#	Searches
1	(spastic$ or spasm$).ti,ab.
2	hyperton$.ti,ab.
3	dyskinesi$.ti,ab.
4	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
5	dystoni$.ti,ab.
6	(chorea$ or choreic$ or choreo$).ti,ab.
7	(athetos$ or athetoid).ti,ab.
8	(musc$ adj3 weak$).ti,ab.
9	atax$.ti,ab.
10	upper motor neuron? lesion$.ti,ab.
11	or/1-10
12	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
13	ABI.ti,ab.
14	static encephalopath$.ti,ab.
15	(cerebral adj3 pals$).ti,ab.
16	(meningitis or meningococcal).ti,ab.
17	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
18	encephaliti$.ti,ab.
19	stroke$.ti,ab.
20	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
21	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
22	hydrocephal$.ti,ab.
23	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
24	or/12-23
25	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
26	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
27	(unilateral$ or bilateral$).ti,ab.
28	or/25-27
29	and/11,24
30	and/11,28
31	and/24,28

32	or/29-31
33	(orthos$ or orthotic$).ti,ab.
34	(splint$ or brace$ or bracing or cuff$).ti,ab.
35	AFO.ti,ab.
36	(GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS).ti,ab.
37	(KAFO or HKAFO or THKAFO).ti,ab.
38	(TLSO or CTLSO).ti,ab.
39	(insole$ or shoe$ or boot$ or footwear$ or insert$).ti,ab.
40	(heel adj3 (cup$ or cushion$ or flare$ or wedge$ or elevat$ or lift$ or extend$ or thomas$ or counter$ or relief$)).ti,ab.
41	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (rocker$ or metatarsal or wedge$ or flare$)).ti,ab.
42	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (steel or elevat$ or excavat$ or scaphoid or crest$)).ti,ab.
43	((flare$ or wedge$) adj3 (medial$ or lateral$)).ti,ab.
44	(contracture correction device$ or CCD).ti,ab.
45	(lycra or spandex or elastane).ti,ab.
46	(body suit$ or body?suit$).ti,ab.
47	(sleeved vest$ or glove$).ti,ab.
48	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (garment$ or sleeve$ or splint$ or sling$ or sock$ or vest$)).ti,ab.
49	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (stocking$ or shorts or leggings or suit$ or brace$ or cuff$)).ti,ab.
50	((toeoff or benik or matrix) adj3 (splint$ or support$ or brace$ or cuff$)).ti,ab.
51	piedro$.ti,ab.
52	or/33-51
53	and/32,52

1

2

EBM Reviews - Cochrane Central Register of Controlled Trials

SPAST_Q2_orthoses_cctr_080910

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	exp DYSKINESIAS/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	exp DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).ti,ab.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).ti,ab.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).ti,ab.
17	exp ATAXIA/
18	atax$.ti,ab.
19	upper motor neuron? lesion$.ti,ab.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
23	ABI.ti,ab.
24	static encephalopath$.ti,ab.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).ti,ab.
27	exp MENINGITIS/
28	(meningitis or meningococcal).ti,ab.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
31	exp ENCEPHALITIS/
32	encephaliti$.ti,ab.
33	exp STROKE/
34	stroke$.ti,ab.

35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp HYDROCEPHALUS/
39	hydrocephal$.ti,ab.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	(unilateral$ or bilateral$).ti,ab.
51	or/43-50
52	and/20,51
53	and/42,51
54	and/20,42
55	or/52-54
56	exp ORTHOTIC DEVICES/
57	BRACES/
58	SPLINTS/
59	exp CLOTHING/
60	SHOES/
61	(orthos$ or orthotic$).ti,ab.
62	(splint$ or brace$ or bracing or cuff$).ti,ab.
63	AFO.ti,ab.
64	(GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS).ti,ab.
65	(KAFO or HKAFO or THKAFO).ti,ab.
66	(TLSO or CTLSO).ti,ab.
67	(insole$ or shoe$ or boot$ or footwear$ or insert$).ti,ab.
68	(heel adj3 (cup$ or cushion$ or flare$ or wedge$ or elevat$ or lift$ or extend$ or thomas$ or counter$ or relief$)).ti,ab.
69	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (rocker$ or metatarsal or wedge$ or flare$)).ti,ab.

70	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (steel or elevat$ or excavat$ or scaphoid or crest$)).ti,ab.
71	((flare$ or wedge$) adj3 (medial$ or lateral$)).ti,ab.
72	(contracture correction device$ or CCD).ti,ab.
73	(lycra or spandex or elastane).ti,ab.
74	(body suit$ or body?suit$).ti,ab.
75	(sleeved vest$ or glove$).ti,ab.
76	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (garment$ or sleeve$ or splint$ or sling$ or sock$ or vest$)).ti,ab.
77	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (stocking$ or shorts or leggings or suit$ or brace$ or cuff$)).ti,ab.
78	((toeoff or benik or matrix) adj3 (splint$ or support$ or brace$ or cuff$)).ti,ab.
79	piedro$.ti,ab.
80	or/56-79
81	and/55,80

1

2

EBM Reviews - Cochrane Database of Systematic Reviews 2005+, EBM Reviews - Database of Abstracts of Reviews of Effects

SPAST_Q2_orthoses_cdsrdare_080910

#	Searches
1	MUSCLE SPASTICITY.kw.
2	SPASM.kw.
3	MUSCLE HYPERTONIA.kw.
4	(spastic$ or spasm$).tw,tx.
5	hyperton$.tw,tx.
6	DYSKINESIAS.kw.
7	dyskinesi$.tw,tx.
8	((abnormal$ or involuntar$) adj2 mov$).tw,tx.
9	DYSTONIA.kw.
10	dystoni$.tw,tx.
11	CHOREA.kw.
12	(chorea$ or choreic$ or choreo$).tw,tx.
13	ATHETOSIS.kw.
14	(athetos$ or athetoid).tw,tx.
15	MUSCLE WEAKNESS.kw.
16	(musc$ adj3 weak$).tw,tx.
17	ATAXIA.kw.
18	atax$.tw,tx.
19	upper motor neuron? lesion$.tw,tx.
20	or/1-19
21	BRAIN INJURIES.kw.
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw,tx.
23	ABI.tw,tx.
24	static encephalopath$.tw,tx.
25	CEREBRAL PALSY.kw.
26	(cerebral adj3 pals$).tw,tx.
27	MENINGITIS.kw.
28	(meningitis or meningococcal).tw,tx.
29	CRANIOCEREBRAL TRAUMA.kw.
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw,tx.
31	ENCEPHALITIS.kw.
32	encephaliti$.tw,tx.
33	STROKE.kw.

34	stroke$.tw,tx.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw,tx.
36	CEREBROVASCULAR DISORDERS.kw.
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw,tx.
38	HYDROCEPHALUS.kw.
39	hydrocephal$.tw,tx.
40	SHAKEN BABY SYNDROME.kw.
41	(shak$ adj3 (injur$ or syndrome$)).tw,tx.
42	or/21-41
43	PARALYSIS.kw.
44	HEMIPLEGIA.kw.
45	PARAPLEGIA.kw.
46	QUADRIPLEGIA.kw.
47	PARESIS.kw.
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw,tx.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw,tx.
50	(unilateral$ or bilateral$).tw,tx.
51	or/43-50
52	and/20,51
53	and/42,51
54	and/20,42
55	or/52-54
56	ORTHOTIC DEVICES.kw.
57	BRACES.kw.
58	SPLINTS.kw.
59	CLOTHING.kw.
60	SHOES.kw.
61	(orthos$ or orthotic$).tw,tx.
62	(splint$ or brace$ or bracing or cuff$).tw,tx.
63	AFO.tw,tx.
64	(GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS).tw,tx.
65	(KAFO or HKAFO or THKAFO).tw,tx.
66	(TLSO or CTLSO).tw,tx.
67	(insole$ or shoe$ or boot$ or footwear$ or insert$).tw,tx.
68	(heel adj3 (cup$ or cushion$ or flare$ or wedge$ or elevat$ or lift$ or extend$ or thomas$ or counter$ or relief$)).tw,tx.
69	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (rocker$ or metatarsal or wedge$ or

	flare$)).tw,tx.
70	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (steel or elevat$ or excavat$ or scaphoid or crest$)).tw,tx.
71	((flare$ or wedge$) adj3 (medial$ or lateral$)).tw,tx.
72	(contracture correction device$ or CCD).tw,tx.
73	(lycra or spandex or elastane).tw,tx.
74	(body suit$ or body?suit$).tw,tx.
75	(sleeved vest$ or glove$).tw,tx.
76	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (garment$ or sleeve$ or splint$ or sling$ or sock$ or vest$)).tw,tx.
77	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (stocking$ or shorts or leggings or suit$ or brace$ or cuff$)).tw,tx.
78	((toeoff or benik or matrix) adj3 (splint$ or support$ or brace$ or cuff$)).tw,tx.
79	piedro$.tw,tx.
80	or/56-79
81	and/55,80

EMBASE 1980+

SPAST_Q2_orthoses_stem_embase_080910

#	Searches
1	SPASTICITY/
2	exp MUSCLE SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	DYSKINESIA/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	CHOREOATHETOSIS/
13	ATHETOSIS/
14	(chorea$ or choreic$ or choreo$).ti,ab.
15	(athetos$ or athetoid).ti,ab.
16	exp MUSCLE WEAKNESS/
17	(musc$ adj3 weak$).ti,ab.
18	exp ATAXIA/
19	atax$.ti,ab.
20	upper motor neuron? lesion$.ti,ab.
21	or/1-20
22	exp BRAIN INJURY/
23	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
24	ABI.ti,ab.
25	static encephalopath$.ti,ab.
26	CEREBRAL PALSY/
27	(cerebral adj3 pals$).ti,ab.
28	exp MENINGITIS/
29	(meningitis or meningococcal).ti,ab.
30	exp HEAD INJURY/
31	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
32	exp ENCEPHALITIS/
33	encephaliti$.ti,ab.

34	STROKE/
35	stroke$.ti,ab.
36	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
37	exp CEREBROVASCULAR DISEASE/
38	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
39	exp HYDROCEPHALUS/
40	hydrocephal$.ti,ab.
41	SHAKEN BABY SYNDROME/
42	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
43	or/22-42
44	exp PARALYSIS/ or MONOPLEGIA/ or HEMIPLEGIA/ or PARAPLEGIA/ or QUADRIPLEGIA/
45	SPASTIC PARAPLEGIA/
46	PARESIS/ or MONOPARESIS/ or HEMIPARESIS/
47	SPASTIC PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	(unilateral$ or bilateral$).ti,ab.
51	or/44-50
52	and/21,51
53	and/43,51
54	and/21,43
55	or/52-54
56	ORTHOTICS/
57	ORTHOSIS/
58	FOOT ORTHOSIS/
59	BRACE/ or ORTHOPEDIC SHOE/ or SPLINT/
60	exp CLOTHING/
61	(orthos$ or orthotic$).ti,ab.
62	(splint$ or brace$ or bracing or cuff$).ti,ab.
63	AFO.ti,ab.
64	(GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS).ti,ab.
65	(KAFO or HKAFO or THKAFO).ti,ab.
66	(TLSO or CTLSO).ti,ab.
67	(insole$ or shoe$ or boot$ or footwear$ or insert$).ti,ab.
68	(heel adj3 (cup$ or cushion$ or flare$ or wedge$ or elevat$ or lift$ or extend$ or thomas$ or counter$ or relief$)).ti,ab.

69	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (rocker$ or metatarsal or wedge$ or flare$)).ti,ab.
70	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (steel or elevat$ or excavat$ or scaphoid or crest$)).ti,ab.
71	((flare$ or wedge$) adj3 (medial$ or lateral$)).ti,ab.
72	(contracture correction device$ or CCD).ti,ab.
73	(lycra or spandex or elastane).ti,ab.
74	(body suit$ or body?suit$).ti,ab.
75	(sleeved vest$ or glove$).ti,ab.
76	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (garment$ or sleeve$ or splint$ or sling$ or sock$ or vest$)).ti,ab.
77	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (stocking$ or shorts or leggings or suit$ or brace$ or cuff$)).ti,ab.
78	((toeoff or benik or matrix) adj3 (splint$ or support$ or brace$ or cuff$)).ti,ab.
79	piedro$.ti,ab.
80	or/56-79
81	and/55,80
82	limit 81 to english language

CINAHL 1981+

SPAST_Q2_orthoses_cinahl_090910

#	Query	Limiters/Expanders
S148	S147	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase
S147	S118 and S146	Search modes - Boolean/Phrase
S146	S119 or S120 or S121 or S122 or S123 or S124 or S125 or S126 or S127 or S128 or S129 or S130 or S131 or S132 or S133 or S134 or S135 or S136 or S137 or S138 or S139 or S140 or S141 or S142 or S143 or S144 or S145	Search modes - Boolean/Phrase
S145	AB (matrix N3 splint*) or AB (matrix N3 support*) or AB (matrix N3 brace*) or AB (matrix N3 cuff*)	Search modes - Boolean/Phrase
S144	TI (matrix N3 splint*) or TI (matrix N3 support*) or TI (matrix N3 brace*) or TI (matrix N3 cuff*)	Search modes - Boolean/Phrase
S143	TI (toeoff or benik or piedro) or AB (toeoff or benik or piedro)	Search modes - Boolean/Phrase
S142	TI (garment* or sleeve* or sling* or sock* or stocking* or shorts or leggings or suit* or vest*) or AB (garment* or sleeve* or sling* or sock* or stocking* or shorts or leggings or suit* or vest*)	Search modes - Boolean/Phrase
S141	TI (support* or pressure or dynamic or stretch* or compress*) or AB (support* or pressure or dynamic or stretch* or compress*)	Search modes - Boolean/Phrase
S140	TI (body-suit* or bodysuit* or sleeved vest* or glove*) or AB (body-suit* or bodysuit* or sleeved vest* or glove*)	Search modes - Boolean/Phrase
S139	TI (lycra or spandex or elastane) or AB (lycra or spandex or elastane)	Search modes - Boolean/Phrase
S138	TI (contracture correction device* or CCD) or AB (contracture correction device* or CCD)	Search modes - Boolean/Phrase
S137	TI (lateral* N3 flare*) or TI (lateral* N3 wedge*) or AB (lateral* N3 flare*) or AB (lateral* N3 wedge*)	Search modes - Boolean/Phrase
S136	TI (medial* N3 flare*) or TI (medial* N3 wedge*) or AB (medial* N3 flare*) or AB (medial* N3 wedge*)	Search modes - Boolean/Phrase
S135	TI (sole flare* or sole elevat* or metatarsal pad* or sole excavat* or scaphoid pad* or toe crest*) or AB (sole flare* or sole elevat* or metatarsal pad* or sole excavat* or scaphoid pad* or toe crest*)	Search modes - Boolean/Phrase
S134	TI (rocker bar* or rocker shoe* or metatarsal bar* or steel	Search modes -

	bar* or sole wedge*) or AB (rocker bar* or rocker shoe* or metatarsal bar* or steel bar* or sole wedge*)	Boolean/Phrase
S133	TI (heel life* or heel extend* or thomas* heel or heel counter* or heel relief*) or AB (heel life* or heel extend* or thomas* heel or heel counter* or heel relief*)	Search modes - Boolean/Phrase
S132	TI (heel cup* or heel cushion* or heel flare* or heel wedge* or heel elevat*) or AB (heel cup* or heel cushion* or heel flare* or heel wedge* or heel elevat*)	Search modes - Boolean/Phrase
S131	TI (insole* or shoe* or boot* or footwear* or insert*) or AB (insole* or shoe* or boot* or footwear* or insert*)	Search modes - Boolean/Phrase
S130	TI (KAFO or HKAFO or THKAFO or TLSO or CTLSO) or AB (KAFO or HKAFO or THKAFO or TLSO or CTLSO)	Search modes - Boolean/Phrase
S129	TI (AFO or GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS) or AB (AFO or GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS)	Search modes - Boolean/Phrase
S128	TI (splint* or brace* or bracing or cuff*) or AB (splint* or brace* or bracing or cuff*)	Search modes - Boolean/Phrase
S127	TI (orthos* or orthotic*) or AB (orthos* or orthotic*)	Search modes - Boolean/Phrase
S126	MH SHOES+	Search modes - Boolean/Phrase
S125	MH COMPRESSION GARMENTS	Search modes - Boolean/Phrase
S124	MH ORTHOPEDIC FOOTWEAR	Search modes - Boolean/Phrase
S123	MH CLOTHING+	Search modes - Boolean/Phrase
S122	MH SPLINTS	Search modes - Boolean/Phrase
S121	MH RECIPROCATING GAIT ORTHOSES	Search modes - Boolean/Phrase
S120	MH FOOT ORTHOSES	Search modes - Boolean/Phrase
S119	MH ORTHOSES+	Search modes - Boolean/Phrase
S118	S115 or S116 or S117	Search modes - Boolean/Phrase
S117	S105 and S114	Search modes - Boolean/Phrase
S116	S18 and S114	Search modes - Boolean/Phrase
S115	S18 and S105	Search modes -

		Boolean/Phrase
S114	S106 or S107 or S108 or S109 or S110 or S111 or S112 or S113	Search modes - Boolean/Phrase
S113	AB (monopares* or dipares* or hemipares* or quadripares* or tetrapares*)	Search modes - Boolean/Phrase
S112	TI (monopares* or dipares* or hemipares* or quadripares* or tetrapares*)	Search modes - Boolean/Phrase
S111	AB (monoplegi* or diplegi* or hemiplegi* or quadriplegi* or tetraplegi* or unilateral* or bilateral*)	Search modes - Boolean/Phrase
S110	TI (monoplegi* or diplegi* or hemiplegi* or quadriplegi* or tetraplegi* or unilateral* or bilateral*)	Search modes - Boolean/Phrase
S109	MH QUADRIPLEGIA	Search modes - Boolean/Phrase
S108	MH PARAPLEGIA	Search modes - Boolean/Phrase
S107	MH HEMIPLEGIA	Search modes - Boolean/Phrase
S106	MH PARALYSIS+	Search modes - Boolean/Phrase
S105	S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32 or S33 or S34 or S35 or S36 or S37 or S38 or S39 or S40 or S41 or S42 or S43 or S44 or S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58 or S59 or S60 or S61 or S62 or S63 or S64 or S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73 or S74 or S75 or S76 or S77 or S78 or S79 or S80 or S81 or S82 or S83 or S84 or S85 or S86 or S87 or S88 or S89 or S90 or S91 or S92 or S93 or S94 or S95 or S96 or S97 or S98 or S99 or S100 or S101 or S102 or S103 or S104	Search modes - Boolean/Phrase
S104	TI (shak* N3 syndrome*) or AB (shak* N3 syndrome*)	Search modes - Boolean/Phrase
S103	TI (shak* N3 injur*) or AB (shak* N3 injur*)	Search modes - Boolean/Phrase
S102	MH SHAKEN BABY SYNDROME	Search modes - Boolean/Phrase
S101	TI (hydrocephal*) or AB (hydrocephal*)	Search modes - Boolean/Phrase
S100	MH HYDROCEPHALUS+	Search modes - Boolean/Phrase
S99	TI (cerebrovascular N2 insult*) or AB (cerebrovascular N2 insult*)	Search modes - Boolean/Phrase
S98	TI (cerebrovascular N2 disturb*) or AB (cerebrovascular N2	Search modes -

	disturb*)	Boolean/Phrase
S97	TI (cerebrovascular N2 damage*) or AB (cerebrovascular N2 damage*)	Search modes - Boolean/Phrase
S96	TI (cerebrovascular N2 occlusion*) or AB (cerebrovascular N2 occlusion*)	Search modes - Boolean/Phrase
S95	TI (cerebrovascular N2 insufficien*) or AB (cerebrovascular N2 insufficien*)	Search modes - Boolean/Phrase
S94	TI (cerebrovascular N2 disease*) or AB (cerebrovascular N2 disease*)	Search modes - Boolean/Phrase
S93	TI (cerebrovascular N2 disorder*) or AB (cerebrovascular N2 disorder*)	Search modes - Boolean/Phrase
S92	TI (intracranial vascular N2 insult*) or AB (intracranial vascular N2 insult*)	Search modes - Boolean/Phrase
S91	TI (intracranial vascular N2 disturb*) or AB (intracranial vascular N2 disturb*)	Search modes - Boolean/Phrase
S90	TI (intracranial vascular N2 damage*) or AB (intracranial vascular N2 damage*)	Search modes - Boolean/Phrase
S89	TI (intracranial vascular N2 occlusion*) or AB (intracranial vascular N2 occlusion*)	Search modes - Boolean/Phrase
S88	TI (intracranial vascular N2 insufficien*) or AB (intracranial vascular N2 insufficien*)	Search modes - Boolean/Phrase
S87	TI (intracranial vascular N2 disease*) or AB (intracranial vascular N2 disease*)	Search modes - Boolean/Phrase
S86	TI (intracranial vascular N2 disorder*) or AB (intracranial vascular N2 disorder*)	Search modes - Boolean/Phrase
S85	TI (intra-cranial vascular N2 insult*) or AB (intra-cranial vascular N2 insult*)	Search modes - Boolean/Phrase
S84	TI (intra-cranial vascular N2 disturb*) or AB (intra-cranial vascular N2 disturb*)	Search modes - Boolean/Phrase
S83	TI (intra-cranial vascular N2 damage*) or AB (intra-cranial vascular N2 damage*)	Search modes - Boolean/Phrase
S82	TI (intra-cranial vascular N2 occlusion*) or AB (intra-cranial vascular N2 occlusion*)	Search modes - Boolean/Phrase
S81	TI (intra-cranial vascular N2 insufficien*) or AB (intra-cranial vascular N2 insufficien*)	Search modes - Boolean/Phrase
S80	TI (intra-cranial vascular N2 disease*) or AB (intra-cranial vascular N2 disease*)	Search modes - Boolean/Phrase
S79	TI (intra-cranial vascular N2 disorder*) or AB (intra-cranial vascular N2 disorder*)	Search modes - Boolean/Phrase
S78	TI (brain vascular N2 insult*) or AB (brain vascular N2 insult*)	Search modes - Boolean/Phrase

S77	TI (brain vascular N2 disturb*) or AB (brain vascular N2 disturb*)	Search modes - Boolean/Phrase
S76	TI (brain vascular N2 damage*) or AB (brain vascular N2 damage*)	Search modes - Boolean/Phrase
S75	TI (brain vascular N2 occlusion*) or AB (brain vascular N2 occlusion*)	Search modes - Boolean/Phrase
S74	TI (brain vascular N2 insufficien*) or AB (brain vascular N2 insufficien*)	Search modes - Boolean/Phrase
S73	TI (brain vascular N2 disease*) or AB (brain vascular N2 disease*)	Search modes - Boolean/Phrase
S72	TI (brain vascular N2 disorder*) or AB (brain vascular N2 disorder*)	Search modes - Boolean/Phrase
S71	MH CEREBROVASCULAR DISORDERS+	Search modes - Boolean/Phrase
S70	TI (intracranial N3 isch#emi*) or AB (intracranial N3 isch#emi*)	Search modes - Boolean/Phrase
S69	TI (intracranial N3 aneurysm*) or AB (intracranial N3 aneurysm*)	Search modes - Boolean/Phrase
S68	TI (intracranial N3 embolism) or AB (intracranial N3 embolism)	Search modes - Boolean/Phrase
S67	TI (intra-cranial N3 isch#emi*) or AB (intra-cranial N3 isch#emi*)	Search modes - Boolean/Phrase
S66	TI (intra-cranial N3 aneurysm*) or AB (intra-cranial N3 aneurysm*)	Search modes - Boolean/Phrase
S65	TI (intra-cranial N3 embolism) or AB (intra-cranial N3 embolism)	Search modes - Boolean/Phrase
S64	TI (cerebral N3 isch#emi*) or AB (cerebral N3 isch#emi*)	Search modes - Boolean/Phrase
S63	TI (cerebral N3 aneurysm*) or AB (cerebral N3 aneurysm*)	Search modes - Boolean/Phrase
S62	TI (cerebral N3 embolism) or AB (cerebral N3 embolism)	Search modes - Boolean/Phrase
S61	TI (brain N3 isch#emi*) or AB (brain N3 isch#emi*)	Search modes - Boolean/Phrase
S60	TI (brain N3 aneurysm*) or AB (brain N3 aneurysm*)	Search modes - Boolean/Phrase
S59	TI (brain N3 embolism) or AB (brain N3 embolism)	Search modes - Boolean/Phrase
S58	TI (stroke*) or AB (stroke*)	Search modes - Boolean/Phrase
S57	MH STROKE	Search modes - Boolean/Phrase

S56	TI (encephaliti*) or AB (encephaliti*)	Search modes - Boolean/Phrase
S55	MH ENCEPHALITIS+	Search modes - Boolean/Phrase
S54	TI (craniocerebral N3 insult*) or AB (craniocerebral N3 insult*)	Search modes - Boolean/Phrase
S53	TI (craniocerebral N3 disturb*) or AB (craniocerebral N3 disturb*)	Search modes - Boolean/Phrase
S52	TI (craniocerebral N3 damage*) or AB (craniocerebral N3 damage*)	Search modes - Boolean/Phrase
S51	TI (craniocerebral N3 trauma*) or AB (craniocerebral N3 trauma*)	Search modes - Boolean/Phrase
S50	TI (craniocerebral N3 injur*) or AB (craniocerebral N3 injur*)	Search modes - Boolean/Phrase
S49	TI (cerebral N3 insult*) or AB (cerebral N3 insult*)	Search modes - Boolean/Phrase
S48	TI (cerebral N3 disturb*) or AB (cerebral N3 disturb*)	Search modes - Boolean/Phrase
S47	TI (cerebral N3 damage*) or AB (cerebral N3 damage*)	Search modes - Boolean/Phrase
S46	TI (cerebral N3 trauma*) or AB (cerebral N3 trauma*)	Search modes - Boolean/Phrase
S45	TI (cerebral N3 injur*) or AB (cerebral N3 injur*)	Search modes - Boolean/Phrase
S44	TI (skull N3 insult*) or AB (skull N3 insult*)	Search modes - Boolean/Phrase
S43	TI (skull N3 disturb*) or AB (skull N3 disturb*)	Search modes - Boolean/Phrase
S42	TI (skull N3 damage*) or AB (skull N3 damage*)	Search modes - Boolean/Phrase
S41	TI (skull N3 trauma*) or AB (skull N3 trauma*)	Search modes - Boolean/Phrase
S40	TI (skull N3 injur*) or AB (skull N3 injur*)	Search modes - Boolean/Phrase
S39	TI (brain N3 insult*) or AB (brain N3 insult*)	Search modes - Boolean/Phrase
S38	TI (brain N3 disturb*) or AB (brain N3 disturb*)	Search modes - Boolean/Phrase
S37	TI (brain N3 damage*) or AB (brain N3 damage*)	Search modes - Boolean/Phrase
S36	TI (brain N3 trauma*) or AB (brain N3 trauma*)	Search modes - Boolean/Phrase

S35	TI (brain N3 injur*) or AB (brain N3 injur*)	Search modes - Boolean/Phrase
S34	TI (head N3 insult*) or AB (head N3 insult*)	Search modes - Boolean/Phrase
S33	TI (head N3 disturb*) or AB (head N3 disturb*)	Search modes - Boolean/Phrase
S32	TI (head N3 damage*) or AB (head N3 damage*)	Search modes - Boolean/Phrase
S31	TI (head N3 trauma*) or AB (head N3 trauma*)	Search modes - Boolean/Phrase
S30	TI (head N3 injur*) or AB (head N3 injur*)	Search modes - Boolean/Phrase
S29	MH HEAD INJURIES+	Search modes - Boolean/Phrase
S28	TI (meningitis or meningococcal) or AB (meningitis or meningococcal)	Search modes - Boolean/Phrase
S27	MH MENINGITIS+	Search modes - Boolean/Phrase
S26	TI (cerebral N3 pals*) or AB (cerebral N3 pals*)	Search modes - Boolean/Phrase
S25	MH CEREBRAL PALSY	Search modes - Boolean/Phrase
S24	TI (static encephalopath*) or AB (static encephalopath*)	Search modes - Boolean/Phrase
S23	TI (ABI) or AB (ABI)	Search modes - Boolean/Phrase
S22	TI (acquired N2 brain injur*) or AB (acquired N2 brain injur*)	Search modes - Boolean/Phrase
S21	TI (nonprogressive N2 brain injur*) or AB (nonprogressive N2 brain injur*)	Search modes - Boolean/Phrase
S20	TI (non-progressive N2 brain injur*) or AB (non-progressive N2 brain injur*)	Search modes - Boolean/Phrase
S19	MH BRAIN INJURIES+	Search modes - Boolean/Phrase
S18	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17	Search modes - Boolean/Phrase
S17	TI (upper motor neuron# lesion*) or AB (upper motor neuron# lesion*)	Search modes - Boolean/Phrase
S16	TI (atax*) or AB (atax*)	Search modes - Boolean/Phrase
S15	MH ATAXIA	Search modes - Boolean/Phrase

S14	TI (musc* N3 weak*) or AB (musc* N3 weak*)	Search modes - Boolean/Phrase
S13	MH MUSCLE WEAKNESS	Search modes - Boolean/Phrase
S12	TI (athetos* or athetoid*) or AB (athetos* or athetoid*)	Search modes - Boolean/Phrase
S11	TI (chorea* or choreic* or choreo*) or AB (chorea* or choreic* or choreo*)	Search modes - Boolean/Phrase
S10	MH CHOREA+	Search modes - Boolean/Phrase
S9	TI (dystoni*) or AB (dystoni*)	Search modes - Boolean/Phrase
S8	MH DYSTONIA+	Search modes - Boolean/Phrase
S7	TI (involuntar* N2 mov*) or AB (involuntar* N2 mov*)	Search modes - Boolean/Phrase
S6	TI (abnormal N2 mov*) or AB (abnormal N2 mov*)	Search modes - Boolean/Phrase
S5	TI (dyskinesi*) or AB (dyskinesi*)	Search modes - Boolean/Phrase
S4	MH DYSKINESIAS+	Search modes - Boolean/Phrase
S3	TI (spastic* or spasm* or hyperton*) or AB (spastic* or spasm* or hyperton*)	Search modes - Boolean/Phrase
S2	MH SPASM+	Search modes - Boolean/Phrase
S1	MH MUSCLE SPASTICITY	Search modes - Boolean/Phrase

1
2

PsycINFO 1806+

SPAST_Q2_orthoses_psycinfo_100910

#	Searches
1	exp SPASMS/
2	MUSCLE SPASMS/
3	(spastic$ or spasm$).ti,ab,id.
4	hyperton$.ti,ab,id.
5	exp DYSKINESIA/
6	dyskinesi$.ti,ab,id.
7	((abnormal$ or involuntar$) adj2 mov$).ti,ab,id.
8	MUSCULAR DISORDERS/
9	dystoni$.ti,ab,id.
10	exp CHOREA/
11	(chorea$ or choreic$ or choreo$).ti,ab,id.
12	ATHETOSIS/
13	(athetos$ or athetoid$).ti,ab,id.
14	MUSCLE TONE/
15	(musc$ adj3 weak$).ti,ab,id.
16	ATAXIA/
17	atax$.ti,ab,id.
18	upper motor neuron? lesion$.ti,ab,id.
19	or/1-18
20	exp TRAUMATIC BRAIN INJURY/
21	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab,id.
22	ABI.ti,ab,id.
23	static encephalopath$.ti,ab,id.
24	CEREBRAL PALSY/
25	(cerebral adj3 pals$).ti,ab,id.
26	exp MENINGITIS/
27	(meningitis or meningococcal).ti,ab,id.
28	exp HEAD INJURIES/
29	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab,id.
30	exp ENCEPHALITIS/
31	encephaliti$.ti,ab,id.
32	CEREBROVASCULAR ACCIDENTS/
33	stroke$.ti,ab,id.

34	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or ischemi$ or ischaemi$)).ti,ab,id.
35	exp CEREBROVASCULAR DISORDERS/
36	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab,id.
37	HYDROCEPHALUS/
38	hydrocephal$.ti,ab,id.
39	(shak$ adj3 (injur$ or syndrome$)).ti,ab,id.
40	or/20-39
41	exp PARALYSIS/ or HEMIPLEGIA/ or HEMIPARESIS/ or PARAPLEGIA/ or QUADRIPLEGIA/
42	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab,id.
43	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab,id.
44	(unilateral$ or bilateral$).ti,ab,id.
45	or/41-44
46	and/19,40
47	and/19,45
48	and/40,45
49	or/46-48
50	exp MEDICAL THERAPEUTIC DEVICES/
51	MOBILITY AIDS/
52	ASSISTIVE TECHNOLOGY/
53	CLOTHING/
54	(orthos$ or orthotic$).ti,ab,id.
55	(splint$ or brace$ or bracing or cuff$).ti,ab,id.
56	AFO.ti,ab,id.
57	(GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS).ti,ab,id.
58	(KAFO or HKAFO or THKAFO).ti,ab,id.
59	(TLSO or CTLSO).ti,ab,id.
60	(insole$ or shoe$ or boot$ or footwear$ or insert$).ti,ab,id.
61	(heel adj3 (cup$ or cushion$ or flare$ or wedge$ or elevat$ or lift$ or extend$ or thomas$ or counter$ or relief$)).ti,ab,id.
62	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (rocker$ or metatarsal or wedge$ or flare$)).ti,ab,id.
63	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (steel or elevat$ or excavat$ or scaphoid or crest$)).ti,ab,id.
64	((flare$ or wedge$) adj3 (medial$ or lateral$)).ti,ab,id.
65	(contracture correction device$ or CCD).ti,ab,id.
66	(lycra or spandex or elastane).ti,ab,id.

67	(body suit$ or body?suit$).ti,ab,id.
68	(sleeved vest$ or glove$).ti,ab,id.
69	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (garment$ or sleeve$ or splint$ or sling$ or sock$ or vest$)).ti,ab,id.
70	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (stocking$ or shorts or leggings or suit$ or brace$ or cuff$)).ti,ab,id.
71	((toeoff or benik or matrix) adj3 (splint$ or support$ or brace$ or cuff$)).ti,ab,id.
72	piedro$.ti,ab,id.
73	or/50-72
74	and/49,73

AMED (Allied and Complementary Medicine) 1985+

SPAST_Q2_orthoses_amed_080910

#	Searches
1	MUSCLE SPASTICITY/
2	SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	exp DYSKINESIA/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	DYSTONIA/
10	dystoni$.ti,ab.
11	(chorea$ or choreic$ or choreo$).ti,ab.
12	(athetos$ or athetoid$).ti,ab.
13	exp MUSCLE WEAKNESS/
14	(musc$ adj3 weak$).ti,ab.
15	ATAXIA/
16	atax$.ti,ab.
17	upper motor neuron? lesion$.ti,ab.
18	or/1-17
19	exp BRAIN INJURIES/
20	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
21	ABI.ti,ab.
22	static encephalopath$.ti,ab.
23	CEREBRAL PALSY/
24	(cerebral adj3 pals$).ti,ab.
25	exp MENINGITIS/
26	(meningitis or meningococcal).ti,ab.
27	exp HEAD INJURIES/
28	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
29	exp ENCEPHALITIS/
30	encephaliti$.ti,ab.
31	STROKE/
32	stroke$.ti,ab.
33	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or ischemi$ or ischaemi$)).ti,ab.

34	exp CEREBROVASCULAR DISORDERS/
35	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
36	HYDROCEPHALUS/
37	hydrocephal$.ti,ab.
38	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
39	or/19-38
40	exp PARALYSIS/ or HEMIPLEGIA/ or PARAPLEGIA/ or QUADRIPLEGIA/
41	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
42	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
43	(unilateral$ or bilateral$).ti,ab.
44	or/40-43
45	and/18,39
46	and/18,44
47	and/39,44
48	or/45-47
49	exp ORTHOTIC DEVICES/
50	SPLINTS/
51	exp CLOTHING/
52	(orthos$ or orthotic$).ti,ab.
53	(splint$ or brace$ or bracing or cuff$).ti,ab.
54	AFO.ti,ab.
55	(GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS).ti,ab.
56	(KAFO or HKAFO or THKAFO).ti,ab.
57	(TLSO or CTLSO).ti,ab.
58	(insole$ or shoe$ or boot$ or footwear$ or insert$).ti,ab.
59	(heel adj3 (cup$ or cushion$ or flare$ or wedge$ or elevat$ or lift$ or extend$ or thomas$ or counter$ or relief$)).ti,ab.
60	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (rocker$ or metatarsal or wedge$ or flare$)).ti,ab.
61	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (steel or elevat$ or excavat$ or scaphoid or crest$)).ti,ab.
62	((flare$ or wedge$) adj3 (medial$ or lateral$)).ti,ab.
63	(contracture correction device$ or CCD).ti,ab.
64	(lycra or spandex or elastane).ti,ab.
65	(body suit$ or body?suit$).ti,ab.
66	(sleeved vest$ or glove$).ti,ab.
67	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (garment$ or sleeve$ or splint$ or sling$ or sock$ or vest$)).ti,ab.

68	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (stocking$ or shorts or leggings or suit$ or brace$ or cuff$)).ti,ab.
69	((toeoff or benik or matrix) adj3 (splint$ or support$ or brace$ or cuff$)).ti,ab.
70	piedro$.ti,ab.
71	or/49-70
72	and/48,71

Question 2 Heath economics searches

Ovid MEDLINE(R) 1950+

SPAST_Q2_orthoses_economic_medline_130910

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	MUSCLE SPASTICITY/
9	exp SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	exp DYSKINESIAS/
14	dyskinesi$.ti,ab.
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	exp DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	(chorea$ or choreic$ or choreo$).ti,ab.
20	exp ATHETOSIS/
21	(athetos$ or athetoid).ti,ab.
22	MUSCLE WEAKNESS/
23	(musc$ adj3 weak$).ti,ab.
24	exp ATAXIA/
25	atax$.ti,ab.

26	upper motor neuron? lesion$.ti,ab.
27	or/8-26
28	exp BRAIN INJURIES/
29	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
30	ABI.ti,ab.
31	static encephalopath$.ti,ab.
32	CEREBRAL PALSY/
33	(cerebral adj3 pals$).ti,ab.
34	exp MENINGITIS/
35	(meningitis or meningococcal).ti,ab.
36	exp CRANIOCEREBRAL TRAUMA/
37	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp ENCEPHALITIS/
39	encephaliti$.ti,ab.
40	exp STROKE/
41	stroke$.ti,ab.
42	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
43	exp CEREBROVASCULAR DISORDERS/
44	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
45	exp HYDROCEPHALUS/
46	hydrocephal$.ti,ab.
47	SHAKEN BABY SYNDROME/
48	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
49	or/28-48
50	exp PARALYSIS/
51	HEMIPLEGIA/
52	exp PARAPLEGIA/
53	QUADRIPLEGIA/
54	exp PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	(unilateral$ or bilateral$).ti,ab.
58	or/50-57
59	and/27,58
60	and/49,58
61	and/27,49

62	or/59-61
63	exp ORTHOTIC DEVICES/
64	BRACES/
65	SPLINTS/
66	exp CLOTHING/
67	SHOES/
68	(orthos$ or orthotic$).ti,ab.
69	(splint$ or brace$ or bracing or cuff$).ti,ab.
70	AFO.ti,ab.
71	(GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS).ti,ab.
72	(KAFO or HKAFO or THKAFO).ti,ab.
73	(TLSO or CTLSO).ti,ab.
74	(insole$ or shoe$ or boot$ or footwear$ or insert$).ti,ab.
75	(heel adj3 (cup$ or cushion$ or flare$ or wedge$ or elevat$ or lift$ or extend$ or thomas$ or counter$ or relief$)).ti,ab.
76	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (rocker$ or metatarsal or wedge$ or flare$)).ti,ab.
77	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (steel or elevat$ or excavat$ or scaphoid or crest$)).ti,ab.
78	((flare$ or wedge$) adj3 (medial$ or lateral$)).ti,ab.
79	(contracture correction device$ or CCD).ti,ab.
80	(lycra or spandex or elastane).ti,ab.
81	(body suit$ or body?suit$).ti,ab.
82	(sleeved vest$ or glove$).ti,ab.
83	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (garment$ or sleeve$ or splint$ or sling$ or sock$ or vest$)).ti,ab.
84	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (stocking$ or shorts or leggings or suit$ or brace$ or cuff$)).ti,ab.
85	((toeoff or benik or matrix) adj3 (splint$ or support$ or brace$ or cuff$)).ti,ab.
86	piedro$.ti,ab.
87	or/63-86
88	and/62,87
89	limit 88 to english language
90	limit 89 to animals
91	limit 89 to (animals and humans)
92	90 not 91
93	89 not 92
94	and/7,93

1
2

EBM Reviews - Cochrane Central Register of Controlled Trials

SPAST_Q2_orthoses_economic_cctr_130910

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	MUSCLE SPASTICITY/
9	exp SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	exp DYSKINESIAS/
14	dyskinesi$.ti,ab.
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	exp DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	(chorea$ or choreic$ or choreo$).ti,ab.
20	exp ATHETOSIS/
21	(athetos$ or athetoid).ti,ab.
22	MUSCLE WEAKNESS/
23	(musc$ adj3 weak$).ti,ab.
24	exp ATAXIA/
25	atax$.ti,ab.
26	upper motor neuron? lesion$.ti,ab.
27	or/8-26
28	exp BRAIN INJURIES/
29	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
30	ABI.ti,ab.
31	static encephalopath$.ti,ab.
32	CEREBRAL PALSY/
33	(cerebral adj3 pals$).ti,ab.
34	exp MENINGITIS/

35	(meningitis or meningococcal).ti,ab.
36	exp CRANIOCEREBRAL TRAUMA/
37	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp ENCEPHALITIS/
39	encephaliti$.ti,ab.
40	exp STROKE/
41	stroke$.ti,ab.
42	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
43	exp CEREBROVASCULAR DISORDERS/
44	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
45	exp HYDROCEPHALUS/
46	hydrocephal$.ti,ab.
47	SHAKEN BABY SYNDROME/
48	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
49	or/28-48
50	exp PARALYSIS/
51	HEMIPLEGIA/
52	exp PARAPLEGIA/
53	QUADRIPLEGIA/
54	exp PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	(unilateral$ or bilateral$).ti,ab.
58	or/50-57
59	and/27,58
60	and/49,58
61	and/27,49
62	or/59-61
63	exp ORTHOTIC DEVICES/
64	BRACES/
65	SPLINTS/
66	exp CLOTHING/
67	SHOES/
68	(orthos$ or orthotic$).ti,ab.
69	(splint$ or brace$ or bracing or cuff$).ti,ab.
70	AFO.ti,ab.

71	(GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS).ti,ab.
72	(KAFO or HKAFO or THKAFO).ti,ab.
73	(TLSO or CTLSO).ti,ab.
74	(insole$ or shoe$ or boot$ or footwear$ or insert$).ti,ab.
75	(heel adj3 (cup$ or cushion$ or flare$ or wedge$ or elevat$ or lift$ or extend$ or thomas$ or counter$ or relief$)).ti,ab.
76	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (rocker$ or metatarsal or wedge$ or flare$)).ti,ab.
77	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (steel or elevat$ or excavat$ or scaphoid or crest$)).ti,ab.
78	((flare$ or wedge$) adj3 (medial$ or lateral$)).ti,ab.
79	(contracture correction device$ or CCD).ti,ab.
80	(lycra or spandex or elastane).ti,ab.
81	(body suit$ or body?suit$).ti,ab.
82	(sleeved vest$ or glove$).ti,ab.
83	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (garment$ or sleeve$ or splint$ or sling$ or sock$ or vest$)).ti,ab.
84	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (stocking$ or shorts or leggings or suit$ or brace$ or cuff$)).ti,ab.
85	((toeoff or benik or matrix) adj3 (splint$ or support$ or brace$ or cuff$)).ti,ab.
86	piedro$.ti,ab.
87	or/63-86
88	and/62,87
89	and/7,88

EBM Reviews - Health Technology Assessment

SPAST_Q2_orthoses_economic_hta_130910

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).tw.
5	hyperton$.tw.
6	exp DYSKINESIAS/
7	dyskinesi$.tw.
8	((abnormal$ or involuntar$) adj2 mov$).tw.
9	exp DYSTONIA/
10	dystoni$.tw.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).tw.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).tw.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).tw.
17	exp ATAXIA/
18	atax$.tw.
19	upper motor neuron? lesion$.tw.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.
23	ABI.tw.
24	static encephalopath$.tw.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).tw.
27	exp MENINGITIS/
28	(meningitis or meningococcal).tw.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.
31	exp ENCEPHALITIS/
32	encephaliti$.tw.
33	exp STROKE/

34	stroke$.tw.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.
38	exp HYDROCEPHALUS/
39	hydrocephal$.tw.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).tw.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw.
50	(unilateral$ or bilateral$).tw.
51	or/43-50
52	and/20,51
53	and/42,51
54	and/20,42
55	or/52-54
56	exp ORTHOTIC DEVICES/
57	BRACES/
58	SPLINTS/
59	exp CLOTHING/
60	SHOES/
61	(orthos$ or orthotic$).tw.
62	(splint$ or brace$ or bracing or cuff$).tw.
63	AFO.tw.
64	(GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS).tw.
65	(KAFO or HKAFO or THKAFO).tw.
66	(TLSO or CTLSO).tw.
67	(insole$ or shoe$ or boot$ or footwear$ or insert$).tw.
68	(heel adj3 (cup$ or cushion$ or flare$ or wedge$ or elevat$ or lift$ or extend$ or thomas$ or counter$ or relief$)).tw.
69	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (rocker$ or metatarsal or wedge$ or

	flare$)).tw.
70	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (steel or elevat$ or excavat$ or scaphoid or crest$)).tw.
71	((flare$ or wedge$) adj3 (medial$ or lateral$)).tw.
72	(contracture correction device$ or CCD).tw.
73	(lycra or spandex or elastane).tw.
74	(body suit$ or body?suit$).tw.
75	(sleeved vest$ or glove$).tw.
76	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (garment$ or sleeve$ or splint$ or sling$ or sock$ or vest$)).tw.
77	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (stocking$ or shorts or leggings or suit$ or brace$ or cuff$)).tw.
78	((toeoff or benik or matrix) adj3 (splint$ or support$ or brace$ or cuff$)).tw.
79	piedro$.tw.
80	or/56-79
81	and/55,80

1
2

EBM Reviews - NHS Economic Evaluation Database

SPAST_Q2_orthoses_economic_nhseed_130910

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).tw.
5	hyperton$.tw.
6	exp DYSKINESIAS/
7	dyskinesi$.tw.
8	((abnormal$ or involuntar$) adj2 mov$).tw.
9	exp DYSTONIA/
10	dystoni$.tw.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).tw.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).tw.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).tw.
17	exp ATAXIA/
18	atax$.tw.
19	upper motor neuron? lesion$.tw.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.
23	ABI.tw.
24	static encephalopath$.tw.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).tw.
27	exp MENINGITIS/
28	(meningitis or meningococcal).tw.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.
31	exp ENCEPHALITIS/
32	encephaliti$.tw.
33	exp STROKE/

34	stroke$.tw.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.
38	exp HYDROCEPHALUS/
39	hydrocephal$.tw.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).tw.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw.
50	(unilateral$ or bilateral$).tw.
51	or/43-50
52	and/20,51
53	and/42,51
54	and/20,42
55	or/52-54
56	exp ORTHOTIC DEVICES/
57	BRACES/
58	SPLINTS/
59	exp CLOTHING/
60	SHOES/
61	(orthos$ or orthotic$).tw.
62	(splint$ or brace$ or bracing or cuff$).tw.
63	AFO.tw.
64	(GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS).tw.
65	(KAFO or HKAFO or THKAFO).tw.
66	(TLSO or CTLSO).tw.
67	(insole$ or shoe$ or boot$ or footwear$ or insert$).tw.
68	(heel adj3 (cup$ or cushion$ or flare$ or wedge$ or elevat$ or lift$ or extend$ or thomas$ or counter$ or relief$)).tw.
69	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (rocker$ or metatarsal or wedge$ or

	flare$)).tw.
70	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (steel or elevat$ or excavat$ or scaphoid or crest$)).tw.
71	((flare$ or wedge$) adj3 (medial$ or lateral$)).tw.
72	(contracture correction device$ or CCD).tw.
73	(lycra or spandex or elastane).tw.
74	(body suit$ or body?suit$).tw.
75	(sleeved vest$ or glove$).tw.
76	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (garment$ or sleeve$ or splint$ or sling$ or sock$ or vest$)).tw.
77	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (stocking$ or shorts or leggings or suit$ or brace$ or cuff$)).tw.
78	((toeoff or benik or matrix) adj3 (splint$ or support$ or brace$ or cuff$)).tw.
79	piedro$.tw.
80	or/56-79
81	and/55,80

EMBASE 1980+

SPAST_Q2_orthoses_economic_embase_130910

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	SPASTICITY/
9	exp MUSCLE SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	DYSKINESIA/
14	dyskinesi$.ti,ab.
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	CHOREOATHETOSIS/
20	ATHETOSIS/
21	(chorea$ or choreic$ or choreo$).ti,ab.
22	(athetos$ or athetoid).ti,ab.
23	exp MUSCLE WEAKNESS/
24	(musc$ adj3 weak$).ti,ab.
25	exp ATAXIA/
26	atax$.ti,ab.
27	upper motor neuron? lesion$.ti,ab.
28	or/8-27
29	exp BRAIN INJURY/
30	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
31	ABI.ti,ab.
32	static encephalopath$.ti,ab.
33	CEREBRAL PALSY/
34	(cerebral adj3 pals$).ti,ab.

35	exp MENINGITIS/
36	(meningitis or meningococcal).ti,ab.
37	exp HEAD INJURY/
38	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
39	exp ENCEPHALITIS/
40	encephaliti$.ti,ab.
41	STROKE/
42	stroke$.ti,ab.
43	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
44	exp CEREBROVASCULAR DISEASE/
45	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
46	exp HYDROCEPHALUS/
47	hydrocephal$.ti,ab.
48	SHAKEN BABY SYNDROME/
49	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
50	or/29-49
51	exp PARALYSIS/ or MONOPLEGIA/ or HEMIPLEGIA/ or PARAPLEGIA/ or QUADRIPLEGIA/
52	SPASTIC PARAPLEGIA/
53	PARESIS/ or MONOPARESIS/ or HEMIPARESIS/
54	SPASTIC PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	(unilateral$ or bilateral$).ti,ab.
58	or/51-57
59	and/28,58
60	and/50,58
61	and/28,50
62	or/59-61
63	ORTHOTICS/
64	ORTHOSIS/
65	FOOT ORTHOSIS/
66	BRACE/ or ORTHOPEDIC SHOE/ or SPLINT/
67	exp CLOTHING/
68	(orthos$ or orthotic$).ti,ab.
69	(splint$ or brace$ or bracing or cuff$).ti,ab.

70	AFO.ti,ab.
71	(GRAFO or DAFO or HAFO or SAFO or RAFO or SWASH or PLS).ti,ab.
72	(KAFO or HKAFO or THKAFO).ti,ab.
73	(TLSO or CTLSO).ti,ab.
74	(insole$ or shoe$ or boot$ or footwear$ or insert$).ti,ab.
75	(heel adj3 (cup$ or cushion$ or flare$ or wedge$ or elevat$ or lift$ or extend$ or thomas$ or counter$ or relief$)).ti,ab.
76	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (rocker$ or metatarsal or wedge$ or flare$)).ti,ab.
77	((sole$ or bar$ or shoe$ or pad$ or toe$) adj3 (steel or elevat$ or excavat$ or scaphoid or crest$)).ti,ab.
78	((flare$ or wedge$) adj3 (medial$ or lateral$)).ti,ab.
79	(contracture correction device$ or CCD).ti,ab.
80	(lycra or spandex or elastane).ti,ab.
81	(body suit$ or body?suit$).ti,ab.
82	(sleeved vest$ or glove$).ti,ab.
83	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (garment$ or sleeve$ or splint$ or sling$ or sock$ or vest$)).ti,ab.
84	((support$ or pressure or dynamic or stretch$ or compress$) adj3 (stocking$ or shorts or leggings or suit$ or brace$ or cuff$)).ti,ab.
85	((toeoff or benik or matrix) adj3 (splint$ or support$ or brace$ or cuff$)).ti,ab.
86	piedro$.ti,ab.
87	or/63-86
88	and/62,87
89	limit 88 to english language
90	and/7,89

Question 3 What is the effectiveness of oral medications including baclofen, benzodiazepines (diazepam, nitrazepam, clonazepam), tizanidine, dantrolene, clonidine, trihexyphenidyl, tetrabenazine and levodopa in the treatment of spasticity and other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder in babies, children and young people?

Ovid MEDLINE(R) 1950+

SPAST_Q3_oral_drugs_medline_290610

#	Searches
1	randomized controlled trial.pt.
2	controlled clinical trial.pt.
3	DOUBLE BLIND METHOD/
4	SINGLE BLIND METHOD/

5	RANDOM ALLOCATION/
6	RANDOMIZED CONTROLLED TRIALS/
7	or/1-6
8	((single or double or triple or treble) adj5 (blind$ or mask$)).tw,sh.
9	clinical trial.pt.
10	exp CLINICAL TRIAL/
11	exp CLINICAL TRIALS AS TOPIC/
12	(clinic$ adj5 trial$).tw,sh.
13	PLACEBOS/
14	placebo$.tw,sh.
15	random$.tw,sh.
16	or/8-15
17	or/7,16
18	META ANALYSIS/
19	META ANALYSIS AS TOPIC/
20	meta analysis.pt.
21	(metaanaly$ or meta-analy$ or (meta adj analy$)).tw,sh.
22	(systematic$ adj5 (review$ or overview$)).tw,sh.
23	(methodologic$ adj5 (review$ or overview$)).tw,sh.
24	or/18-23
25	review$.pt.
26	(medline or medlars or embase or cinahl or cochrane or psycinfo or psychinfo or psychlit or psyclit or "web of science" or "science citation" or scisearch).tw.
27	((hand or manual$) adj2 search$).tw.
28	(electronic database$ or bibliographic database$ or computeri?ed database$ or online database$).tw,sh.
29	(pooling or pooled or mantel haenszel).tw,sh.
30	(peto or dersimonian or der simonian or fixed effect).tw,sh.
31	or/26-30
32	and/25,31
33	or/24,32
34	letter.pt.
35	case report.tw.
36	comment.pt.
37	editorial.pt.
38	historical article.pt.
39	or/34-38
40	17 not 39
41	33 not 39

42	or/40-41
43	MUSCLE SPASTICITY/
44	exp SPASM/
45	exp MUSCLE HYPERTONIA/
46	(spastic$ or spasm$).ti,ab.
47	hyperton$.ti,ab.
48	exp DYSKINESIAS/
49	dyskinesi$.ti,ab.
50	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
51	exp DYSTONIA/
52	dystoni$.ti,ab.
53	exp CHOREA/
54	(chorea$ or choreic$ or choreo$).ti,ab.
55	exp ATHETOSIS/
56	(athetos$ or athetoid).ti,ab.
57	MUSCLE WEAKNESS/
58	(musc$ adj3 weak$).ti,ab.
59	exp ATAXIA/
60	atax$.ti,ab.
61	upper motor neuron? lesion$.ti,ab.
62	or/43-61
63	exp BRAIN INJURIES/
64	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
65	ABI.ti,ab.
66	static encephalopath$.ti,ab.
67	CEREBRAL PALSY/
68	(cerebral adj3 pals$).ti,ab.
69	exp MENINGITIS/
70	(meningitis or meningococcal).ti,ab.
71	exp CRANIOCEREBRAL TRAUMA/
72	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
73	exp ENCEPHALITIS/
74	encephaliti$.ti,ab.
75	exp STROKE/
76	stroke$.ti,ab.
77	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
78	exp CEREBROVASCULAR DISORDERS/

79	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
80	exp HYDROCEPHALUS/
81	hydrocephal$.ti,ab.
82	SHAKEN BABY SYNDROME/
83	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
84	or/63-83
85	exp PARALYSIS/
86	HEMIPLEGIA/
87	exp PARAPLEGIA/
88	QUADRIPLEGIA/
89	exp PARESIS/
90	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
91	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
92	or/85-91
93	and/62,92
94	and/84,92
95	and/62,84
96	or/93-95
97	BACLOFEN/
98	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.
99	exp BENZODIAZEPINES/
100	benzodiazepine$.ti,ab.
101	exp BENZODIAZEPINONES/
102	exp MUSCLE RELAXANTS, CENTRAL/
103	exp DIAZEPAM/
104	(diazepam or valium or rimapam or dialar or diazemuls or stesolid or valclair).ti,ab.
105	(nitrazepam or nitrodiazepam or mogadon or somnite or remnos).ti,ab.
106	(clonazepam or rivotril).ti,ab.
107	(tizanidine or zanaflex).ti,ab.
108	DANTROLENE/
109	(dantrolene or dantrium).ti,ab.
110	LEVODOPA/
111	(levodopa or l dopa or l?dopa).ti,ab.
112	(levopa or dopar or larodopa or dopaflex).ti,ab.
113	(co beneldopa or co?beneldopa or madopar).ti,ab.
114	(co careldopa or co?careldopa or sinemet or duodopa or caramet or stalevo or lecado).ti,ab.

115	TRIHEXYPHENIDYL/
116	(tr#hex#phen#d#l or THP or benzhexol or broflex or artane).ti,ab.
117	TETRABENAZINE/
118	(tetrabenazin$ or xenazine or nitoman).ti,ab.
119	CLONIDINE/
120	(clonidine or catapres or dixarit).ti,ab.
121	or/97-120
122	and/96,121
123	limit 122 to english language
124	limit 123 to animals
125	limit 123 to (animals and humans)
126	124 not 125
127	123 not 126
128	and/42,127

1
2

Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations

SPAST_Q3_oral_drugs_medline_in-process_250610

#	Searches
1	(spastic$ or spasm$).ti,ab.
2	hyperton$.ti,ab.
3	dyskinesi$.ti,ab.
4	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
5	dystoni$.ti,ab.
6	(chorea$ or choreic$ or choreo$).ti,ab.
7	(athetos$ or athetoid).ti,ab.
8	(musc$ adj3 weak$).ti,ab.
9	atax$.ti,ab.
10	upper motor neuron? lesion$.ti,ab.
11	or/1-10
12	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
13	ABI.ti,ab.
14	static encephalopath$.ti,ab.
15	(cerebral adj3 pals$).ti,ab.
16	(meningitis or meningococcal).ti,ab.
17	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
18	encephaliti$.ti,ab.
19	stroke$.ti,ab.
20	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
21	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
22	hydrocephal$.ti,ab.
23	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
24	or/12-23
25	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
26	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
27	or/25-26
28	and/11,27
29	and/24,27
30	and/11,24
31	or/28-30

32	benzodiazepine$.ti,ab.
33	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.
34	(diazepam or valium or rimapam or dialar or diazemuls or stesolid or valclair).ti,ab.
35	(nitrazepam or nitrodiazepam or mogadon or somnite or remnos).ti,ab.
36	(clonazepam or rivotril).ti,ab.
37	(tizanidine or zanaflex).ti,ab.
38	(dantrolene or dantrium).ti,ab.
39	(levodopa or l dopa or l?dopa).ti,ab.
40	(levopa or dopar or larodopa or dopaflex).ti,ab.
41	(co beneldopa or co?beneldopa or madopar).ti,ab.
42	(co careldopa or co?careldopa or sinemet or duodopa or caramet or stalevo or lecado).ti,ab.
43	(tr#hex#phen#d#l or THP or benzhexol or broflex or artane).ti,ab.
44	(tetrabenazin$ or xenazine or nitoman).ti,ab.
45	(clonidine or catapres or dixarit).ti,ab.
46	or/32-45
47	and/31,46

EBM Reviews - Cochrane Central Register of Controlled Trials

SPAST_Q3_oral_drugs_cctr_250610

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	exp DYSKINESIAS/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	exp DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).ti,ab.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).ti,ab.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).ti,ab.
17	exp ATAXIA/
18	atax$.ti,ab.
19	upper motor neuron? lesion$.ti,ab.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
23	ABI.ti,ab.
24	static encephalopath$.ti,ab.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).ti,ab.
27	exp MENINGITIS/
28	(meningitis or meningococcal).ti,ab.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
31	exp ENCEPHALITIS/
32	encephaliti$.ti,ab.
33	exp STROKE/

34	stroke$.ti,ab.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp HYDROCEPHALUS/
39	hydrocephal$.ti,ab.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	BACLOFEN/
56	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.
57	exp BENZODIAZEPINES/
58	benzodiazepine$.ti,ab.
59	exp BENZODIAZEPINONES/
60	exp MUSCLE RELAXANTS, CENTRAL/
61	exp DIAZEPAM/
62	(diazepam or valium or rimapam or dialar or diazemuls or stesolid or valclair).ti,ab.
63	(nitrazepam or nitrodiazepam or mogadon or somnite or remnos).ti,ab.
64	(clonazepam or rivotril).ti,ab.
65	(tizanidine or zanaflex).ti,ab.
66	DANTROLENE/
67	(dantrolene or dantrium).ti,ab.
68	LEVODOPA/
69	(levodopa or l dopa or l?dopa).ti,ab.

70	(levopa or dopar or larodopa or dopaflex).ti,ab.
71	(co beneldopa or co?beneldopa or madopar).ti,ab.
72	(co careldopa or co?careldopa or sinemet or duodopa or caramet or stalevo or lecado).ti,ab.
73	TRIHEXYPHENIDYL/
74	(tr#hex#phen#d#l or THP or benzhexol or broflex or artane).ti,ab.
75	TETRABENAZINE/
76	(tetrabenazin$ or xenazine or nitoman).ti,ab.
77	CLONIDINE/
78	(clonidine or catapres or dixarit).ti,ab.
79	or/55-78
80	and/54,79

1

2

EBM Reviews - Cochrane Database of Systematic Reviews 2005+, EBM Reviews - Database of Abstracts of Reviews of Effects

SPAST_Q3_oral_drugs_cdsrdare_250610

#	Searches
1	MUSCLE SPASTICITY.kw.
2	SPASM.kw.
3	MUSCLE HYPERTONIA.kw.
4	(spastic$ or spasm$).tw,tx.
5	hyperton$.tw,tx.
6	DYSKINESIAS.kw.
7	dyskinesi$.tw,tx.
8	((abnormal$ or involuntar$) adj2 mov$).tw,tx.
9	DYSTONIA.kw.
10	dystoni$.tw,tx.
11	CHOREA.kw.
12	(chorea$ or choreic$ or choreo$).tw,tx.
13	ATHETOSIS.kw.
14	(athetos$ or athetoid).tw,tx.
15	MUSCLE WEAKNESS.kw.
16	(musc$ adj3 weak$).tw,tx.
17	ATAXIA.kw.
18	atax$.tw,tx.
19	upper motor neuron? lesion$.tw,tx.
20	or/1-19
21	BRAIN INJURIES.kw.
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw,tx.
23	ABI.tw,tx.
24	static encephalopath$.tw,tx.
25	CEREBRAL PALSY.kw.
26	(cerebral adj3 pals$).tw,tx.
27	MENINGITIS.kw.
28	(meningitis or meningococcal).tw,tx.
29	CRANIOCEREBRAL TRAUMA.kw.
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw,tx.
31	ENCEPHALITIS.kw.
32	encephaliti$.tw,tx.
33	STROKE.kw.

34	stroke$.tw,tx.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw,tx.
36	CEREBROVASCULAR DISORDERS.kw.
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw,tx.
38	HYDROCEPHALUS.kw.
39	hydrocephal$.tw,tx.
40	SHAKEN BABY SYNDROME.kw.
41	(shak$ adj3 (injur$ or syndrome$)).tw,tx.
42	or/21-41
43	PARALYSIS.kw.
44	HEMIPLEGIA.kw.
45	PARAPLEGIA.kw.
46	QUADRIPLEGIA.kw.
47	PARESIS.kw.
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw,tx.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw,tx.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	BACLOFEN.kw.
56	(baclofen or baclophen or lioresal or spinax or lyflex).tw,tx.
57	BENZODIAZEPINES.kw.
58	benzodiazepine$.tw,tx.
59	BENZODIAZEPINONES.kw.
60	MUSCLE RELAXANTS, CENTRAL.kw.
61	DIAZEPAM.kw.
62	(diazepam or valium or rimapam or dialar or diazemuls or stesolid or valclair).tw,tx.
63	(nitrazepam or nitrodiazepam or mogadon or somnite or remnos).tw,tx.
64	(clonazepam or rivotril).tw,tx.
65	(tizanidine or zanaflex).tw,tx.
66	DANTROLENE.kw.
67	(dantrolene or dantrium).tw,tx.
68	LEVODOPA.kw.
69	(levodopa or l dopa or l?dopa).tw,tx.

70	(levopa or dopar or larodopa or dopaflex).tw,tx.
71	(co beneldopa or co?beneldopa or madopar).tw,tx.
72	(co careldopa or co?careldopa or sinemet or duodopa or caramet or stalevo or lecado).tw,tx.
73	TRIHEXYPHENIDYL.kw.
74	(tr#hex#phen#d#l or THP or benzhexol or broflex or artane).tw,tx.
75	TETRABENAZINE.kw.
76	(tetrabenazin$ or xenazine or nitoman).tw,tx.
77	CLONIDINE.kw.
78	(clonidine or catapres or dixarit).tw,tx.
79	or/55-78
80	and/54,79

1
2

EMBASE 1980+

SPAST_Q3_oral_drugs_embase_290610

#	Searches
1	CLINICAL TRIALS/
2	(clinic$ adj5 trial$).ti,ab,sh.
3	SINGLE BLIND PROCEDURE/
4	DOUBLE BLIND PROCEDURE/
5	RANDOM ALLOCATION/
6	CROSSOVER PROCEDURE/
7	PLACEBO/
8	placebo$.ti,ab,sh.
9	random$.ti,ab,sh.
10	RANDOMIZED CONTROLLED TRIALS/
11	((single or double or triple or treble) adj (blind$ or mask$)).ti,ab,sh.
12	randomi?ed control$ trial$.tw.
13	or/1-12
14	META ANALYSIS/
15	((meta adj analy$) or metaanalys$ or meta-analy$).ti,ab,sh.
16	(systematic$ adj5 (review$ or overview$)).ti,sh,ab.
17	(methodologic$ adj5 (review$ or overview$)).ti,ab,sh.
18	or/14-17
19	review.pt.
20	(medline or medlars or embase).ab.
21	(scisearch or science citation index).ab.
22	(psychlit or psyclit or psychinfo or psycinfo or cinahl or cochrane).ab.
23	((hand or manual$) adj2 search$).tw.
24	(electronic database$ or bibliographic database$ or computeri?ed database$ or online database$).tw.
25	(pooling or pooled or mantel haenszel).tw.
26	(peto or dersimonian or "der simonian" or fixed effect).tw.
27	or/20-26
28	and/19,27
29	or/18,28
30	(book or conference paper or editorial or letter or note or proceeding or short survey).pt.
31	13 not 30
32	29 not 31
33	or/31-32

34	SPASTICITY/
35	exp MUSCLE SPASM/
36	exp MUSCLE HYPERTONIA/
37	(spastic$ or spasm$).ti,ab.
38	hyperton$.ti,ab.
39	DYSKINESIA/
40	dyskinesi$.ti,ab.
41	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
42	DYSTONIA/
43	dystoni$.ti,ab.
44	exp CHOREA/
45	CHOREOATHETOSIS/
46	ATHETOSIS/
47	(chorea$ or choreic$ or choreo$).ti,ab.
48	(athetos$ or athetoid).ti,ab.
49	exp MUSCLE WEAKNESS/
50	(musc$ adj3 weak$).ti,ab.
51	exp ATAXIA/
52	atax$.ti,ab.
53	upper motor neuron? lesion$.ti,ab.
54	or/34-53
55	exp BRAIN INJURY/
56	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
57	ABI.ti,ab.
58	static encephalopath$.ti,ab.
59	CEREBRAL PALSY/
60	(cerebral adj3 pals$).ti,ab.
61	exp MENINGITIS/
62	(meningitis or meningococcal).ti,ab.
63	exp HEAD INJURY/
64	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
65	exp ENCEPHALITIS/
66	encephaliti$.ti,ab.
67	STROKE/
68	stroke$.ti,ab.
69	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
70	exp CEREBROVASCULAR DISEASE/

71	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
72	exp HYDROCEPHALUS/
73	hydrocephal$.ti,ab.
74	SHAKEN BABY SYNDROME/
75	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
76	or/55-75
77	exp PARALYSIS/ or MONOPLEGIA/ or HEMIPLEGIA/ or PARAPLEGIA/ or QUADRIPLEGIA/
78	SPASTIC PARAPLEGIA/
79	PARESIS/ or MONOPARESIS/ or HEMIPARESIS/
80	SPASTIC PARESIS/
81	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
82	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
83	or/77-82
84	and/54,83
85	and/76,83
86	and/54,76
87	or/84-86
88	BACLOFEN/
89	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.
90	BENZODIAZEPINE/
91	benzodiazepine$.ti,ab.
92	exp BENZODIAZEPINE DERIVATIVE/
93	exp CENTRAL MUSCLE RELAXANT/
94	DIAZEPAM/
95	(diazepam or valium or rimapam or dialar or diazemuls or stesolid or valclair).ti,ab.
96	NITRAZEPAM/
97	(nitrazepam or nitrodiazepam or mogadon or somnite or remnos).ti,ab.
98	CLONAZEPAM/
99	(clonazepam or rivotril).ti,ab.
100	TIZANIDINE/
101	(tizanidine or zanaflex).ti,ab.
102	DANTROLENE/
103	(dantrolene or dantrium).ti,ab.
104	LEVODOPA/
105	BENSERAZIDE PLUS LEVODOPA/ or CO BENELDOPA/
106	CARBIDOPA PLUS LEVODOPA/ or CO CARELDOPA/

107	(levodopa or l dopa or l?dopa).ti,ab.
108	(levopa or dopar or larodopa or dopaflex).ti,ab.
109	(co beneldopa or co?beneldopa or madopar).ti,ab.
110	(co careldopa or co?careldopa or sinemet or duodopa or caramet or stalevo or lecado).ti,ab.
111	TRIHEXYPHENIDYL/
112	(tr#hex#phen#d#l or THP or benzhexol or broflex or artane).ti,ab.
113	TETRABENAZINE/
114	(tetrabenazin$ or xenazine or nitoman).ti,ab.
115	CLONIDINE/
116	(clonidine or catapres or dixarit).ti,ab.
117	or/88-116
118	and/87,117
119	limit 118 to english language
120	and/33,119

CINAHL 1981+

SPAST_Q3_oral_drugs_cinahl_280610

#	Query	Limiters/Expanders
S145	S144	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase
S144	S118 and S143	Search modes - Boolean/Phrase
S143	S119 or S120 or S121 or S122 or S123 or S124 or S125 or S126 or S127 or S128 or S129 or S130 or S131 or S132 or S133 or S134 or S135 or S136 or S137 or S138 or S139 or S140 or S141 or S142	Search modes - Boolean/Phrase
S142	TI (clonidine or catapres or dixarit) or AB (clonidine or catapres or dixarit)	Search modes - Boolean/Phrase
S141	MH CLONIDINE	Search modes - Boolean/Phrase
S140	TI (tetrabenazin* or xenazine or nitoman) or AB (tetrabenazin* or xenazine or nitoman)	Search modes - Boolean/Phrase
S139	TI (tr?hex?phen?d?l or THP or benzhexol or broflex or artane) or AB (tr?hex?phen?d?l or THP or benzhexol or broflex or artane)	Search modes - Boolean/Phrase
S138	TI (duodopa or caramet or stalevo or lecado) or AB (duodopa or caramet or stalevo or lecado)	Search modes - Boolean/Phrase
S137	TI (co-careldopa or cocareldopa or sinemet) or AB (co-careldopa or cocareldopa or sinemet)	Search modes - Boolean/Phrase
S136	TI (co-beneldopa or cobeneldopa or madopar) or AB (co-beneldopa or cobeneldopa or madopar)	Search modes - Boolean/Phrase
S135	TI (levopa or dopar or larodopa or dopaflex) or AB (levopa or dopar or larodopa or dopaflex)	Search modes - Boolean/Phrase
S134	TI (levodopa or l-dopa or ldopa) or AB (levodopa or l-dopa or ldopa)	Search modes - Boolean/Phrase
S133	MH LEVODOPA	Search modes - Boolean/Phrase
S132	TI (dantrolene or dantrium) or AB (dantrolene or dantrium)	Search modes - Boolean/Phrase
S131	MH DANTROLENE	Search modes - Boolean/Phrase
S130	TI (tizanidine or zanaflex) or AB (tizanidine or zanaflex)	Search modes - Boolean/Phrase

S129	TI (clonazepam or rivotril) or AB (clonazepam or rivotril)	Search modes - Boolean/Phrase
S128	MH CLONAZEPAM	Search modes - Boolean/Phrase
S127	TI (nitrazepam or nitrodiazepam or mogadon or somnite or remnos) or AB (nitrazepam or nitrodiazepam or mogadon or somnite or remnos)	Search modes - Boolean/Phrase
S126	TI (diazemuls or stesolid or valclair) or AB (diazemuls or stesolid or valclair)	Search modes - Boolean/Phrase
S125	TI (diazepam or valium or rimapam or dialar) or AB (diazepam or valium or rimapam or dialar)	Search modes - Boolean/Phrase
S124	MH DIAZEPAM	Search modes - Boolean/Phrase
S123	MH MUSCLE RELAXANTS, CENTRAL+	Search modes - Boolean/Phrase
S122	TI (benzodiazepine*) or AB (benzodiazepine*)	Search modes - Boolean/Phrase
S121	MH ANTIANXIETY AGENTS, BENZODIAZEPINE+	Search modes - Boolean/Phrase
S120	TI (baclofen or baclophen or lioresal or spinax or lyflex) or AB (baclofen or baclophen or lioresal or spinax or lyflex)	Search modes - Boolean/Phrase
S119	MH BACLOFEN	Search modes - Boolean/Phrase
S118	S115 or S116 or S117	Search modes - Boolean/Phrase
S117	S105 and S114	Search modes - Boolean/Phrase
S116	S18 and S114	Search modes - Boolean/Phrase
S115	S18 and S105	Search modes - Boolean/Phrase
S114	S106 or S107 or S108 or S109 or S110 or S111 or S112 or S113	Search modes - Boolean/Phrase
S113	AB (monopares* or dipares* or hemipares* or quadripares* or tetrapares*)	Search modes - Boolean/Phrase
S112	TI (monopares* or dipares* or hemipares* or quadripares* or tetrapares*)	Search modes - Boolean/Phrase
S111	AB (monoplegi* or diplegi* or hemiplegi* or quadriplegi* or tetraplegi*)	Search modes - Boolean/Phrase
S110	TI (monoplegi* or diplegi* or hemiplegi* or quadriplegi* or tetraplegi*)	Search modes - Boolean/Phrase
S109	MH QUADRIPLEGIA	Search modes -

		Boolean/Phrase
S108	MH PARAPLEGIA	Search modes - Boolean/Phrase
S107	MH HEMIPLEGIA	Search modes - Boolean/Phrase
S106	MH PARALYSIS+	Search modes - Boolean/Phrase
S105	S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32 or S33 or S34 or S35 or S36 or S37 or S38 or S39 or S40 or S41 or S42 or S43 or S44 or S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58 or S59 or S60 or S61 or S62 or S63 or S64 or S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73 or S74 or S75 or S76 or S77 or S78 or S79 or S80 or S81 or S82 or S83 or S84 or S85 or S86 or S87 or S88 or S89 or S90 or S91 or S92 or S93 or S94 or S95 or S96 or S97 or S98 or S99 or S100 or S101 or S102 or S103 or S104	Search modes - Boolean/Phrase
S104	TI (shak* N3 syndrome*) or AB (shak* N3 syndrome*)	Search modes - Boolean/Phrase
S103	TI (shak* N3 injur*) or AB (shak* N3 injur*)	Search modes - Boolean/Phrase
S102	MH SHAKEN BABY SYNDROME	Search modes - Boolean/Phrase
S101	TI (hydrocephal*) or AB (hydrocephal*)	Search modes - Boolean/Phrase
S100	MH HYDROCEPHALUS+	Search modes - Boolean/Phrase
S99	TI (cerebrovascular N2 insult*) or AB (cerebrovascular N2 insult*)	Search modes - Boolean/Phrase
S98	TI (cerebrovascular N2 disturb*) or AB (cerebrovascular N2 disturb*)	Search modes - Boolean/Phrase
S97	TI (cerebrovascular N2 damage*) or AB (cerebrovascular N2 damage*)	Search modes - Boolean/Phrase
S96	TI (cerebrovascular N2 occlusion*) or AB (cerebrovascular N2 occlusion*)	Search modes - Boolean/Phrase
S95	TI (cerebrovascular N2 insufficien*) or AB (cerebrovascular N2 insufficien*)	Search modes - Boolean/Phrase
S94	TI (cerebrovascular N2 disease*) or AB (cerebrovascular N2 disease*)	Search modes - Boolean/Phrase
S93	TI (cerebrovascular N2 disorder*) or AB (cerebrovascular N2 disorder*)	Search modes - Boolean/Phrase
S92	TI (intracranial vascular N2 insult*) or AB (intracranial	Search modes -

	vascular N2 insult*)	Boolean/Phrase
S91	TI (intracranial vascular N2 disturb*) or AB (intracranial vascular N2 disturb*)	Search modes - Boolean/Phrase
S90	TI (intracranial vascular N2 damage*) or AB (intracranial vascular N2 damage*)	Search modes - Boolean/Phrase
S89	TI (intracranial vascular N2 occlusion*) or AB (intracranial vascular N2 occlusion*)	Search modes - Boolean/Phrase
S88	TI (intracranial vascular N2 insufficien*) or AB (intracranial vascular N2 insufficien*)	Search modes - Boolean/Phrase
S87	TI (intracranial vascular N2 disease*) or AB (intracranial vascular N2 disease*)	Search modes - Boolean/Phrase
S86	TI (intracranial vascular N2 disorder*) or AB (intracranial vascular N2 disorder*)	Search modes - Boolean/Phrase
S85	TI (intra-cranial vascular N2 insult*) or AB (intra-cranial vascular N2 insult*)	Search modes - Boolean/Phrase
S84	TI (intra-cranial vascular N2 disturb*) or AB (intra-cranial vascular N2 disturb*)	Search modes - Boolean/Phrase
S83	TI (intra-cranial vascular N2 damage*) or AB (intra-cranial vascular N2 damage*)	Search modes - Boolean/Phrase
S82	TI (intra-cranial vascular N2 occlusion*) or AB (intra-cranial vascular N2 occlusion*)	Search modes - Boolean/Phrase
S81	TI (intra-cranial vascular N2 insufficien*) or AB (intra-cranial vascular N2 insufficien*)	Search modes - Boolean/Phrase
S80	TI (intra-cranial vascular N2 disease*) or AB (intra-cranial vascular N2 disease*)	Search modes - Boolean/Phrase
S79	TI (intra-cranial vascular N2 disorder*) or AB (intra-cranial vascular N2 disorder*)	Search modes - Boolean/Phrase
S78	TI (brain vascular N2 insult*) or AB (brain vascular N2 insult*)	Search modes - Boolean/Phrase
S77	TI (brain vascular N2 disturb*) or AB (brain vascular N2 disturb*)	Search modes - Boolean/Phrase
S76	TI (brain vascular N2 damage*) or AB (brain vascular N2 damage*)	Search modes - Boolean/Phrase
S75	TI (brain vascular N2 occlusion*) or AB (brain vascular N2 occlusion*)	Search modes - Boolean/Phrase
S74	TI (brain vascular N2 insufficien*) or AB (brain vascular N2 insufficien*)	Search modes - Boolean/Phrase
S73	TI (brain vascular N2 disease*) or AB (brain vascular N2 disease*)	Search modes - Boolean/Phrase
S72	TI (brain vascular N2 disorder*) or AB (brain vascular N2 disorder*)	Search modes - Boolean/Phrase

S71	MH CEREBROVASCULAR DISORDERS+	Search modes - Boolean/Phrase
S70	TI (intracranial N3 isch#emi*) or AB (intracranial N3 isch#emi*)	Search modes - Boolean/Phrase
S69	TI (intracranial N3 aneurysm*) or AB (intracranial N3 aneurysm*)	Search modes - Boolean/Phrase
S68	TI (intracranial N3 embolism) or AB (intracranial N3 embolism)	Search modes - Boolean/Phrase
S67	TI (intra-cranial N3 isch#emi*) or AB (intra-cranial N3 isch#emi*)	Search modes - Boolean/Phrase
S66	TI (intra-cranial N3 aneurysm*) or AB (intra-cranial N3 aneurysm*)	Search modes - Boolean/Phrase
S65	TI (intra-cranial N3 embolism) or AB (intra-cranial N3 embolism)	Search modes - Boolean/Phrase
S64	TI (cerebral N3 isch#emi*) or AB (cerebral N3 isch#emi*)	Search modes - Boolean/Phrase
S63	TI (cerebral N3 aneurysm*) or AB (cerebral N3 aneurysm*)	Search modes - Boolean/Phrase
S62	TI (cerebral N3 embolism) or AB (cerebral N3 embolism)	Search modes - Boolean/Phrase
S61	TI (brain N3 isch#emi*) or AB (brain N3 isch#emi*)	Search modes - Boolean/Phrase
S60	TI (brain N3 aneurysm*) or AB (brain N3 aneurysm*)	Search modes - Boolean/Phrase
S59	TI (brain N3 embolism) or AB (brain N3 embolism)	Search modes - Boolean/Phrase
S58	TI (stroke*) or AB (stroke*)	Search modes - Boolean/Phrase
S57	MH STROKE	Search modes - Boolean/Phrase
S56	TI (encephaliti*) or AB (encephaliti*)	Search modes - Boolean/Phrase
S55	MH ENCEPHALITIS+	Search modes - Boolean/Phrase
S54	TI (craniocerebral N3 insult*) or AB (craniocerebral N3 insult*)	Search modes - Boolean/Phrase
S53	TI (craniocerebral N3 disturb*) or AB (craniocerebral N3 disturb*)	Search modes - Boolean/Phrase
S52	TI (craniocerebral N3 damage*) or AB (craniocerebral N3 damage*)	Search modes - Boolean/Phrase
S51	TI (craniocerebral N3 trauma*) or AB (craniocerebral N3 trauma*)	Search modes - Boolean/Phrase

S50	TI (craniocerebral N3 injur*) or AB (craniocerebral N3 injur*)	Search modes - Boolean/Phrase
S49	TI (cerebral N3 insult*) or AB (cerebral N3 insult*)	Search modes - Boolean/Phrase
S48	TI (cerebral N3 disturb*) or AB (cerebral N3 disturb*)	Search modes - Boolean/Phrase
S47	TI (cerebral N3 damage*) or AB (cerebral N3 damage*)	Search modes - Boolean/Phrase
S46	TI (cerebral N3 trauma*) or AB (cerebral N3 trauma*)	Search modes - Boolean/Phrase
S45	TI (cerebral N3 injur*) or AB (cerebral N3 injur*)	Search modes - Boolean/Phrase
S44	TI (skull N3 insult*) or AB (skull N3 insult*)	Search modes - Boolean/Phrase
S43	TI (skull N3 disturb*) or AB (skull N3 disturb*)	Search modes - Boolean/Phrase
S42	TI (skull N3 damage*) or AB (skull N3 damage*)	Search modes - Boolean/Phrase
S41	TI (skull N3 trauma*) or AB (skull N3 trauma*)	Search modes - Boolean/Phrase
S40	TI (skull N3 injur*) or AB (skull N3 injur*)	Search modes - Boolean/Phrase
S39	TI (brain N3 insult*) or AB (brain N3 insult*)	Search modes - Boolean/Phrase
S38	TI (brain N3 disturb*) or AB (brain N3 disturb*)	Search modes - Boolean/Phrase
S37	TI (brain N3 damage*) or AB (brain N3 damage*)	Search modes - Boolean/Phrase
S36	TI (brain N3 trauma*) or AB (brain N3 trauma*)	Search modes - Boolean/Phrase
S35	TI (brain N3 injur*) or AB (brain N3 injur*)	Search modes - Boolean/Phrase
S34	TI (head N3 insult*) or AB (head N3 insult*)	Search modes - Boolean/Phrase
S33	TI (head N3 disturb*) or AB (head N3 disturb*)	Search modes - Boolean/Phrase
S32	TI (head N3 damage*) or AB (head N3 damage*)	Search modes - Boolean/Phrase
S31	TI (head N3 trauma*) or AB (head N3 trauma*)	Search modes - Boolean/Phrase
S30	TI (head N3 injur*) or AB (head N3 injur*)	Search modes - Boolean/Phrase

S29	MH HEAD INJURIES+	Search modes - Boolean/Phrase
S28	TI (meningitis or meningococcal) or AB (meningitis or meningococcal)	Search modes - Boolean/Phrase
S27	MH MENINGITIS+	Search modes - Boolean/Phrase
S26	TI (cerebral N3 pals*) or AB (cerebral N3 pals*)	Search modes - Boolean/Phrase
S25	MH CEREBRAL PALSY	Search modes - Boolean/Phrase
S24	TI (static encephalopath*) or AB (static encephalopath*)	Search modes - Boolean/Phrase
S23	TI (ABI) or AB (ABI)	Search modes - Boolean/Phrase
S22	TI (acquired N2 brain injur*) or AB (acquired N2 brain injur*)	Search modes - Boolean/Phrase
S21	TI (nonprogressive N2 brain injur*) or AB (nonprogressive N2 brain injur*)	Search modes - Boolean/Phrase
S20	TI (non-progressive N2 brain injur*) or AB (non-progressive N2 brain injur*)	Search modes - Boolean/Phrase
S19	MH BRAIN INJURIES+	Search modes - Boolean/Phrase
S18	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17	Search modes - Boolean/Phrase
S17	TI (upper motor neuron# lesion*) or AB (upper motor neuron# lesion*)	Search modes - Boolean/Phrase
S16	TI (atax*) or AB (atax*)	Search modes - Boolean/Phrase
S15	MH ATAXIA	Search modes - Boolean/Phrase
S14	TI (musc* N3 weak*) or AB (musc* N3 weak*)	Search modes - Boolean/Phrase
S13	MH MUSCLE WEAKNESS	Search modes - Boolean/Phrase
S12	TI (athetos* or athetoid*) or AB (athetos* or athetoid*)	Search modes - Boolean/Phrase
S11	TI (chorea* or choreic* or choreo*) or AB (chorea* or choreic* or choreo*)	Search modes - Boolean/Phrase
S10	MH CHOREA+	Search modes - Boolean/Phrase
S9	TI (dystoni*) or AB (dystoni*)	Search modes - Boolean/Phrase

S8	MH DYSTONIA+	Search modes - Boolean/Phrase
S7	TI (involuntar* N2 mov*) or AB (involuntar* N2 mov*)	Search modes - Boolean/Phrase
S6	TI (abnormal N2 mov*) or AB (abnormal N2 mov*)	Search modes - Boolean/Phrase
S5	TI (dyskinesi*) or AB (dyskinesi*)	Search modes - Boolean/Phrase
S4	MH DYSKINESIAS+	Search modes - Boolean/Phrase
S3	TI (spastic* or spasm* or hyperton*) or AB (spastic* or spasm* or hyperton*)	Search modes - Boolean/Phrase
S2	MH SPASM+	Search modes - Boolean/Phrase
S1	MH MUSCLE SPASTICITY	Search modes - Boolean/Phrase

Question 3 Health economics searches

Ovid MEDLINE(R) 1950+

SPAST_Q3_oral_drugs_economic_medline_110810

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	MUSCLE SPASTICITY/
9	exp SPASM/
10	exp MUSCLE HYPERTONIA/

11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	exp DYSKINESIAS/
14	dyskinesi$.ti,ab.
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	exp DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	(chorea$ or choreic$ or choreo$).ti,ab.
20	exp ATHETOSIS/
21	(athetos$ or athetoid).ti,ab.
22	MUSCLE WEAKNESS/
23	(musc$ adj3 weak$).ti,ab.
24	exp ATAXIA/
25	atax$.ti,ab.
26	upper motor neuron? lesion$.ti,ab.
27	or/8-26
28	exp BRAIN INJURIES/
29	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
30	ABI.ti,ab.
31	static encephalopath$.ti,ab.
32	CEREBRAL PALSY/
33	(cerebral adj3 pals$).ti,ab.
34	exp MENINGITIS/
35	(meningitis or meningococcal).ti,ab.
36	exp CRANIOCEREBRAL TRAUMA/
37	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp ENCEPHALITIS/
39	encephaliti$.ti,ab.
40	exp STROKE/
41	stroke$.ti,ab.
42	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
43	exp CEREBROVASCULAR DISORDERS/
44	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
45	exp HYDROCEPHALUS/
46	hydrocephal$.ti,ab.

47	SHAKEN BABY SYNDROME/
48	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
49	or/28-48
50	exp PARALYSIS/
51	HEMIPLEGIA/
52	exp PARAPLEGIA/
53	QUADRIPLEGIA/
54	exp PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	or/50-56
58	and/27,57
59	and/49,57
60	and/27,49
61	or/58-60
62	BACLOFEN/
63	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.
64	exp BENZODIAZEPINES/
65	benzodiazepine$.ti,ab.
66	exp BENZODIAZEPINONES/
67	exp MUSCLE RELAXANTS, CENTRAL/
68	exp DIAZEPAM/
69	(diazepam or valium or rimapam or dialar or diazemuls or stesolid or valclair).ti,ab.
70	(nitrazepam or nitrodiazepam or mogadon or somnite or remnos).ti,ab.
71	(clonazepam or rivotril).ti,ab.
72	(tizanidine or zanaflex).ti,ab.
73	DANTROLENE/
74	(dantrolene or dantrium).ti,ab.
75	LEVODOPA/
76	(levodopa or l dopa or l?dopa).ti,ab.
77	(levopa or dopar or larodopa or dopaflex).ti,ab.
78	(co beneldopa or co?beneldopa or madopar).ti,ab.
79	(co careldopa or co?careldopa or sinemet or duodopa or caramet or stalevo or lecado).ti,ab.
80	TRIHEXYPHENIDYL/
81	(tr#hex#phen#d#l or THP or benzhexol or broflex or artane).ti,ab.
82	TETRABENAZINE/
83	(tetrabenazin$ or xenazine or nitoman).ti,ab.
84	CLONIDINE/

85	(clonidine or catapres or dixarit).ti,ab.
86	or/62-85
87	and/61,86
88	limit 87 to english language
89	limit 88 to animals
90	limit 88 to (animals and humans)
91	89 not 90
92	88 not 91
93	and/7,92

1
2

EBM Reviews - Cochrane Central Register of Controlled Trials

SPAST_Q3_oral_drugs_economic_cctr_110810

#	Searches	Results
1	costs.tw.	6200
2	cost effective$.tw.	4915
3	economic.tw.	2752
4	or/1-3	10398
5	(metabolic adj cost).tw.	42
6	((energy or oxygen) adj cost).tw.	197
7	4 not (5 or 6)	10384
8	MUSCLE SPASTICITY/	338
9	exp SPASM/	240
10	exp MUSCLE HYPERTONIA/	424
11	(spastic$ or spasm$).ti,ab.	1865
12	hyperton$.ti,ab.	955
13	exp DYSKINESIAS/	1837
14	dyskinesi$.ti,ab.	920
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.	321
16	exp DYSTONIA/	123
17	dystoni$.ti,ab.	336
18	exp CHOREA/	148
19	(chorea$ or choreic$ or choreo$).ti,ab.	119
20	exp ATHETOSIS/	14
21	(athetos$ or athetoid).ti,ab.	16
22	MUSCLE WEAKNESS/	155
23	(musc$ adj3 weak$).ti,ab.	321
24	exp ATAXIA/	95
25	atax$.ti,ab.	239
26	upper motor neuron? lesion$.ti,ab.	7
27	or/8-26	6341
28	exp BRAIN INJURIES/	630
29	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.	71
30	ABI.ti,ab.	110
31	static encephalopath$.ti,ab.	1
32	CEREBRAL PALSY/	368
33	(cerebral adj3 pals$).ti,ab.	561
34	exp MENINGITIS/	371

35	(meningitis or meningococcal).ti,ab.	751
36	exp CRANIOCEREBRAL TRAUMA/	1203
37	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.	2067
38	exp ENCEPHALITIS/	146
39	encephaliti$.ti,ab.	197
40	exp STROKE/	2635
41	stroke$.ti,ab.	12493
42	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.	1172
43	exp CEREBROVASCULAR DISORDERS/	5788
44	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.	886
45	exp HYDROCEPHALUS/	96
46	hydrocephal$.ti,ab.	149
47	SHAKEN BABY SYNDROME/	4
48	(shak$ adj3 (injur$ or syndrome$)).ti,ab.	4
49	or/28-48	19829
50	exp PARALYSIS/	834
51	HEMIPLEGIA/	327
52	exp PARAPLEGIA/	134
53	QUADRIPLEGIA/	95
54	exp PARESIS/	211
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.	888
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.	235
57	or/50-56	1776
58	and/27,57	319
59	and/49,57	844
60	and/27,49	651
61	or/58-60	1364
62	BACLOFEN/	139
63	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.	233
64	exp BENZODIAZEPINES/	6895
65	benzodiazepine$.ti,ab.	2441
66	exp BENZODIAZEPINONES/	3949
67	exp MUSCLE RELAXANTS, CENTRAL/	2479
68	exp DIAZEPAM/	1790
69	(diazepam or valium or rimapam or dialar or diazemuls or stesolid or valclair).ti,ab.	2796

70	(nitrazepam or nitrodiazepam or mogadon or somnite or remnos).ti,ab.	266
71	(clonazepam or rivotril).ti,ab.	209
72	(tizanidine or zanaflex).ti,ab.	89
73	DANTROLENE/	25
74	(dantrolene or dantrium).ti,ab.	50
75	LEVODOPA/	847
76	(levodopa or l dopa or l?dopa).ti,ab.	1450
77	(levopa or dopar or larodopa or dopaflex).ti,ab.	0
78	(co beneldopa or co?beneldopa or madopar).ti,ab.	66
79	(co careldopa or co?careldopa or sinemet or duodopa or caramet or stalevo or lecado).ti,ab.	124
80	TRIHEXYPHENIDYL/	65
81	(tr#hex#phen#d#l or THP or benzhexol or broflex or artane).ti,ab.	163
82	TETRABENAZINE/	22
83	(tetrabenazin$ or xenazine or nitoman).ti,ab.	27
84	CLONIDINE/	1420
85	(clonidine or catapres or dixarit).ti,ab.	2063
86	or/62-85	13883
87	and/61,86	84
88	and/7,87	1

1
2

EBM Reviews - Health Technology Assessment

SPAST_Q3_oral_drugs_economic_hta_110810

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).tw.
5	hyperton$.tw.
6	exp DYSKINESIAS/
7	dyskinesi$.tw.
8	((abnormal$ or involuntar$) adj2 mov$).tw.
9	exp DYSTONIA/
10	dystoni$.tw.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).tw.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).tw.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).tw.
17	exp ATAXIA/
18	atax$.tw.
19	upper motor neuron? lesion$.tw.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.
23	ABI.tw.
24	static encephalopath$.tw.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).tw.
27	exp MENINGITIS/
28	(meningitis or meningococcal).tw.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.
31	exp ENCEPHALITIS/
32	encephaliti$.tw.
33	exp STROKE/

34	stroke$.tw.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.
38	exp HYDROCEPHALUS/
39	hydrocephal$.tw.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).tw.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	BACLOFEN/
56	(baclofen or baclophen or lioresal or spinax or lyflex).tw.
57	exp BENZODIAZEPINES/
58	benzodiazepine$.tw.
59	exp BENZODIAZEPINONES/
60	exp MUSCLE RELAXANTS, CENTRAL/
61	exp DIAZEPAM/
62	(diazepam or valium or rimapam or dialar or diazemuls or stesolid or valclair).tw.
63	(nitrazepam or nitrodiazepam or mogadon or somnite or remnos).tw.
64	(clonazepam or rivotril).tw.
65	(tizanidine or zanaflex).tw.
66	DANTROLENE/
67	(dantrolene or dantrium).tw.
68	LEVODOPA/
69	(levodopa or l dopa or l?dopa).tw.

70	(levopa or dopar or larodopa or dopaflex).tw.
71	(co beneldopa or co?beneldopa or madopar).tw.
72	(co careldopa or co?careldopa or sinemet or duodopa or caramet or stalevo or lecado).tw.
73	TRIHEXYPHENIDYL/
74	(tr#hex#phen#d#l or THP or benzhexol or broflex or artane).tw.
75	TETRABENAZINE/
76	(tetrabenazin$ or xenazine or nitoman).tw.
77	CLONIDINE/
78	(clonidine or catapres or dixarit).tw.
79	or/55-78
80	and/54,79

1
2

EBM Reviews - NHS Economic Evaluation Database

SPAST_Q3_oral_drugs_economic_nhseed_110810

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).tw.
5	hyperton$.tw.
6	exp DYSKINESIAS/
7	dyskinesi$.tw.
8	((abnormal$ or involuntar$) adj2 mov$).tw.
9	exp DYSTONIA/
10	dystoni$.tw.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).tw.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).tw.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).tw.
17	exp ATAXIA/
18	atax$.tw.
19	upper motor neuron? lesion$.tw.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.
23	ABI.tw.
24	static encephalopath$.tw.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).tw.
27	exp MENINGITIS/
28	(meningitis or meningococcal).tw.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.
31	exp ENCEPHALITIS/
32	encephaliti$.tw.
33	exp STROKE/

34	stroke$.tw.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.
38	exp HYDROCEPHALUS/
39	hydrocephal$.tw.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).tw.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	BACLOFEN/
56	(baclofen or baclophen or lioresal or spinax or lyflex).tw.
57	exp BENZODIAZEPINES/
58	benzodiazepine$.tw.
59	exp BENZODIAZEPINONES/
60	exp MUSCLE RELAXANTS, CENTRAL/
61	exp DIAZEPAM/
62	(diazepam or valium or rimapam or dialar or diazemuls or stesolid or valclair).tw.
63	(nitrazepam or nitrodiazepam or mogadon or somnite or remnos).tw.
64	(clonazepam or rivotril).tw.
65	(tizanidine or zanaflex).tw.
66	DANTROLENE/
67	(dantrolene or dantrium).tw.
68	LEVODOPA/
69	(levodopa or l dopa or l?dopa).tw.

70	(levopa or dopar or larodopa or dopaflex).tw.
71	(co beneldopa or co?beneldopa or madopar).tw.
72	(co careldopa or co?careldopa or sinemet or duodopa or caramet or stalevo or lecado).tw.
73	TRIHEXYPHENIDYL/
74	(tr#hex#phen#d#l or THP or benzhexol or broflex or artane).tw.
75	TETRABENAZINE/
76	(tetrabenazin$ or xenazine or nitoman).tw.
77	CLONIDINE/
78	(clonidine or catapres or dixarit).tw.
79	or/55-78
80	and/54,79

1
2

EMBASE 1980+

SPAST_Q3_oral_drugs_economic_embase_110810

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	SPASTICITY/
9	exp MUSCLE SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	DYSKINESIA/
14	dyskinesi$.ti,ab.
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	CHOREOATHETOSIS/
20	ATHETOSIS/
21	(chorea$ or choreic$ or choreo$).ti,ab.
22	(athetos$ or athetoid).ti,ab.
23	exp MUSCLE WEAKNESS/
24	(musc$ adj3 weak$).ti,ab.
25	exp ATAXIA/
26	atax$.ti,ab.
27	upper motor neuron? lesion$.ti,ab.
28	or/8-27
29	exp BRAIN INJURY/
30	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
31	ABI.ti,ab.
32	static encephalopath$.ti,ab.
33	CEREBRAL PALSY/
34	(cerebral adj3 pals$).ti,ab.

35	exp MENINGITIS/
36	(meningitis or meningococcal).ti,ab.
37	exp HEAD INJURY/
38	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
39	exp ENCEPHALITIS/
40	encephaliti$.ti,ab.
41	STROKE/
42	stroke$.ti,ab.
43	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
44	exp CEREBROVASCULAR DISEASE/
45	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
46	exp HYDROCEPHALUS/
47	hydrocephal$.ti,ab.
48	SHAKEN BABY SYNDROME/
49	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
50	or/29-49
51	exp PARALYSIS/ or MONOPLEGIA/ or HEMIPLEGIA/ or PARAPLEGIA/ or QUADRIPLEGIA/
52	SPASTIC PARAPLEGIA/
53	PARESIS/ or MONOPARESIS/ or HEMIPARESIS/
54	SPASTIC PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	or/51-56
58	and/28,57
59	and/50,57
60	and/28,50
61	or/58-60
62	BACLOFEN/
63	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.
64	BENZODIAZEPINE/
65	benzodiazepine$.ti,ab.
66	exp BENZODIAZEPINE DERIVATIVE/
67	exp CENTRAL MUSCLE RELAXANT/
68	DIAZEPAM/
69	(diazepam or valium or rimapam or dialar or diazemuls or stesolid or valclair).ti,ab.

70	NITRAZEPAM/
71	(nitrazepam or nitrodiazepam or mogadon or somnite or remnos).ti,ab.
72	CLONAZEPAM/
73	(clonazepam or rivotril).ti,ab.
74	TIZANIDINE/
75	(tizanidine or zanaflex).ti,ab.
76	DANTROLENE/
77	(dantrolene or dantrium).ti,ab.
78	LEVODOPA/
79	BENSERAZIDE PLUS LEVODOPA/ or CO BENELDOPA/
80	CARBIDOPA PLUS LEVODOPA/ or CO CARELDOPA/
81	(levodopa or l dopa or l?dopa).ti,ab.
82	(levopa or dopar or larodopa or dopaflex).ti,ab.
83	(co beneldopa or co?beneldopa or madopar).ti,ab.
84	(co careldopa or co?careldopa or sinemet or duodopa or caramet or stalevo or lecado).ti,ab.
85	TRIHEXYPHENIDYL/
86	(tr#hex#phen#d#l or THP or benzhexol or broflex or artane).ti,ab.
87	TETRABENAZINE/
88	(tetrabenazin$ or xenazine or nitoman).ti,ab.
89	CLONIDINE/
90	(clonidine or catapres or dixarit).ti,ab.
91	or/62-90
92	and/61,91
93	limit 92 to english language
94	and/7,93

Question 4 What is the effectiveness of the long-term use of Intramuscular Botulinum toxin A or B (BoNT) in combination with other interventions (physio/OT/orthoses) as compared to other interventions at reducing spasticity, maintaining motor function and preventing secondary complications in children with spasticity and with or without other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder?

Ovid MEDLINE(R) 1950+

SPAST_Q4_botox_medline_020810

#	Searches
1	randomized controlled trial.pt.
2	controlled clinical trial.pt.
3	DOUBLE BLIND METHOD/

4	SINGLE BLIND METHOD/
5	RANDOM ALLOCATION/
6	RANDOMIZED CONTROLLED TRIALS/
7	or/1-6
8	((single or double or triple or treble) adj5 (blind$ or mask$)).tw,sh.
9	clinical trial.pt.
10	exp CLINICAL TRIAL/
11	exp CLINICAL TRIALS AS TOPIC/
12	(clinic$ adj5 trial$).tw,sh.
13	PLACEBOS/
14	placebo$.tw,sh.
15	random$.tw,sh.
16	or/8-15
17	or/7,16
18	META ANALYSIS/
19	META ANALYSIS AS TOPIC/
20	meta analysis.pt.
21	(metaanaly$ or meta-analy$ or (meta adj analy$)).tw,sh.
22	(systematic$ adj5 (review$ or overview$)).tw,sh.
23	(methodologic$ adj5 (review$ or overview$)).tw,sh.
24	or/18-23
25	review$.pt.
26	(medline or medlars or embase or cinahl or cochrane or psycinfo or psychinfo or psychlit or psyclit or "web of science" or "science citation" or scisearch).tw.
27	((hand or manual$) adj2 search$).tw.
28	(electronic database$ or bibliographic database$ or computeri?ed database$ or online database$).tw,sh.
29	(pooling or pooled or mantel haenszel).tw,sh.
30	(peto or dersimonian or der simonian or fixed effect).tw,sh.
31	or/26-30
32	and/25,31
33	exp COHORT STUDIES/
34	cohort$.tw.
35	or/33-34
36	or/17,24,32,35
37	letter.pt.
38	comment.pt.
39	editorial.pt.
40	historical article.pt.

41	or/37-40
42	36 not 41
43	MUSCLE SPASTICITY/
44	exp SPASM/
45	exp MUSCLE HYPERTONIA/
46	(spastic$ or spasm$).ti,ab.
47	hyperton$.ti,ab.
48	exp DYSKINESIAS/
49	dyskinesi$.ti,ab.
50	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
51	exp DYSTONIA/
52	dystoni$.ti,ab.
53	exp CHOREA/
54	(chorea$ or choreic$ or choreo$).ti,ab.
55	exp ATHETOSIS/
56	(athetos$ or athetoid).ti,ab.
57	MUSCLE WEAKNESS/
58	(musc$ adj3 weak$).ti,ab.
59	exp ATAXIA/
60	atax$.ti,ab.
61	upper motor neuron? lesion$.ti,ab.
62	or/43-61
63	exp BRAIN INJURIES/
64	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
65	ABI.ti,ab.
66	static encephalopath$.ti,ab.
67	CEREBRAL PALSY/
68	(cerebral adj3 pals$).ti,ab.
69	exp MENINGITIS/
70	(meningitis or meningococcal).ti,ab.
71	exp CRANIOCEREBRAL TRAUMA/
72	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
73	exp ENCEPHALITIS/
74	encephaliti$.ti,ab.
75	exp STROKE/
76	stroke$.ti,ab.
77	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.

78	exp CEREBROVASCULAR DISORDERS/
79	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
80	exp HYDROCEPHALUS/
81	hydrocephal$.ti,ab.
82	SHAKEN BABY SYNDROME/
83	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
84	or/63-83
85	exp PARALYSIS/
86	HEMIPLEGIA/
87	exp PARAPLEGIA/
88	QUADRIPLEGIA/
89	exp PARESIS/
90	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
91	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
92	or/85-91
93	and/62,92
94	and/84,92
95	and/62,84
96	or/93-95
97	exp BOTULINUM TOXINS/
98	BOTULINUM TOXIN TYPE A/
99	botulinum$.ti,ab.
100	(BTA or BTB or BTX or BoNT$ or BoTx).ti,ab.
101	(botox or dysport or azzalure or oculinum or prosigne or purtox or reloxin or vistabel or xeomin or bocouture).ti,ab.
102	(neurobloc or myobloc).ti,ab.
103	or/97-102
104	and/96,103
105	limit 104 to english language
106	limit 105 to animals
107	limit 105 to (animals and humans)
108	106 not 107
109	105 not 108
110	and/42,109

Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations

SPAST_Q4_botox_medline_in-process_020810

#	Searches
1	(spastic$ or spasm$).ti,ab.
2	hyperton$.ti,ab.
3	dyskinesi$.ti,ab.
4	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
5	dystoni$.ti,ab.
6	(chorea$ or choreic$ or choreo$).ti,ab.
7	(athetos$ or athetoid).ti,ab.
8	(musc$ adj3 weak$).ti,ab.
9	atax$.ti,ab.
10	upper motor neuron? lesion$.ti,ab.
11	or/1-10
12	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
13	ABI.ti,ab.
14	static encephalopath$.ti,ab.
15	(cerebral adj3 pals$).ti,ab.
16	(meningitis or meningococcal).ti,ab.
17	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
18	encephaliti$.ti,ab.
19	stroke$.ti,ab.
20	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
21	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
22	hydrocephal$.ti,ab.
23	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
24	or/12-23
25	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
26	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
27	or/25-26
28	and/11,27
29	and/24,27
30	and/11,24
31	or/28-30

32	botulinum$.ti,ab.
33	(BTA or BTB or BTX or BoNT$ or BoTx).ti,ab.
34	(botox or dysport or azzalure or oculinum or prosigne or purtox or reloxin or vistabel or xeomin or bocouture).ti,ab.
35	(neurobloc or myobloc).ti,ab.
36	or/32-35
37	and/31,36

EBM Reviews - Cochrane Central Register of Controlled Trials

SPAST_Q4_botox_cctr_020810

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	exp DYSKINESIAS/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	exp DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).ti,ab.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).ti,ab.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).ti,ab.
17	exp ATAXIA/
18	atax$.ti,ab.
19	upper motor neuron? lesion$.ti,ab.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
23	ABI.ti,ab.
24	static encephalopath$.ti,ab.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).ti,ab.
27	exp MENINGITIS/
28	(meningitis or meningococcal).ti,ab.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
31	exp ENCEPHALITIS/
32	encephaliti$.ti,ab.
33	exp STROKE/

34	stroke$.ti,ab.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp HYDROCEPHALUS/
39	hydrocephal$.ti,ab.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	exp BOTULINUM TOXINS/
56	BOTULINUM TOXIN TYPE A/
57	botulinum$.ti,ab.
58	(BTA or BTB or BTX or BoNT$ or BoTx).ti,ab.
59	(botox or dysport or azzalure or oculinum or prosigne or purtox or reloxin or vistabel or xeomin or bocouture).ti,ab.
60	(neurobloc or myobloc).ti,ab.
61	or/55-60
62	and/54,61

1

2

EBM Reviews - Cochrane Database of Systematic Reviews 200+, EBM Reviews - Database of Abstracts of Reviews of Effects

SPAST_Q4_botox_cdsrdare_020810

#	Searches
1	MUSCLE SPASTICITY.kw.
2	SPASM.kw.
3	MUSCLE HYPERTONIA.kw.
4	(spastic$ or spasm$).tw,tx.
5	hyperton$.tw,tx.
6	DYSKINESIAS.kw.
7	dyskinesi$.tw,tx.
8	((abnormal$ or involuntar$) adj2 mov$).tw,tx.
9	DYSTONIA.kw.
10	dystoni$.tw,tx.
11	CHOREA.kw.
12	(chorea$ or choreic$ or choreo$).tw,tx.
13	ATHETOSIS.kw.
14	(athetos$ or athetoid).tw,tx.
15	MUSCLE WEAKNESS.kw.
16	(musc$ adj3 weak$).tw,tx.
17	ATAXIA.kw.
18	atax$.tw,tx.
19	upper motor neuron? lesion$.tw,tx.
20	or/1-19
21	BRAIN INJURIES.kw.
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw,tx.
23	ABI.tw,tx.
24	static encephalopath$.tw,tx.
25	CEREBRAL PALSY.kw.
26	(cerebral adj3 pals$).tw,tx.
27	MENINGITIS.kw.
28	(meningitis or meningococcal).tw,tx.
29	CRANIOCEREBRAL TRAUMA.kw.
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw,tx.
31	ENCEPHALITIS.kw.
32	encephaliti$.tw,tx.
33	STROKE.kw.

34	stroke$.tw,tx.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw,tx.
36	CEREBROVASCULAR DISORDERS.kw.
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw,tx.
38	HYDROCEPHALUS.kw.
39	hydrocephal$.tw,tx.
40	SHAKEN BABY SYNDROME.kw.
41	(shak$ adj3 (injur$ or syndrome$)).tw,tx.
42	or/21-41
43	PARALYSIS.kw.
44	HEMIPLEGIA.kw.
45	PARAPLEGIA.kw.
46	QUADRIPLEGIA.kw.
47	PARESIS.kw.
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw,tx.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw,tx.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	BOTULINUM TOXINS.kw.
56	BOTULINUM TOXIN TYPE A.kw.
57	botulinum$.tw,tx.
58	(BTA or BTB or BTX or BoNT$ or BoTx).tw,tx.
59	(botox or dysport or azzalure or oculinum or prosigne or purtox or reloxin or vistabel or xeomin or bocouture).tw,tx.
60	(neurobloc or myobloc).tw,tx.
61	or/55-60
62	and/54,61

1
2

EMBASE 1980+

SPAST_Q4_botox_embase_020810

#	Searches
1	CLINICAL TRIALS/
2	(clinic$ adj5 trial$).tw,sh.
3	SINGLE BLIND PROCEDURE/
4	DOUBLE BLIND PROCEDURE/
5	RANDOM ALLOCATION/
6	CROSSOVER PROCEDURE/
7	PLACEBO/
8	placebo$.tw,sh.
9	random$.tw,sh.
10	RANDOMIZED CONTROLLED TRIALS/
11	((single or double or triple or treble) adj (blind$ or mask$)).tw,sh.
12	randomi?ed control$ trial$.tw.
13	or/1-12
14	META ANALYSIS/
15	((meta adj analy$) or metaanalys$ or meta-analy$).tw,sh.
16	(systematic$ adj5 (review$ or overview$)).tw,sh.
17	(methodologic$ adj5 (review$ or overview$)).tw,sh.
18	or/14-17
19	review.pt.
20	(medline or medlars or embase).ab.
21	(scisearch or science citation index).ab.
22	(psychlit or psyclit or psychinfo or psycinfo or cinahl or cochrane).ab.
23	((hand or manual$) adj2 search$).tw.
24	(electronic database$ or bibliographic database$ or computeri?ed database$ or online database$).tw.
25	(pooling or pooled or mantel haenszel).tw.
26	(peto or dersimonian or "der simonian" or fixed effect).tw.
27	or/20-26
28	and/19,27
29	COHORT ANALYSIS/
30	LONGITUDINAL STUDY/
31	FOLLOW UP/
32	PROSPECTIVE STUDY/
33	cohort$.tw.

34	or/29-33
35	or/13,18,28,34
36	(book or conference paper or editorial or letter or note or proceeding or short survey).pt.
37	35 not 36
38	SPASTICITY/
39	exp MUSCLE SPASM/
40	exp MUSCLE HYPERTONIA/
41	(spastic$ or spasm$).ti,ab.
42	hyperton$.ti,ab.
43	DYSKINESIA/
44	dyskinesi$.ti,ab.
45	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
46	DYSTONIA/
47	dystoni$.ti,ab.
48	exp CHOREA/
49	CHOREOATHETOSIS/
50	ATHETOSIS/
51	(chorea$ or choreic$ or choreo$).ti,ab.
52	(athetos$ or athetoid).ti,ab.
53	exp MUSCLE WEAKNESS/
54	(musc$ adj3 weak$).ti,ab.
55	exp ATAXIA/
56	atax$.ti,ab.
57	upper motor neuron? lesion$.ti,ab.
58	or/38-57
59	exp BRAIN INJURY/
60	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
61	ABI.ti,ab.
62	static encephalopath$.ti,ab.
63	CEREBRAL PALSY/
64	(cerebral adj3 pals$).ti,ab.
65	exp MENINGITIS/
66	(meningitis or meningococcal).ti,ab.
67	exp HEAD INJURY/
68	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
69	exp ENCEPHALITIS/
70	encephaliti$.ti,ab.
71	STROKE/

72	stroke$.ti,ab.
73	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
74	exp CEREBROVASCULAR DISEASE/
75	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
76	exp HYDROCEPHALUS/
77	hydrocephal$.ti,ab.
78	SHAKEN BABY SYNDROME/
79	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
80	or/59-79
81	exp PARALYSIS/ or MONOPLEGIA/ or HEMIPLEGIA/ or PARAPLEGIA/ or QUADRIPLEGIA/
82	SPASTIC PARAPLEGIA/
83	PARESIS/ or MONOPARESIS/ or HEMIPARESIS/
84	SPASTIC PARESIS/
85	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
86	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
87	or/81-86
88	and/58,87
89	and/80,87
90	and/58,80
91	or/88-90
92	BOTULINUM TOXIN/
93	BOTULINUM TOXIN A/
94	BOTULINUM TOXIN B/
95	botulinum$.ti,ab.
96	(BTA or BTB or BTX or BoNT$ or BoTx).ti,ab.
97	(botox or dysport or azzalure or oculinum or prosigne or purtox or reloxin or vistabel or xeomin or bocouture).ti,ab.
98	(neurobloc or myobloc).ti,ab.
99	or/92-98
100	and/91,99
101	limit 100 to english language
102	and/37,101

CINAHL 1981+

SPAST_Q4_botox_cinahl_020810

#	Query	Limiters/Expanders
S127	S118 and S125	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase
S126	S118 and S125	Search modes - Boolean/Phrase
S125	S119 or S120 or S121 or S122 or S123 or S124	Search modes - Boolean/Phrase
S124	TI (neurobloc or myobloc) or AB (neurobloc or myobloc)	Search modes - Boolean/Phrase
S123	AB (botox or dysport or azzalure or oculinum or prosigne or purtox or reloxin or vistabel or xeomin or bocouture)	Search modes - Boolean/Phrase
S122	TI (botox or dysport or azzalure or oculinum or prosigne or purtox or reloxin or vistabel or xeomin or bocouture)	Search modes - Boolean/Phrase
S121	TI (BTA or BTB or BTX or BoNT* or BoTx) or AB (BTA or BTB or BTX or BoNT* or BoTx)	Search modes - Boolean/Phrase
S120	TI (botulinum*) or AB (botulinum*)	Search modes - Boolean/Phrase
S119	MH BOTULINUM TOXINS	Search modes - Boolean/Phrase
S118	S115 or S116 or S117	Search modes - Boolean/Phrase
S117	S105 and S114	Search modes - Boolean/Phrase
S116	S18 and S114	Search modes - Boolean/Phrase
S115	S18 and S105	Search modes - Boolean/Phrase
S114	S106 or S107 or S108 or S109 or S110 or S111 or S112 or S113	Search modes - Boolean/Phrase
S113	AB (monopares* or dipares* or hemipares* or quadripares* or tetrapares*)	Search modes - Boolean/Phrase
S112	TI (monopares* or dipares* or hemipares* or quadripares* or tetrapares*)	Search modes - Boolean/Phrase
S111	AB (monoplegi* or diplegi* or hemiplegi* or quadriplegi* or tetraplegi*)	Search modes - Boolean/Phrase
S110	TI (monoplegi* or diplegi* or hemiplegi* or quadriplegi* or	Search modes -

	tetraplegi*)	Boolean/Phrase
S109	MH QUADRIPLEGIA	Search modes - Boolean/Phrase
S108	MH PARAPLEGIA	Search modes - Boolean/Phrase
S107	MH HEMIPLEGIA	Search modes - Boolean/Phrase
S106	MH PARALYSIS+	Search modes - Boolean/Phrase
S105	S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32 or S33 or S34 or S35 or S36 or S37 or S38 or S39 or S40 or S41 or S42 or S43 or S44 or S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58 or S59 or S60 or S61 or S62 or S63 or S64 or S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73 or S74 or S75 or S76 or S77 or S78 or S79 or S80 or S81 or S82 or S83 or S84 or S85 or S86 or S87 or S88 or S89 or S90 or S91 or S92 or S93 or S94 or S95 or S96 or S97 or S98 or S99 or S100 or S101 or S102 or S103 or S104	Search modes - Boolean/Phrase
S104	TI (shak* N3 syndrome*) or AB (shak* N3 syndrome*)	Search modes - Boolean/Phrase
S103	TI (shak* N3 injur*) or AB (shak* N3 injur*)	Search modes - Boolean/Phrase
S102	MH SHAKEN BABY SYNDROME	Search modes - Boolean/Phrase
S101	TI (hydrocephal*) or AB (hydrocephal*)	Search modes - Boolean/Phrase
S100	MH HYDROCEPHALUS+	Search modes - Boolean/Phrase
S99	TI (cerebrovascular N2 insult*) or AB (cerebrovascular N2 insult*)	Search modes - Boolean/Phrase
S98	TI (cerebrovascular N2 disturb*) or AB (cerebrovascular N2 disturb*)	Search modes - Boolean/Phrase
S97	TI (cerebrovascular N2 damage*) or AB (cerebrovascular N2 damage*)	Search modes - Boolean/Phrase
S96	TI (cerebrovascular N2 occlusion*) or AB (cerebrovascular N2 occlusion*)	Search modes - Boolean/Phrase
S95	TI (cerebrovascular N2 insufficien*) or AB (cerebrovascular N2 insufficien*)	Search modes - Boolean/Phrase
S94	TI (cerebrovascular N2 disease*) or AB (cerebrovascular N2 disease*)	Search modes - Boolean/Phrase
S93	TI (cerebrovascular N2 disorder*) or AB (cerebrovascular N2	Search modes -

	disorder*)	Boolean/Phrase
S92	TI (intracranial vascular N2 insult*) or AB (intracranial vascular N2 insult*)	Search modes - Boolean/Phrase
S91	TI (intracranial vascular N2 disturb*) or AB (intracranial vascular N2 disturb*)	Search modes - Boolean/Phrase
S90	TI (intracranial vascular N2 damage*) or AB (intracranial vascular N2 damage*)	Search modes - Boolean/Phrase
S89	TI (intracranial vascular N2 occlusion*) or AB (intracranial vascular N2 occlusion*)	Search modes - Boolean/Phrase
S88	TI (intracranial vascular N2 insufficien*) or AB (intracranial vascular N2 insufficien*)	Search modes - Boolean/Phrase
S87	TI (intracranial vascular N2 disease*) or AB (intracranial vascular N2 disease*)	Search modes - Boolean/Phrase
S86	TI (intracranial vascular N2 disorder*) or AB (intracranial vascular N2 disorder*)	Search modes - Boolean/Phrase
S85	TI (intra-cranial vascular N2 insult*) or AB (intra-cranial vascular N2 insult*)	Search modes - Boolean/Phrase
S84	TI (intra-cranial vascular N2 disturb*) or AB (intra-cranial vascular N2 disturb*)	Search modes - Boolean/Phrase
S83	TI (intra-cranial vascular N2 damage*) or AB (intra-cranial vascular N2 damage*)	Search modes - Boolean/Phrase
S82	TI (intra-cranial vascular N2 occlusion*) or AB (intra-cranial vascular N2 occlusion*)	Search modes - Boolean/Phrase
S81	TI (intra-cranial vascular N2 insufficien*) or AB (intra-cranial vascular N2 insufficien*)	Search modes - Boolean/Phrase
S80	TI (intra-cranial vascular N2 disease*) or AB (intra-cranial vascular N2 disease*)	Search modes - Boolean/Phrase
S79	TI (intra-cranial vascular N2 disorder*) or AB (intra-cranial vascular N2 disorder*)	Search modes - Boolean/Phrase
S78	TI (brain vascular N2 insult*) or AB (brain vascular N2 insult*)	Search modes - Boolean/Phrase
S77	TI (brain vascular N2 disturb*) or AB (brain vascular N2 disturb*)	Search modes - Boolean/Phrase
S76	TI (brain vascular N2 damage*) or AB (brain vascular N2 damage*)	Search modes - Boolean/Phrase
S75	TI (brain vascular N2 occlusion*) or AB (brain vascular N2 occlusion*)	Search modes - Boolean/Phrase
S74	TI (brain vascular N2 insufficien*) or AB (brain vascular N2 insufficien*)	Search modes - Boolean/Phrase
S73	TI (brain vascular N2 disease*) or AB (brain vascular N2 disease*)	Search modes - Boolean/Phrase

S72	TI (brain vascular N2 disorder*) or AB (brain vascular N2 disorder*)	Search modes - Boolean/Phrase
S71	MH CEREBROVASCULAR DISORDERS+	Search modes - Boolean/Phrase
S70	TI (intracranial N3 isch#emi*) or AB (intracranial N3 isch#emi*)	Search modes - Boolean/Phrase
S69	TI (intracranial N3 aneurysm*) or AB (intracranial N3 aneurysm*)	Search modes - Boolean/Phrase
S68	TI (intracranial N3 embolism) or AB (intracranial N3 embolism)	Search modes - Boolean/Phrase
S67	TI (intra-cranial N3 isch#emi*) or AB (intra-cranial N3 isch#emi*)	Search modes - Boolean/Phrase
S66	TI (intra-cranial N3 aneurysm*) or AB (intra-cranial N3 aneurysm*)	Search modes - Boolean/Phrase
S65	TI (intra-cranial N3 embolism) or AB (intra-cranial N3 embolism)	Search modes - Boolean/Phrase
S64	TI (cerebral N3 isch#emi*) or AB (cerebral N3 isch#emi*)	Search modes - Boolean/Phrase
S63	TI (cerebral N3 aneurysm*) or AB (cerebral N3 aneurysm*)	Search modes - Boolean/Phrase
S62	TI (cerebral N3 embolism) or AB (cerebral N3 embolism)	Search modes - Boolean/Phrase
S61	TI (brain N3 isch#emi*) or AB (brain N3 isch#emi*)	Search modes - Boolean/Phrase
S60	TI (brain N3 aneurysm*) or AB (brain N3 aneurysm*)	Search modes - Boolean/Phrase
S59	TI (brain N3 embolism) or AB (brain N3 embolism)	Search modes - Boolean/Phrase
S58	TI (stroke*) or AB (stroke*)	Search modes - Boolean/Phrase
S57	MH STROKE	Search modes - Boolean/Phrase
S56	TI (encephaliti*) or AB (encephaliti*)	Search modes - Boolean/Phrase
S55	MH ENCEPHALITIS+	Search modes - Boolean/Phrase
S54	TI (craniocerebral N3 insult*) or AB (craniocerebral N3 insult*)	Search modes - Boolean/Phrase
S53	TI (craniocerebral N3 disturb*) or AB (craniocerebral N3 disturb*)	Search modes - Boolean/Phrase
S52	TI (craniocerebral N3 damage*) or AB (craniocerebral N3 damage*)	Search modes - Boolean/Phrase

S51	TI (craniocerebral N3 trauma*) or AB (craniocerebral N3 trauma*)	Search modes - Boolean/Phrase
S50	TI (craniocerebral N3 injur*) or AB (craniocerebral N3 injur*)	Search modes - Boolean/Phrase
S49	TI (cerebral N3 insult*) or AB (cerebral N3 insult*)	Search modes - Boolean/Phrase
S48	TI (cerebral N3 disturb*) or AB (cerebral N3 disturb*)	Search modes - Boolean/Phrase
S47	TI (cerebral N3 damage*) or AB (cerebral N3 damage*)	Search modes - Boolean/Phrase
S46	TI (cerebral N3 trauma*) or AB (cerebral N3 trauma*)	Search modes - Boolean/Phrase
S45	TI (cerebral N3 injur*) or AB (cerebral N3 injur*)	Search modes - Boolean/Phrase
S44	TI (skull N3 insult*) or AB (skull N3 insult*)	Search modes - Boolean/Phrase
S43	TI (skull N3 disturb*) or AB (skull N3 disturb*)	Search modes - Boolean/Phrase
S42	TI (skull N3 damage*) or AB (skull N3 damage*)	Search modes - Boolean/Phrase
S41	TI (skull N3 trauma*) or AB (skull N3 trauma*)	Search modes - Boolean/Phrase
S40	TI (skull N3 injur*) or AB (skull N3 injur*)	Search modes - Boolean/Phrase
S39	TI (brain N3 insult*) or AB (brain N3 insult*)	Search modes - Boolean/Phrase
S38	TI (brain N3 disturb*) or AB (brain N3 disturb*)	Search modes - Boolean/Phrase
S37	TI (brain N3 damage*) or AB (brain N3 damage*)	Search modes - Boolean/Phrase
S36	TI (brain N3 trauma*) or AB (brain N3 trauma*)	Search modes - Boolean/Phrase
S35	TI (brain N3 injur*) or AB (brain N3 injur*)	Search modes - Boolean/Phrase
S34	TI (head N3 insult*) or AB (head N3 insult*)	Search modes - Boolean/Phrase
S33	TI (head N3 disturb*) or AB (head N3 disturb*)	Search modes - Boolean/Phrase
S32	TI (head N3 damage*) or AB (head N3 damage*)	Search modes - Boolean/Phrase
S31	TI (head N3 trauma*) or AB (head N3 trauma*)	Search modes - Boolean/Phrase

S30	TI (head N3 injur*) or AB (head N3 injur*)	Search modes - Boolean/Phrase
S29	MH HEAD INJURIES+	Search modes - Boolean/Phrase
S28	TI (meningitis or meningococcal) or AB (meningitis or meningococcal)	Search modes - Boolean/Phrase
S27	MH MENINGITIS+	Search modes - Boolean/Phrase
S26	TI (cerebral N3 pals*) or AB (cerebral N3 pals*)	Search modes - Boolean/Phrase
S25	MH CEREBRAL PALSY	Search modes - Boolean/Phrase
S24	TI (static encephalopath*) or AB (static encephalopath*)	Search modes - Boolean/Phrase
S23	TI (ABI) or AB (ABI)	Search modes - Boolean/Phrase
S22	TI (acquired N2 brain injur*) or AB (acquired N2 brain injur*)	Search modes - Boolean/Phrase
S21	TI (nonprogressive N2 brain injur*) or AB (nonprogressive N2 brain injur*)	Search modes - Boolean/Phrase
S20	TI (non-progressive N2 brain injur*) or AB (non-progressive N2 brain injur*)	Search modes - Boolean/Phrase
S19	MH BRAIN INJURIES+	Search modes - Boolean/Phrase
S18	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17	Search modes - Boolean/Phrase
S17	TI (upper motor neuron# lesion*) or AB (upper motor neuron# lesion*)	Search modes - Boolean/Phrase
S16	TI (atax*) or AB (atax*)	Search modes - Boolean/Phrase
S15	MH ATAXIA	Search modes - Boolean/Phrase
S14	TI (musc* N3 weak*) or AB (musc* N3 weak*)	Search modes - Boolean/Phrase
S13	MH MUSCLE WEAKNESS	Search modes - Boolean/Phrase
S12	TI (athetos* or athetoid*) or AB (athetos* or athetoid*)	Search modes - Boolean/Phrase
S11	TI (chorea* or choreic* or choreo*) or AB (chorea* or choreic* or choreo*)	Search modes - Boolean/Phrase
S10	MH CHOREA+	Search modes - Boolean/Phrase

S9	TI (dystoni*) or AB (dystoni*)	Search modes - Boolean/Phrase
S8	MH DYSTONIA+	Search modes - Boolean/Phrase
S7	TI (involuntar* N2 mov*) or AB (involuntar* N2 mov*)	Search modes - Boolean/Phrase
S6	TI (abnormal N2 mov*) or AB (abnormal N2 mov*)	Search modes - Boolean/Phrase
S5	TI (dyskinesi*) or AB (dyskinesi*)	Search modes - Boolean/Phrase
S4	MH DYSKINESIAS+	Search modes - Boolean/Phrase
S3	TI (spastic* or spasm* or hyperton*) or AB (spastic* or spasm* or hyperton*)	Search modes - Boolean/Phrase
S2	MH SPASM+	Search modes - Boolean/Phrase
S1	MH MUSCLE SPASTICITY	Search modes - Boolean/Phrase

Question 4 Health economics searches

Ovid MEDLINE(R) 1950+

SPAST_Q4_botox_economic_medline_110810

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	MUSCLE SPASTICITY/
9	exp SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	exp DYSKINESIAS/
14	dyskinesi$.ti,ab.

15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	exp DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	(chorea$ or choreic$ or choreo$).ti,ab.
20	exp ATHETOSIS/
21	(athetos$ or athetoid).ti,ab.
22	MUSCLE WEAKNESS/
23	(musc$ adj3 weak$).ti,ab.
24	exp ATAXIA/
25	atax$.ti,ab.
26	upper motor neuron? lesion$.ti,ab.
27	or/8-26
28	exp BRAIN INJURIES/
29	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
30	ABI.ti,ab.
31	static encephalopath$.ti,ab.
32	CEREBRAL PALSY/
33	(cerebral adj3 pals$).ti,ab.
34	exp MENINGITIS/
35	(meningitis or meningococcal).ti,ab.
36	exp CRANIOCEREBRAL TRAUMA/
37	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp ENCEPHALITIS/
39	encephaliti$.ti,ab.
40	exp STROKE/
41	stroke$.ti,ab.
42	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
43	exp CEREBROVASCULAR DISORDERS/
44	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
45	exp HYDROCEPHALUS/
46	hydrocephal$.ti,ab.
47	SHAKEN BABY SYNDROME/
48	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
49	or/28-48
50	exp PARALYSIS/

51	HEMIPLEGIA/
52	exp PARAPLEGIA/
53	QUADRIPLEGIA/
54	exp PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	or/50-56
58	and/27,57
59	and/49,57
60	and/27,49
61	or/58-60
62	exp BOTULINUM TOXINS/
63	BOTULINUM TOXIN TYPE A/
64	botulinum$.ti,ab.
65	(BTA or BTB or BTX or BoNT$ or BoTx).ti,ab.
66	(botox or dysport or azzalure or oculinum or prosigne or purtox or reloxin or vistabel or xeomin or bocouture).ti,ab.
67	(neurobloc or myobloc).ti,ab.
68	or/62-67
69	and/61,68
70	limit 69 to english language
71	limit 70 to animals
72	limit 70 to (animals and humans)
73	71 not 72
74	70 not 73
75	and/7,74

1
2

EBM Reviews - Cochrane Central Register of Controlled Trials

SPAST_Q4_botox_economic_cctr_110810

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	MUSCLE SPASTICITY/
9	exp SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	exp DYSKINESIAS/
14	dyskinesi$.ti,ab.
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	exp DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	(chorea$ or choreic$ or choreo$).ti,ab.
20	exp ATHETOSIS/
21	(athetos$ or athetoid).ti,ab.
22	MUSCLE WEAKNESS/
23	(musc$ adj3 weak$).ti,ab.
24	exp ATAXIA/
25	atax$.ti,ab.
26	upper motor neuron? lesion$.ti,ab.
27	or/8-26
28	exp BRAIN INJURIES/
29	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
30	ABI.ti,ab.
31	static encephalopath$.ti,ab.
32	CEREBRAL PALSY/
33	(cerebral adj3 pals$).ti,ab.
34	exp MENINGITIS/

35	(meningitis or meningococcal).ti,ab.
36	exp CRANIOCEREBRAL TRAUMA/
37	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp ENCEPHALITIS/
39	encephaliti$.ti,ab.
40	exp STROKE/
41	stroke$.ti,ab.
42	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
43	exp CEREBROVASCULAR DISORDERS/
44	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
45	exp HYDROCEPHALUS/
46	hydrocephal$.ti,ab.
47	SHAKEN BABY SYNDROME/
48	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
49	or/28-48
50	exp PARALYSIS/
51	HEMIPLEGIA/
52	exp PARAPLEGIA/
53	QUADRIPLEGIA/
54	exp PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	or/50-56
58	and/27,57
59	and/49,57
60	and/27,49
61	or/58-60
62	exp BOTULINUM TOXINS/
63	BOTULINUM TOXIN TYPE A/
64	botulinum$.ti,ab.
65	(BTA or BTB or BTX or BoNT$ or BoTx).ti,ab.
66	(botox or dysport or azzalure or oculinum or prosigne or purtox or reloxin or vistabel or xeomin or bocouture).ti,ab.
67	(neurobloc or myobloc).ti,ab.
68	or/62-67
69	and/61,68

70	and/7,69

EBM Reviews - Health Technology Assessment 3rd Quarter 2010

SPAST_Q4_botox_economic_hta_110810

#	Searches	Results
1	MUSCLE SPASTICITY/	17
2	exp SPASM/	0
3	exp MUSCLE HYPERTONIA/	18
4	(spastic$ or spasm$).tw.	31
5	hyperton$.tw.	4
6	exp DYSKINESIAS/	19
7	dyskinesi$.tw.	6
8	((abnormal$ or involuntar$) adj2 mov$).tw.	0
9	exp DYSTONIA/	9
10	dystoni$.tw.	13
11	exp CHOREA/	0
12	(chorea$ or choreic$ or choreo$).tw.	1
13	exp ATHETOSIS/	0
14	(athetos$ or athetoid).tw.	0
15	MUSCLE WEAKNESS/	0
16	(musc$ adj3 weak$).tw.	2
17	exp ATAXIA/	4
18	atax$.tw.	8
19	upper motor neuron? lesion$.tw.	0
20	or/1-19	64
21	exp BRAIN INJURIES/	21
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.	3
23	ABI.tw.	5
24	static encephalopath$.tw.	0
25	CEREBRAL PALSY/	20
26	(cerebral adj3 pals$).tw.	31
27	exp MENINGITIS/	4
28	(meningitis or meningococcal).tw.	12
29	exp CRANIOCEREBRAL TRAUMA/	32
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.	46
31	exp ENCEPHALITIS/	1

32	encephaliti$.tw.	3
33	exp STROKE/	1
34	stroke$.tw.	166
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw.	37
36	exp CEREBROVASCULAR DISORDERS/	99
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.	34
38	exp HYDROCEPHALUS/	3
39	hydrocephal$.tw.	4
40	SHAKEN BABY SYNDROME/	0
41	(shak$ adj3 (injur$ or syndrome$)).tw.	0
42	or/21-41	311
43	exp PARALYSIS/	10
44	HEMIPLEGIA/	0
45	exp PARAPLEGIA/	2
46	QUADRIPLEGIA/	2
47	exp PARESIS/	1
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw.	4
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw.	0
50	or/43-49	13
51	and/20,50	2
52	and/42,50	3
53	and/20,42	14
54	or/51-53	15
55	exp BOTULINUM TOXINS/	9
56	BOTULINUM TOXIN TYPE A/	5
57	botulinum$.tw.	24
58	(BTA or BTB or BTX or BoNT$ or BoTx).tw.	11
59	(botox or dysport or azzalure or oculinum or prosigne or purtox or reloxin or vistabel or xeomin or bocouture).tw.	1
60	(neurobloc or myobloc).tw.	0
61	or/55-60	27
62	and/54,61	7

1
2

EBM Reviews - NHS Economic Evaluation Database

SPAST_Q4_botox_economic_nhseed_110810

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).tw.
5	hyperton$.tw.
6	exp DYSKINESIAS/
7	dyskinesi$.tw.
8	((abnormal$ or involuntar$) adj2 mov$).tw.
9	exp DYSTONIA/
10	dystoni$.tw.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).tw.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).tw.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).tw.
17	exp ATAXIA/
18	atax$.tw.
19	upper motor neuron? lesion$.tw.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.
23	ABI.tw.
24	static encephalopath$.tw.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).tw.
27	exp MENINGITIS/
28	(meningitis or meningococcal).tw.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.
31	exp ENCEPHALITIS/
32	encephaliti$.tw.
33	exp STROKE/

34	stroke$.tw.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.
38	exp HYDROCEPHALUS/
39	hydrocephal$.tw.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).tw.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	exp BOTULINUM TOXINS/
56	BOTULINUM TOXIN TYPE A/
57	botulinum$.tw.
58	(BTA or BTB or BTX or BoNT$ or BoTx).tw.
59	(botox or dysport or azzalure or oculinum or prosigne or purtox or reloxin or vistabel or xeomin or bocouture).tw.
60	(neurobloc or myobloc).tw.
61	or/55-60
62	and/54,61

1
2

EMBASE 1980+

SPAST_Q4_botox_economic_embase_110810

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	SPASTICITY/
9	exp MUSCLE SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	DYSKINESIA/
14	dyskinesi$.ti,ab.
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	CHOREOATHETOSIS/
20	ATHETOSIS/
21	(chorea$ or choreic$ or choreo$).ti,ab.
22	(athetos$ or athetoid).ti,ab.
23	exp MUSCLE WEAKNESS/
24	(musc$ adj3 weak$).ti,ab.
25	exp ATAXIA/
26	atax$.ti,ab.
27	upper motor neuron? lesion$.ti,ab.
28	or/8-27
29	exp BRAIN INJURY/
30	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
31	ABI.ti,ab.
32	static encephalopath$.ti,ab.
33	CEREBRAL PALSY/
34	(cerebral adj3 pals$).ti,ab.

35	exp MENINGITIS/
36	(meningitis or meningococcal).ti,ab.
37	exp HEAD INJURY/
38	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
39	exp ENCEPHALITIS/
40	encephaliti$.ti,ab.
41	STROKE/
42	stroke$.ti,ab.
43	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
44	exp CEREBROVASCULAR DISEASE/
45	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
46	exp HYDROCEPHALUS/
47	hydrocephal$.ti,ab.
48	SHAKEN BABY SYNDROME/
49	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
50	or/29-49
51	exp PARALYSIS/ or MONOPLEGIA/ or HEMIPLEGIA/ or PARAPLEGIA/ or QUADRIPLEGIA/
52	SPASTIC PARAPLEGIA/
53	PARESIS/ or MONOPARESIS/ or HEMIPARESIS/
54	SPASTIC PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	or/51-56
58	and/28,57
59	and/50,57
60	and/28,50
61	or/58-60
62	BOTULINUM TOXIN/
63	BOTULINUM TOXIN A/
64	BOTULINUM TOXIN B/
65	botulinum$.ti,ab.
66	(BTA or BTB or BTX or BoNT$ or BoTx).ti,ab.
67	(botox or dysport or azzalure or oculinum or prosigne or purtox or reloxin or vistabel or xeomin or bocouture).ti,ab.
68	(neurobloc or myobloc).ti,ab.

69	or/62-68
70	and/61,69
71	limit 70 to english language
72	and/7,71

Question 5 In children and young people with spasticity due to a non-progressive brain disorder does an intrathecal baclofen test (ITB-T) help to identify those likely to benefit from pump-administered continuous intrathecal baclofen (CITB)?

Question 6 In children and young people with spasticity due to a non-progressive brain disorder what are the benefits and risks of continuous intrathecal baclofen therapy (CITB)?

These questions were addressed through a single search

Ovid MEDLINE(R) 1950+

SPAST_Q5-6_baclofen_medline_270710

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	exp DYSKINESIAS/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	exp DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).ti,ab.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).ti,ab.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).ti,ab.
17	exp ATAXIA/
18	atax$.ti,ab.
19	upper motor neuron? lesion$.ti,ab.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
23	ABI.ti,ab.

24	static encephalopath$.ti,ab.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).ti,ab.
27	exp MENINGITIS/
28	(meningitis or meningococcal).ti,ab.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
31	exp ENCEPHALITIS/
32	encephaliti$.ti,ab.
33	exp STROKE/
34	stroke$.ti,ab.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp HYDROCEPHALUS/
39	hydrocephal$.ti,ab.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	BACLOFEN/
56	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.
57	ITB.ti,ab.
58	or/55-57
59	and/54,58

60	limit 59 to english language
61	limit 60 to animals
62	limit 60 to (animals and humans)
63	61 not 62
64	60 not 63

Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations

SPAST_Q5-6_baclofen_medline_in-process_290610

#	Searches
1	(spastic$ or spasm$).ti,ab.
2	hyperton$.ti,ab.
3	dyskinesi$.ti,ab.
4	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
5	dystoni$.ti,ab.
6	(chorea$ or choreic$ or choreo$).ti,ab.
7	(athetos$ or athetoid).ti,ab.
8	(musc$ adj3 weak$).ti,ab.
9	atax$.ti,ab.
10	upper motor neuron? lesion$.ti,ab.
11	or/1-10
12	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
13	ABI.ti,ab.
14	static encephalopath$.ti,ab.
15	(cerebral adj3 pals$).ti,ab.
16	(meningitis or meningococcal).ti,ab.
17	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
18	encephaliti$.ti,ab.
19	stroke$.ti,ab.
20	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
21	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
22	hydrocephal$.ti,ab.
23	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
24	or/12-23
25	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
26	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
27	or/25-26
28	and/11,27
29	and/24,27
30	and/11,24
31	or/28-30

32	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.
33	ITB.ti,ab.
34	or/32-33
35	and/31,34

1
2

EBM Reviews - Cochrane Central Register of Controlled Trials

SPAST_Q5-6_baclofen_cctr_290610

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	exp DYSKINESIAS/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	exp DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).ti,ab.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).ti,ab.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).ti,ab.
17	exp ATAXIA/
18	atax$.ti,ab.
19	upper motor neuron? lesion$.ti,ab.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
23	ABI.ti,ab.
24	static encephalopath$.ti,ab.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).ti,ab.
27	exp MENINGITIS/
28	(meningitis or meningococcal).ti,ab.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
31	exp ENCEPHALITIS/
32	encephaliti$.ti,ab.
33	exp STROKE/

34	stroke$.ti,ab.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp HYDROCEPHALUS/
39	hydrocephal$.ti,ab.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	BACLOFEN/
56	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.
57	ITB.ti,ab.
58	or/55-57
59	and/54,58

1
2

EBM Reviews - Cochrane Database of Systematic Reviews 2005+, EBM Reviews - Database of Abstracts of Reviews of Effects

SPAST_Q5-6_baclofen_cdsrdare_290610

#	Searches
1	MUSCLE SPASTICITY.kw.
2	SPASM.kw.
3	MUSCLE HYPERTONIA.kw.
4	(spastic$ or spasm$).tw,tx.
5	hyperton$.tw,tx.
6	DYSKINESIAS.kw.
7	dyskinesi$.tw,tx.
8	((abnormal$ or involuntar$) adj2 mov$).tw,tx.
9	DYSTONIA.kw.
10	dystoni$.tw,tx.
11	CHOREA.kw.
12	(chorea$ or choreic$ or choreo$).tw,tx.
13	ATHETOSIS.kw.
14	(athetos$ or athetoid).tw,tx.
15	MUSCLE WEAKNESS.kw.
16	(musc$ adj3 weak$).tw,tx.
17	ATAXIA.kw.
18	atax$.tw,tx.
19	upper motor neuron? lesion$.tw,tx.
20	or/1-19
21	BRAIN INJURIES.kw.
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw,tx.
23	ABI.tw,tx.
24	static encephalopath$.tw,tx.
25	CEREBRAL PALSY.kw.
26	(cerebral adj3 pals$).tw,tx.
27	MENINGITIS.kw.
28	(meningitis or meningococcal).tw,tx.
29	CRANIOCEREBRAL TRAUMA.kw.
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw,tx.
31	ENCEPHALITIS.kw.
32	encephaliti$.tw,tx.
33	STROKE.kw.

34	stroke$.tw,tx.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw,tx.
36	CEREBROVASCULAR DISORDERS.kw.
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw,tx.
38	HYDROCEPHALUS.kw.
39	hydrocephal$.tw,tx.
40	SHAKEN BABY SYNDROME.kw.
41	(shak$ adj3 (injur$ or syndrome$)).tw,tx.
42	or/21-41
43	PARALYSIS.kw.
44	HEMIPLEGIA.kw.
45	PARAPLEGIA.kw.
46	QUADRIPLEGIA.kw.
47	PARESIS.kw.
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw,tx.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw,tx.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	BACLOFEN.kw.
56	(baclofen or baclophen or lioresal or spinax or lyflex).tw,tx.
57	ITB.tw,tx.
58	or/55-57
59	and/54,58

EMBASE 1980+

SPAST_Q5-6_baclofen_embase_270710

#	Searches
1	SPASTICITY/
2	exp MUSCLE SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	DYSKINESIA/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	CHOREOATHETOSIS/
13	ATHETOSIS/
14	(chorea$ or choreic$ or choreo$).ti,ab.
15	(athetos$ or athetoid).ti,ab.
16	exp MUSCLE WEAKNESS/
17	(musc$ adj3 weak$).ti,ab.
18	exp ATAXIA/
19	atax$.ti,ab.
20	upper motor neuron? lesion$.ti,ab.
21	or/1-20
22	exp BRAIN INJURY/
23	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
24	ABI.ti,ab.
25	static encephalopath$.ti,ab.
26	CEREBRAL PALSY/
27	(cerebral adj3 pals$).ti,ab.
28	exp MENINGITIS/
29	(meningitis or meningococcal).ti,ab.
30	exp HEAD INJURY/
31	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
32	exp ENCEPHALITIS/
33	encephaliti$.ti,ab.

34	STROKE/
35	stroke$.ti,ab.
36	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
37	exp CEREBROVASCULAR DISEASE/
38	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
39	exp HYDROCEPHALUS/
40	hydrocephal$.ti,ab.
41	SHAKEN BABY SYNDROME/
42	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
43	or/22-42
44	exp PARALYSIS/ or MONOPLEGIA/ or HEMIPLEGIA/ or PARAPLEGIA/ or QUADRIPLEGIA/
45	SPASTIC PARAPLEGIA/
46	PARESIS/ or MONOPARESIS/ or HEMIPARESIS/
47	SPASTIC PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	or/44-49
51	and/21,50
52	and/43,50
53	and/21,43
54	or/51-53
55	BACLOFEN/
56	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.
57	ITB.ti,ab.
58	or/55-57
59	and/54,58
60	limit 59 to english language

CINAHL 1981+

SPAST_Q5-6_baclofen_cinahl_290610

#	Query	Limiters/Expanders
S125	S118 and S123	Limiters - Exclude MEDLINE records Search modes -

		Boolean/Phrase
S124	S118 and S123	Search modes - Boolean/Phrase
S123	S119 or S120 or S121 or S122	Search modes - Boolean/Phrase
S122	TI (ITB) or AB (ITB)	Search modes - Boolean/Phrase
S121	AB (baclofen or baclophen or lioresal or spinax or lyflex)	Search modes - Boolean/Phrase
S120	TI (baclofen or baclophen or lioresal or spinax or lyflex)	Search modes - Boolean/Phrase
S119	MH BACLOFEN	Search modes - Boolean/Phrase
S118	S115 or S116 or S117	Search modes - Boolean/Phrase
S117	S105 and S114	Search modes - Boolean/Phrase
S116	S18 and S114	Search modes - Boolean/Phrase
S115	S18 and S105	Search modes - Boolean/Phrase
S114	S106 or S107 or S108 or S109 or S110 or S111 or S112 or S113	Search modes - Boolean/Phrase
S113	AB (monopares* or dipares* or hemipares* or quadripares* or tetrapares*)	Search modes - Boolean/Phrase
S112	TI (monopares* or dipares* or hemipares* or quadripares* or tetrapares*)	Search modes - Boolean/Phrase
S111	AB (monoplegi* or diplegi* or hemiplegi* or quadriplegi* or tetraplegi*)	Search modes - Boolean/Phrase
S110	TI (monoplegi* or diplegi* or hemiplegi* or quadriplegi* or tetraplegi*)	Search modes - Boolean/Phrase
S109	MH QUADRIPLEGIA	Search modes - Boolean/Phrase
S108	MH PARAPLEGIA	Search modes - Boolean/Phrase
S107	MH HEMIPLEGIA	Search modes - Boolean/Phrase
S106	MH PARALYSIS+	Search modes - Boolean/Phrase
S105	S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32 or S33 or S34 or S35 or S36 or S37 or S38 or S39 or S40 or S41 or S42 or S43 or S44	Search modes - Boolean/Phrase

	or S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58 or S59 or S60 or S61 or S62 or S63 or S64 or S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73 or S74 or S75 or S76 or S77 or S78 or S79 or S80 or S81 or S82 or S83 or S84 or S85 or S86 or S87 or S88 or S89 or S90 or S91 or S92 or S93 or S94 or S95 or S96 or S97 or S98 or S99 or S100 or S101 or S102 or S103 or S104	
S104	TI (shak* N3 syndrome*) or AB (shak* N3 syndrome*)	Search modes - Boolean/Phrase
S103	TI (shak* N3 injur*) or AB (shak* N3 injur*)	Search modes - Boolean/Phrase
S102	MH SHAKEN BABY SYNDROME	Search modes - Boolean/Phrase
S101	TI (hydrocephal*) or AB (hydrocephal*)	Search modes - Boolean/Phrase
S100	MH HYDROCEPHALUS+	Search modes - Boolean/Phrase
S99	TI (cerebrovascular N2 insult*) or AB (cerebrovascular N2 insult*)	Search modes - Boolean/Phrase
S98	TI (cerebrovascular N2 disturb*) or AB (cerebrovascular N2 disturb*)	Search modes - Boolean/Phrase
S97	TI (cerebrovascular N2 damage*) or AB (cerebrovascular N2 damage*)	Search modes - Boolean/Phrase
S96	TI (cerebrovascular N2 occlusion*) or AB (cerebrovascular N2 occlusion*)	Search modes - Boolean/Phrase
S95	TI (cerebrovascular N2 insufficien*) or AB (cerebrovascular N2 insufficien*)	Search modes - Boolean/Phrase
S94	TI (cerebrovascular N2 disease*) or AB (cerebrovascular N2 disease*)	Search modes - Boolean/Phrase
S93	TI (cerebrovascular N2 disorder*) or AB (cerebrovascular N2 disorder*)	Search modes - Boolean/Phrase
S92	TI (intracranial vascular N2 insult*) or AB (intracranial vascular N2 insult*)	Search modes - Boolean/Phrase
S91	TI (intracranial vascular N2 disturb*) or AB (intracranial vascular N2 disturb*)	Search modes - Boolean/Phrase
S90	TI (intracranial vascular N2 damage*) or AB (intracranial vascular N2 damage*)	Search modes - Boolean/Phrase
S89	TI (intracranial vascular N2 occlusion*) or AB (intracranial vascular N2 occlusion*)	Search modes - Boolean/Phrase
S88	TI (intracranial vascular N2 insufficien*) or AB (intracranial vascular N2 insufficien*)	Search modes - Boolean/Phrase

S87	TI (intracranial vascular N2 disease*) or AB (intracranial vascular N2 disease*)	Search modes - Boolean/Phrase
S86	TI (intracranial vascular N2 disorder*) or AB (intracranial vascular N2 disorder*)	Search modes - Boolean/Phrase
S85	TI (intra-cranial vascular N2 insult*) or AB (intra-cranial vascular N2 insult*)	Search modes - Boolean/Phrase
S84	TI (intra-cranial vascular N2 disturb*) or AB (intra-cranial vascular N2 disturb*)	Search modes - Boolean/Phrase
S83	TI (intra-cranial vascular N2 damage*) or AB (intra-cranial vascular N2 damage*)	Search modes - Boolean/Phrase
S82	TI (intra-cranial vascular N2 occlusion*) or AB (intra-cranial vascular N2 occlusion*)	Search modes - Boolean/Phrase
S81	TI (intra-cranial vascular N2 insufficien*) or AB (intra-cranial vascular N2 insufficien*)	Search modes - Boolean/Phrase
S80	TI (intra-cranial vascular N2 disease*) or AB (intra-cranial vascular N2 disease*)	Search modes - Boolean/Phrase
S79	TI (intra-cranial vascular N2 disorder*) or AB (intra-cranial vascular N2 disorder*)	Search modes - Boolean/Phrase
S78	TI (brain vascular N2 insult*) or AB (brain vascular N2 insult*)	Search modes - Boolean/Phrase
S77	TI (brain vascular N2 disturb*) or AB (brain vascular N2 disturb*)	Search modes - Boolean/Phrase
S76	TI (brain vascular N2 damage*) or AB (brain vascular N2 damage*)	Search modes - Boolean/Phrase
S75	TI (brain vascular N2 occlusion*) or AB (brain vascular N2 occlusion*)	Search modes - Boolean/Phrase
S74	TI (brain vascular N2 insufficien*) or AB (brain vascular N2 insufficien*)	Search modes - Boolean/Phrase
S73	TI (brain vascular N2 disease*) or AB (brain vascular N2 disease*)	Search modes - Boolean/Phrase
S72	TI (brain vascular N2 disorder*) or AB (brain vascular N2 disorder*)	Search modes - Boolean/Phrase
S71	MH CEREBROVASCULAR DISORDERS+	Search modes - Boolean/Phrase
S70	TI (intracranial N3 isch#emi*) or AB (intracranial N3 isch#emi*)	Search modes - Boolean/Phrase
S69	TI (intracranial N3 aneurysm*) or AB (intracranial N3 aneurysm*)	Search modes - Boolean/Phrase
S68	TI (intracranial N3 embolism) or AB (intracranial N3 embolism)	Search modes - Boolean/Phrase
S67	TI (intra-cranial N3 isch#emi*) or AB (intra-cranial N3 isch#emi*)	Search modes - Boolean/Phrase

S66	TI (intra-cranial N3 aneurysm*) or AB (intra-cranial N3 aneurysm*)	Search modes - Boolean/Phrase
S65	TI (intra-cranial N3 embolism) or AB (intra-cranial N3 embolism)	Search modes - Boolean/Phrase
S64	TI (cerebral N3 isch#emi*) or AB (cerebral N3 isch#emi*)	Search modes - Boolean/Phrase
S63	TI (cerebral N3 aneurysm*) or AB (cerebral N3 aneurysm*)	Search modes - Boolean/Phrase
S62	TI (cerebral N3 embolism) or AB (cerebral N3 embolism)	Search modes - Boolean/Phrase
S61	TI (brain N3 isch#emi*) or AB (brain N3 isch#emi*)	Search modes - Boolean/Phrase
S60	TI (brain N3 aneurysm*) or AB (brain N3 aneurysm*)	Search modes - Boolean/Phrase
S59	TI (brain N3 embolism) or AB (brain N3 embolism)	Search modes - Boolean/Phrase
S58	TI (stroke*) or AB (stroke*)	Search modes - Boolean/Phrase
S57	MH STROKE	Search modes - Boolean/Phrase
S56	TI (encephaliti*) or AB (encephaliti*)	Search modes - Boolean/Phrase
S55	MH ENCEPHALITIS+	Search modes - Boolean/Phrase
S54	TI (craniocerebral N3 insult*) or AB (craniocerebral N3 insult*)	Search modes - Boolean/Phrase
S53	TI (craniocerebral N3 disturb*) or AB (craniocerebral N3 disturb*)	Search modes - Boolean/Phrase
S52	TI (craniocerebral N3 damage*) or AB (craniocerebral N3 damage*)	Search modes - Boolean/Phrase
S51	TI (craniocerebral N3 trauma*) or AB (craniocerebral N3 trauma*)	Search modes - Boolean/Phrase
S50	TI (craniocerebral N3 injur*) or AB (craniocerebral N3 injur*)	Search modes - Boolean/Phrase
S49	TI (cerebral N3 insult*) or AB (cerebral N3 insult*)	Search modes - Boolean/Phrase
S48	TI (cerebral N3 disturb*) or AB (cerebral N3 disturb*)	Search modes - Boolean/Phrase
S47	TI (cerebral N3 damage*) or AB (cerebral N3 damage*)	Search modes - Boolean/Phrase
S46	TI (cerebral N3 trauma*) or AB (cerebral N3 trauma*)	Search modes - Boolean/Phrase

S45	TI (cerebral N3 injur*) or AB (cerebral N3 injur*)	Search modes - Boolean/Phrase
S44	TI (skull N3 insult*) or AB (skull N3 insult*)	Search modes - Boolean/Phrase
S43	TI (skull N3 disturb*) or AB (skull N3 disturb*)	Search modes - Boolean/Phrase
S42	TI (skull N3 damage*) or AB (skull N3 damage*)	Search modes - Boolean/Phrase
S41	TI (skull N3 trauma*) or AB (skull N3 trauma*)	Search modes - Boolean/Phrase
S40	TI (skull N3 injur*) or AB (skull N3 injur*)	Search modes - Boolean/Phrase
S39	TI (brain N3 insult*) or AB (brain N3 insult*)	Search modes - Boolean/Phrase
S38	TI (brain N3 disturb*) or AB (brain N3 disturb*)	Search modes - Boolean/Phrase
S37	TI (brain N3 damage*) or AB (brain N3 damage*)	Search modes - Boolean/Phrase
S36	TI (brain N3 trauma*) or AB (brain N3 trauma*)	Search modes - Boolean/Phrase
S35	TI (brain N3 injur*) or AB (brain N3 injur*)	Search modes - Boolean/Phrase
S34	TI (head N3 insult*) or AB (head N3 insult*)	Search modes - Boolean/Phrase
S33	TI (head N3 disturb*) or AB (head N3 disturb*)	Search modes - Boolean/Phrase
S32	TI (head N3 damage*) or AB (head N3 damage*)	Search modes - Boolean/Phrase
S31	TI (head N3 trauma*) or AB (head N3 trauma*)	Search modes - Boolean/Phrase
S30	TI (head N3 injur*) or AB (head N3 injur*)	Search modes - Boolean/Phrase
S29	MH HEAD INJURIES+	Search modes - Boolean/Phrase
S28	TI (meningitis or meningococcal) or AB (meningitis or meningococcal)	Search modes - Boolean/Phrase
S27	MH MENINGITIS+	Search modes - Boolean/Phrase
S26	TI (cerebral N3 pals*) or AB (cerebral N3 pals*)	Search modes - Boolean/Phrase
S25	MH CEREBRAL PALSY	Search modes - Boolean/Phrase

S24	TI (static encephalopath*) or AB (static encephalopath*)	Search modes - Boolean/Phrase
S23	TI (ABI) or AB (ABI)	Search modes - Boolean/Phrase
S22	TI (acquired N2 brain injur*) or AB (acquired N2 brain injur*)	Search modes - Boolean/Phrase
S21	TI (nonprogressive N2 brain injur*) or AB (nonprogressive N2 brain injur*)	Search modes - Boolean/Phrase
S20	TI (non-progressive N2 brain injur*) or AB (non-progressive N2 brain injur*)	Search modes - Boolean/Phrase
S19	MH BRAIN INJURIES+	Search modes - Boolean/Phrase
S18	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17	Search modes - Boolean/Phrase
S17	TI (upper motor neuron# lesion*) or AB (upper motor neuron# lesion*)	Search modes - Boolean/Phrase
S16	TI (atax*) or AB (atax*)	Search modes - Boolean/Phrase
S15	MH ATAXIA	Search modes - Boolean/Phrase
S14	TI (musc* N3 weak*) or AB (musc* N3 weak*)	Search modes - Boolean/Phrase
S13	MH MUSCLE WEAKNESS	Search modes - Boolean/Phrase
S12	TI (athetos* or athetoid*) or AB (athetos* or athetoid*)	Search modes - Boolean/Phrase
S11	TI (chorea* or choreic* or choreo*) or AB (chorea* or choreic* or choreo*)	Search modes - Boolean/Phrase
S10	MH CHOREA+	Search modes - Boolean/Phrase
S9	TI (dystoni*) or AB (dystoni*)	Search modes - Boolean/Phrase
S8	MH DYSTONIA+	Search modes - Boolean/Phrase
S7	TI (involuntar* N2 mov*) or AB (involuntar* N2 mov*)	Search modes - Boolean/Phrase
S6	TI (abnormal N2 mov*) or AB (abnormal N2 mov*)	Search modes - Boolean/Phrase
S5	TI (dyskinesi*) or AB (dyskinesi*)	Search modes - Boolean/Phrase
S4	MH DYSKINESIAS+	Search modes - Boolean/Phrase

S3	TI (spastic* or spasm* or hyperton*) or AB (spastic* or spasm* or hyperton*)	Search modes - Boolean/Phrase
S2	MH SPASM+	Search modes - Boolean/Phrase
S1	MH MUSCLE SPASTICITY	Search modes - Boolean/Phrase

Questions 5 and 6 Health economics searches

Ovid MEDLINE(R) 1950+

SPAST_Q5-6_baclofen_economic_medline_110810

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	MUSCLE SPASTICITY/
9	exp SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	exp DYSKINESIAS/
14	dyskinesi$.ti,ab.
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	exp DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	(chorea$ or choreic$ or choreo$).ti,ab.
20	exp ATHETOSIS/
21	(athetos$ or athetoid).ti,ab.
22	MUSCLE WEAKNESS/
23	(musc$ adj3 weak$).ti,ab.
24	exp ATAXIA/

25	atax$.ti,ab.
26	upper motor neuron? lesion$.ti,ab.
27	or/8-26
28	exp BRAIN INJURIES/
29	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
30	ABI.ti,ab.
31	static encephalopath$.ti,ab.
32	CEREBRAL PALSY/
33	(cerebral adj3 pals$).ti,ab.
34	exp MENINGITIS/
35	(meningitis or meningococcal).ti,ab.
36	exp CRANIOCEREBRAL TRAUMA/
37	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp ENCEPHALITIS/
39	encephaliti$.ti,ab.
40	exp STROKE/
41	stroke$.ti,ab.
42	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
43	exp CEREBROVASCULAR DISORDERS/
44	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
45	exp HYDROCEPHALUS/
46	hydrocephal$.ti,ab.
47	SHAKEN BABY SYNDROME/
48	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
49	or/28-48
50	exp PARALYSIS/
51	HEMIPLEGIA/
52	exp PARAPLEGIA/
53	QUADRIPLEGIA/
54	exp PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	or/50-56
58	and/27,57
59	and/49,57
60	and/27,49

61	or/58-60
62	BACLOFEN/
63	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.
64	ITB.ti,ab.
65	or/62-64
66	and/61,65
67	limit 66 to english language
68	limit 67 to animals
69	limit 67 to (animals and humans)
70	68 not 69
71	67 not 70
72	and/7,71

1
2

EBM Reviews - Cochrane Central Register of Controlled Trials

SPAST_Q5-6_baclofen_economic_cctr_110810

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	MUSCLE SPASTICITY/
9	exp SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	exp DYSKINESIAS/
14	dyskinesi$.ti,ab.
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	exp DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	(chorea$ or choreic$ or choreo$).ti,ab.
20	exp ATHETOSIS/
21	(athetos$ or athetoid).ti,ab.
22	MUSCLE WEAKNESS/
23	(musc$ adj3 weak$).ti,ab.
24	exp ATAXIA/
25	atax$.ti,ab.
26	upper motor neuron? lesion$.ti,ab.
27	or/8-26
28	exp BRAIN INJURIES/
29	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
30	ABI.ti,ab.
31	static encephalopath$.ti,ab.
32	CEREBRAL PALSY/
33	(cerebral adj3 pals$).ti,ab.
34	exp MENINGITIS/

35	(meningitis or meningococcal).ti,ab.
36	exp CRANIOCEREBRAL TRAUMA/
37	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp ENCEPHALITIS/
39	encephaliti$.ti,ab.
40	exp STROKE/
41	stroke$.ti,ab.
42	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
43	exp CEREBROVASCULAR DISORDERS/
44	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
45	exp HYDROCEPHALUS/
46	hydrocephal$.ti,ab.
47	SHAKEN BABY SYNDROME/
48	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
49	or/28-48
50	exp PARALYSIS/
51	HEMIPLEGIA/
52	exp PARAPLEGIA/
53	QUADRIPLEGIA/
54	exp PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	or/50-56
58	and/27,57
59	and/49,57
60	and/27,49
61	or/58-60
62	BACLOFEN/
63	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.
64	ITB.ti,ab.
65	or/62-64
66	and/61,65
67	and/7,66

EBM Reviews - Health Technology Assessment

SPAST_Q5-6_baclofen_economic_hta_110810

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).tw.
5	hyperton$.tw.
6	exp DYSKINESIAS/
7	dyskinesi$.tw.
8	((abnormal$ or involuntar$) adj2 mov$).tw.
9	exp DYSTONIA/
10	dystoni$.tw.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).tw.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).tw.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).tw.
17	exp ATAXIA/
18	atax$.tw.
19	upper motor neuron? lesion$.tw.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.
23	ABI.tw.
24	static encephalopath$.tw.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).tw.
27	exp MENINGITIS/
28	(meningitis or meningococcal).tw.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.
31	exp ENCEPHALITIS/
32	encephaliti$.tw.
33	exp STROKE/

34	stroke$.tw.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.
38	exp HYDROCEPHALUS/
39	hydrocephal$.tw.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).tw.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	BACLOFEN/
56	(baclofen or baclophen or lioresal or spinax or lyflex).tw.
57	ITB.tw.
58	or/55-57
59	and/54,58

1
2

EBM Reviews - NHS Economic Evaluation Database

SPAST_Q5-6_baclofen_economic_nhseed_110810

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).tw.
5	hyperton$.tw.
6	exp DYSKINESIAS/
7	dyskinesi$.tw.
8	((abnormal$ or involuntar$) adj2 mov$).tw.
9	exp DYSTONIA/
10	dystoni$.tw.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).tw.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).tw.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).tw.
17	exp ATAXIA/
18	atax$.tw.
19	upper motor neuron? lesion$.tw.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.
23	ABI.tw.
24	static encephalopath$.tw.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).tw.
27	exp MENINGITIS/
28	(meningitis or meningococcal).tw.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.
31	exp ENCEPHALITIS/
32	encephaliti$.tw.
33	exp STROKE/

34	stroke$.tw.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.
38	exp HYDROCEPHALUS/
39	hydrocephal$.tw.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).tw.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	BACLOFEN/
56	(baclofen or baclophen or lioresal or spinax or lyflex).tw.
57	ITB.tw.
58	or/55-57
59	and/54,58

1
2

EMBASE 1980+

SPAST_Q5-6_baclofen_economic_embase_110810

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	SPASTICITY/
9	exp MUSCLE SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	DYSKINESIA/
14	dyskinesi$.ti,ab.
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	CHOREOATHETOSIS/
20	ATHETOSIS/
21	(chorea$ or choreic$ or choreo$).ti,ab.
22	(athetos$ or athetoid).ti,ab.
23	exp MUSCLE WEAKNESS/
24	(musc$ adj3 weak$).ti,ab.
25	exp ATAXIA/
26	atax$.ti,ab.
27	upper motor neuron? lesion$.ti,ab.
28	or/8-27
29	exp BRAIN INJURY/
30	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
31	ABI.ti,ab.
32	static encephalopath$.ti,ab.
33	CEREBRAL PALSY/
34	(cerebral adj3 pals$).ti,ab.

35	exp MENINGITIS/
36	(meningitis or meningococcal).ti,ab.
37	exp HEAD INJURY/
38	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
39	exp ENCEPHALITIS/
40	encephaliti$.ti,ab.
41	STROKE/
42	stroke$.ti,ab.
43	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
44	exp CEREBROVASCULAR DISEASE/
45	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
46	exp HYDROCEPHALUS/
47	hydrocephal$.ti,ab.
48	SHAKEN BABY SYNDROME/
49	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
50	or/29-49
51	exp PARALYSIS/ or MONOPLEGIA/ or HEMIPLEGIA/ or PARAPLEGIA/ or QUADRIPLEGIA/
52	SPASTIC PARAPLEGIA/
53	PARESIS/ or MONOPARESIS/ or HEMIPARESIS/
54	SPASTIC PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	or/51-56
58	and/28,57
59	and/50,57
60	and/28,50
61	or/58-60
62	BACLOFEN/
63	(baclofen or baclophen or lioresal or spinax or lyflex).ti,ab.
64	ITB.ti,ab.
65	or/62-64
66	and/61,65
67	limit 66 to english language
68	and/7,67

1

Question 7 What is the effectiveness of orthopaedic surgery in preventing or treating musculoskeletal deformity in children with spasticity caused by a non-progressive brain disorder?

Question 8 What is the effectiveness of single event multilevel orthopaedic surgery (SEMLS) in managing musculoskeletal deformity in children with spasticity caused by a non-progressive brain disorder?

These questions were addressed through a single search

Ovid MEDLINE(R) 1948+

SPAST_Q7-8_orthopaedic_surgery_stem_medline_280111

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	exp DYSKINESIAS/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	exp DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).ti,ab.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).ti,ab.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).ti,ab.
17	exp ATAXIA/
18	atax$.ti,ab.
19	upper motor neuron? lesion$.ti,ab.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
23	ABI.ti,ab.
24	static encephalopath$.ti,ab.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).ti,ab.
27	exp MENINGITIS/
28	(meningitis or meningococcal).ti,ab.
29	exp CRANIOCEREBRAL TRAUMA/

30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
31	exp ENCEPHALITIS/
32	encephaliti$.ti,ab.
33	exp STROKE/
34	stroke$.ti,ab.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp HYDROCEPHALUS/
39	hydrocephal$.ti,ab.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	exp ORTHOPEDIC PROCEDURES/
56	orthop?edic$.ti,ab.
57	TENOTOMY/ or TENDON TRANSFER/ or TENODESIS/
58	(tendon$ or tenotom$ or tenodes$).ti,ab.
59	((musculo tendinous or musculo?tendinous or fractional) adj3 length$).ti,ab.
60	(myotom$ or aponeurotom$).ti,ab.
61	(musc$ adj3 (releas$ or recess$)).ti,ab.
62	exp ARTHRODESIS/
63	arthrodes$.ti,ab.
64	((joint$ or bon$) adj3 fus$).ti,ab.
65	exp OSTEOTOMY/

66	osteotom$.ti,ab.
67	open reduc$.ti,ab.
68	((single event$ or single?event$ or multi level$ or multi?level$ or multi?stage? or stag$ or interval$) adj3 surg$).ti,ab.
69	(SEMS or SEMLS).ti,ab.
70	or/55-69
71	and/54,70
72	limit 71 to english language
73	limit 72 to animals
74	limit 72 to (animals and humans)
75	73 not 74
76	72 not 75

1
2

Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations

SPAST_Q7-8_orthopaedic_surgery_mip_260111

#	Searches
1	(spastic$ or spasm$).ti,ab.
2	hyperton$.ti,ab.
3	dyskinesi$.ti,ab.
4	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
5	dystoni$.ti,ab.
6	(chorea$ or choreic$ or choreo$).ti,ab.
7	(athetos$ or athetoid).ti,ab.
8	(musc$ adj3 weak$).ti,ab.
9	atax$.ti,ab.
10	upper motor neuron? lesion$.ti,ab.
11	or/1-10
12	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
13	ABI.ti,ab.
14	static encephalopath$.ti,ab.
15	(cerebral adj3 pals$).ti,ab.
16	(meningitis or meningococcal).ti,ab.
17	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
18	encephaliti$.ti,ab.
19	stroke$.ti,ab.
20	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
21	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
22	hydrocephal$.ti,ab.
23	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
24	or/12-23
25	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
26	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
27	or/25-26
28	and/11,27
29	and/24,27
30	and/11,24
31	or/28-30

32	orthop?edic$.ti,ab.
33	(tendon$ or tenotom$ or tenodes$).ti,ab.
34	((musculo tendinous or musculo?tendinous or fractional) adj3 length$).ti,ab.
35	(myotom$ or aponeurotom$).ti,ab.
36	(musc$ adj3 (releas$ or recess$)).ti,ab.
37	arthrodes$.ti,ab.
38	((joint$ or bon$) adj3 fus$).ti,ab.
39	osteotom$.ti,ab.
40	open reduc$.ti,ab.
41	((single event$ or single?event$ or multi level$ or multi?level$ or multi?stage? or stag$ or interval$) adj3 surg$).ti,ab.
42	(SEMS or SEMLS).ti,ab.
43	or/32-42
44	and/31,43

1
2

EBM Reviews - Cochrane Central Register of Controlled Trials

SPAST_Q7-8_orthopaedic_surgery_cctr_260111

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	exp DYSKINESIAS/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	exp DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).ti,ab.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).ti,ab.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).ti,ab.
17	exp ATAXIA/
18	atax$.ti,ab.
19	upper motor neuron? lesion$.ti,ab.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
23	ABI.ti,ab.
24	static encephalopath$.ti,ab.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).ti,ab.
27	exp MENINGITIS/
28	(meningitis or meningococcal).ti,ab.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
31	exp ENCEPHALITIS/
32	encephaliti$.ti,ab.
33	exp STROKE/

34	stroke$.ti,ab.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp HYDROCEPHALUS/
39	hydrocephal$.ti,ab.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	exp ORTHOPEDIC PROCEDURES/
56	orthop?edic$.ti,ab.
57	TENOTOMY/ or TENDON TRANSFER/ or TENODESIS/
58	(tendon$ or tenotom$ or tenodes$).ti,ab.
59	((musculo tendinous or musculo?tendinous or fractional) adj3 length$).ti,ab.
60	(myotom$ or aponeurotom$).ti,ab.
61	(musc$ adj3 (releas$ or recess$)).ti,ab.
62	exp ARTHRODESIS/
63	arthrodes$.ti,ab.
64	((joint$ or bon$) adj3 fus$).ti,ab.
65	exp OSTEOTOMY/
66	osteotom$.ti,ab.
67	open reduc$.ti,ab.
68	((single event$ or single?event$ or multi level$ or multi?level$ or multi?stage? or stag$ or interval$) adj3 surg$).ti,ab.
69	(SEMS or SEMLS).ti,ab.

70	or/55-69
71	and/54,70

EBM Reviews - Cochrane Database of Systematic Reviews 2005+, EBM Reviews - Database of Abstracts of Reviews of Effects

SPAST_Q7-8_orthopaedic_surgery_cdsrdare_260111

#	Searches
1	MUSCLE SPASTICITY.kw.
2	SPASM.kw.
3	MUSCLE HYPERTONIA.kw.
4	(spastic$ or spasm$).tw,tx.
5	hyperton$.tw,tx.
6	DYSKINESIAS.kw.
7	dyskinesi$.tw,tx.
8	((abnormal$ or involuntar$) adj2 mov$).tw,tx.
9	DYSTONIA.kw.
10	dystoni$.tw,tx.
11	CHOREA.kw.
12	(chorea$ or choreic$ or choreo$).tw,tx.
13	ATHETOSIS.kw.
14	(athetos$ or athetoid).tw,tx.
15	MUSCLE WEAKNESS.kw.
16	(musc$ adj3 weak$).tw,tx.
17	ATAXIA.kw.
18	atax$.tw,tx.
19	upper motor neuron? lesion$.tw,tx.
20	or/1-19
21	BRAIN INJURIES.kw.
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw,tx.
23	ABI.tw,tx.
24	static encephalopath$.tw,tx.
25	CEREBRAL PALSY.kw.
26	(cerebral adj3 pals$).tw,tx.
27	MENINGITIS.kw.
28	(meningitis or meningococcal).tw,tx.
29	CRANIOCEREBRAL TRAUMA.kw.
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw,tx.
31	ENCEPHALITIS.kw.
32	encephaliti$.tw,tx.
33	STROKE.kw.

34	stroke$.tw,tx.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw,tx.
36	CEREBROVASCULAR DISORDERS.kw.
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw,tx.
38	HYDROCEPHALUS.kw.
39	hydrocephal$.tw,tx.
40	SHAKEN BABY SYNDROME.kw.
41	(shak$ adj3 (injur$ or syndrome$)).tw,tx.
42	or/21-41
43	PARALYSIS.kw.
44	HEMIPLEGIA.kw.
45	PARAPLEGIA.kw.
46	QUADRIPLEGIA.kw.
47	PARESIS.kw.
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw,tx.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw,tx.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	ORTHOPEDIC PROCEDURES.kw.
56	orthop?edic$.tw,tx.
57	(TENOTOMY or TENDON TRANSFER or TENODESIS).kw.
58	(tendon$ or tenotom$ or tenodes$).tw,tx.
59	((musculo tendinous or musculo?tendinous or fractional) adj3 length$).tw,tx.
60	(myotom$ or aponeurotom$).tw,tx.
61	(musc$ adj3 (releas$ or recess$)).tw,tx.
62	ARTHRODESIS.kw.
63	arthrodes$.tw,tx.
64	((joint$ or bon$) adj3 fus$).tw,tx.
65	OSTEOTOMY.kw.
66	osteotom$.tw,tx.
67	open reduc$.tw,tx.
68	((single event$ or single?event$ or multi level$ or multi?level$ or multi?stage? or stag$ or interval$) adj3 surg$).tw,tx.
69	(SEMS or SEMLS).tw,tx.

70	or/55-69
71	and/54,70

Embase 1980+

SPAST_Q7-8_orthopaedic_surgery_stem_embase_280111

#	Searches
1	SPASTICITY/
2	exp MUSCLE SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	DYSKINESIA/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	CHOREOATHETOSIS/
13	ATHETOSIS/
14	(chorea$ or choreic$ or choreo$).ti,ab.
15	(athetos$ or athetoid).ti,ab.
16	exp MUSCLE WEAKNESS/
17	(musc$ adj3 weak$).ti,ab.
18	exp ATAXIA/
19	atax$.ti,ab.
20	upper motor neuron? lesion$.ti,ab.
21	or/1-20
22	exp BRAIN INJURY/
23	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
24	ABI.ti,ab.
25	static encephalopath$.ti,ab.
26	CEREBRAL PALSY/
27	(cerebral adj3 pals$).ti,ab.
28	exp MENINGITIS/
29	(meningitis or meningococcal).ti,ab.
30	exp HEAD INJURY/
31	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
32	exp ENCEPHALITIS/
33	encephaliti$.ti,ab.

34	STROKE/
35	stroke$.ti,ab.
36	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
37	exp CEREBROVASCULAR DISEASE/
38	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
39	exp HYDROCEPHALUS/
40	hydrocephal$.ti,ab.
41	SHAKEN BABY SYNDROME/
42	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
43	or/22-42
44	exp PARALYSIS/ or MONOPLEGIA/ or HEMIPLEGIA/ or PARAPLEGIA/ or QUADRIPLEGIA/
45	SPASTIC PARAPLEGIA/
46	PARESIS/ or MONOPARESIS/ or HEMIPARESIS/
47	SPASTIC PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	or/44-49
51	and/21,50
52	and/43,50
53	and/21,43
54	or/51-53
55	exp ORTHOPEDIC SURGERY/
56	orthop?edic$.ti,ab.
57	exp TENDON SURGERY/
58	(tendon$ or tenotom$ or tenodes$).ti,ab.
59	((musculo tendinous or musculo?tendinous or fractional) adj3 length$).ti,ab.
60	MYOTOMY/
61	APONEUROTOMY/
62	(myotom$ or aponeurotom$).ti,ab.
63	(musc$ adj3 (releas$ or recess$)).ti,ab.
64	exp ARTHRODESIS/
65	arthrodes$.ti,ab.
66	((joint$ or bon$) adj3 fus$).ti,ab.
67	exp OSTEOTOMY/
68	osteotom$.ti,ab.
69	OPEN REDUCTION/

70	open reduc$.ti,ab.
71	((single event$ or single?event$ or multi level$ or multi?level$ or multi?stage? or stag$ or interval$) adj3 surg$).ti,ab.
72	(SEMS or SEMLS).ti,ab.
73	or/55-72
74	and/54,73
75	limit 74 to english language

CINAHL 1981+

SPAST_Q7-8_orthopaedic_surgery_cinahl_260111

#	Query	Limiters/Expanders
S138	S137	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase
S137	S118 and S136	Search modes - Boolean/Phrase
S136	S119 or S120 or S121 or S122 or S123 or S124 or S125 or S126 or S127 or S128 or S129 or S130 or S131 or S132 or S133 or S134 or S135	Search modes - Boolean/Phrase
S135	TI (SEMS or SEMLS) or AB (SEMS or SEMLS)	Search modes - Boolean/Phrase
S134	AB (single event surg* or multi level surg* or multi#level surg* or multi stage surg* or multi#stage surg* or stag* surg* or interval surg*)	Search modes - Boolean/Phrase
S133	TI (single event surg* or multi level surg* or multi#level surg* or multi stage surg* or multi#stage surg* or stag* surg* or interval surg*)	Search modes - Boolean/Phrase
S132	TI (open reduc*) or AB (open reduc*)	Search modes - Boolean/Phrase
S131	TI (osteotom*) or AB (osteotom*)	Search modes - Boolean/Phrase
S130	MH OSTEOTOMY	Search modes - Boolean/Phrase
S129	AB (joint* N3 fus*) or AB (bon* N3 fus*)	Search modes - Boolean/Phrase
S128	TI (joint* N3 fus*) or TI (bon* N3 fus*)	Search modes - Boolean/Phrase
S127	TI (arthrodes*) or AB (arthrodes*)	Search modes - Boolean/Phrase
S126	MH ARTHRODESIS+	Search modes - Boolean/Phrase
S125	TI (musc* releas* or musc* recess*) or AB (musc* releas* or musc* recess*)	Search modes - Boolean/Phrase
S124	AB (musculo-tendinous length* or musculo#tendinous length* or fractional length*)	Search modes - Boolean/Phrase
S123	TI (musculo-tendinous length* or musculo#tendinous length* or fractional length*)	Search modes - Boolean/Phrase

S122	AB (tendon* or tenotom* or tenodes* or myotom* or aponeurotom*)	Search modes - Boolean/Phrase
S121	TI (tendon* or tenotom* or tenodes* or myotom* or aponeurotom*)	Search modes - Boolean/Phrase
S120	TI (orthop#edic*) or AB (orthop#edic*)	Search modes - Boolean/Phrase
S119	MH ORTHOPEDIC SURGERY+	Search modes - Boolean/Phrase
S118	S115 or S116 or S117	Search modes - Boolean/Phrase
S117	S105 and S114	Search modes - Boolean/Phrase
S116	S18 and S114	Search modes - Boolean/Phrase
S115	S18 and S105	Search modes - Boolean/Phrase
S114	S106 or S107 or S108 or S109 or S110 or S111 or S112 or S113	Search modes - Boolean/Phrase
S113	AB (monopares* or dipares* or hemipares* or quadripares* or tetrapares*)	Search modes - Boolean/Phrase
S112	TI (monopares* or dipares* or hemipares* or quadripares* or tetrapares*)	Search modes - Boolean/Phrase
S111	AB (monoplegi* or diplegi* or hemiplegi* or quadriplegi* or tetraplegi*)	Search modes - Boolean/Phrase
S110	TI (monoplegi* or diplegi* or hemiplegi* or quadriplegi* or tetraplegi*)	Search modes - Boolean/Phrase
S109	MH QUADRIPLEGIA	Search modes - Boolean/Phrase
S108	MH PARAPLEGIA	Search modes - Boolean/Phrase
S107	MH HEMIPLEGIA	Search modes - Boolean/Phrase
S106	MH PARALYSIS+	Search modes - Boolean/Phrase
S105	S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32 or S33 or S34 or S35 or S36 or S37 or S38 or S39 or S40 or S41 or S42 or S43 or S44 or S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58 or S59 or S60 or S61 or S62 or S63 or S64 or S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73 or S74 or S75 or S76 or S77 or S78 or S79 or S80 or S81 or S82 or S83 or S84 or S85 or S86 or S87 or S88 or S89 or S90 or S91 or S92 or S93 or S94 or S95	Search modes - Boolean/Phrase

	or S96 or S97 or S98 or S99 or S100 or S101 or S102 or S103 or S104	
S104	TI (shak* N3 syndrome*) or AB (shak* N3 syndrome*)	Search modes - Boolean/Phrase
S103	TI (shak* N3 injur*) or AB (shak* N3 injur*)	Search modes - Boolean/Phrase
S102	MH SHAKEN BABY SYNDROME	Search modes - Boolean/Phrase
S101	TI (hydrocephal*) or AB (hydrocephal*)	Search modes - Boolean/Phrase
S100	MH HYDROCEPHALUS+	Search modes - Boolean/Phrase
S99	TI (cerebrovascular N2 insult*) or AB (cerebrovascular N2 insult*)	Search modes - Boolean/Phrase
S98	TI (cerebrovascular N2 disturb*) or AB (cerebrovascular N2 disturb*)	Search modes - Boolean/Phrase
S97	TI (cerebrovascular N2 damage*) or AB (cerebrovascular N2 damage*)	Search modes - Boolean/Phrase
S96	TI (cerebrovascular N2 occlusion*) or AB (cerebrovascular N2 occlusion*)	Search modes - Boolean/Phrase
S95	TI (cerebrovascular N2 insufficien*) or AB (cerebrovascular N2 insufficien*)	Search modes - Boolean/Phrase
S94	TI (cerebrovascular N2 disease*) or AB (cerebrovascular N2 disease*)	Search modes - Boolean/Phrase
S93	TI (cerebrovascular N2 disorder*) or AB (cerebrovascular N2 disorder*)	Search modes - Boolean/Phrase
S92	TI (intracranial vascular N2 insult*) or AB (intracranial vascular N2 insult*)	Search modes - Boolean/Phrase
S91	TI (intracranial vascular N2 disturb*) or AB (intracranial vascular N2 disturb*)	Search modes - Boolean/Phrase
S90	TI (intracranial vascular N2 damage*) or AB (intracranial vascular N2 damage*)	Search modes - Boolean/Phrase
S89	TI (intracranial vascular N2 occlusion*) or AB (intracranial vascular N2 occlusion*)	Search modes - Boolean/Phrase
S88	TI (intracranial vascular N2 insufficien*) or AB (intracranial vascular N2 insufficien*)	Search modes - Boolean/Phrase
S87	TI (intracranial vascular N2 disease*) or AB (intracranial vascular N2 disease*)	Search modes - Boolean/Phrase
S86	TI (intracranial vascular N2 disorder*) or AB (intracranial vascular N2 disorder*)	Search modes - Boolean/Phrase
S85	TI (intra-cranial vascular N2 insult*) or AB (intra-cranial vascular N2 insult*)	Search modes - Boolean/Phrase

S84	TI (intra-cranial vascular N2 disturb*) or AB (intra-cranial vascular N2 disturb*)	Search modes - Boolean/Phrase
S83	TI (intra-cranial vascular N2 damage*) or AB (intra-cranial vascular N2 damage*)	Search modes - Boolean/Phrase
S82	TI (intra-cranial vascular N2 occlusion*) or AB (intra-cranial vascular N2 occlusion*)	Search modes - Boolean/Phrase
S81	TI (intra-cranial vascular N2 insufficien*) or AB (intra-cranial vascular N2 insufficien*)	Search modes - Boolean/Phrase
S80	TI (intra-cranial vascular N2 disease*) or AB (intra-cranial vascular N2 disease*)	Search modes - Boolean/Phrase
S79	TI (intra-cranial vascular N2 disorder*) or AB (intra-cranial vascular N2 disorder*)	Search modes - Boolean/Phrase
S78	TI (brain vascular N2 insult*) or AB (brain vascular N2 insult*)	Search modes - Boolean/Phrase
S77	TI (brain vascular N2 disturb*) or AB (brain vascular N2 disturb*)	Search modes - Boolean/Phrase
S76	TI (brain vascular N2 damage*) or AB (brain vascular N2 damage*)	Search modes - Boolean/Phrase
S75	TI (brain vascular N2 occlusion*) or AB (brain vascular N2 occlusion*)	Search modes - Boolean/Phrase
S74	TI (brain vascular N2 insufficien*) or AB (brain vascular N2 insufficien*)	Search modes - Boolean/Phrase
S73	TI (brain vascular N2 disease*) or AB (brain vascular N2 disease*)	Search modes - Boolean/Phrase
S72	TI (brain vascular N2 disorder*) or AB (brain vascular N2 disorder*)	Search modes - Boolean/Phrase
S71	MH CEREBROVASCULAR DISORDERS+	Search modes - Boolean/Phrase
S70	TI (intracranial N3 isch#emi*) or AB (intracranial N3 isch#emi*)	Search modes - Boolean/Phrase
S69	TI (intracranial N3 aneurysm*) or AB (intracranial N3 aneurysm*)	Search modes - Boolean/Phrase
S68	TI (intracranial N3 embolism) or AB (intracranial N3 embolism)	Search modes - Boolean/Phrase
S67	TI (intra-cranial N3 isch#emi*) or AB (intra-cranial N3 isch#emi*)	Search modes - Boolean/Phrase
S66	TI (intra-cranial N3 aneurysm*) or AB (intra-cranial N3 aneurysm*)	Search modes - Boolean/Phrase
S65	TI (intra-cranial N3 embolism) or AB (intra-cranial N3 embolism)	Search modes - Boolean/Phrase
S64	TI (cerebral N3 isch#emi*) or AB (cerebral N3 isch#emi*)	Search modes - Boolean/Phrase

S63	TI (cerebral N3 aneurysm*) or AB (cerebral N3 aneurysm*)	Search modes - Boolean/Phrase
S62	TI (cerebral N3 embolism) or AB (cerebral N3 embolism)	Search modes - Boolean/Phrase
S61	TI (brain N3 isch#emi*) or AB (brain N3 isch#emi*)	Search modes - Boolean/Phrase
S60	TI (brain N3 aneurysm*) or AB (brain N3 aneurysm*)	Search modes - Boolean/Phrase
S59	TI (brain N3 embolism) or AB (brain N3 embolism)	Search modes - Boolean/Phrase
S58	TI (stroke*) or AB (stroke*)	Search modes - Boolean/Phrase
S57	MH STROKE	Search modes - Boolean/Phrase
S56	TI (encephaliti*) or AB (encephaliti*)	Search modes - Boolean/Phrase
S55	MH ENCEPHALITIS+	Search modes - Boolean/Phrase
S54	TI (craniocerebral N3 insult*) or AB (craniocerebral N3 insult*)	Search modes - Boolean/Phrase
S53	TI (craniocerebral N3 disturb*) or AB (craniocerebral N3 disturb*)	Search modes - Boolean/Phrase
S52	TI (craniocerebral N3 damage*) or AB (craniocerebral N3 damage*)	Search modes - Boolean/Phrase
S51	TI (craniocerebral N3 trauma*) or AB (craniocerebral N3 trauma*)	Search modes - Boolean/Phrase
S50	TI (craniocerebral N3 injur*) or AB (craniocerebral N3 injur*)	Search modes - Boolean/Phrase
S49	TI (cerebral N3 insult*) or AB (cerebral N3 insult*)	Search modes - Boolean/Phrase
S48	TI (cerebral N3 disturb*) or AB (cerebral N3 disturb*)	Search modes - Boolean/Phrase
S47	TI (cerebral N3 damage*) or AB (cerebral N3 damage*)	Search modes - Boolean/Phrase
S46	TI (cerebral N3 trauma*) or AB (cerebral N3 trauma*)	Search modes - Boolean/Phrase
S45	TI (cerebral N3 injur*) or AB (cerebral N3 injur*)	Search modes - Boolean/Phrase
S44	TI (skull N3 insult*) or AB (skull N3 insult*)	Search modes - Boolean/Phrase
S43	TI (skull N3 disturb*) or AB (skull N3 disturb*)	Search modes - Boolean/Phrase

S42	TI (skull N3 damage*) or AB (skull N3 damage*)	Search modes - Boolean/Phrase
S41	TI (skull N3 trauma*) or AB (skull N3 trauma*)	Search modes - Boolean/Phrase
S40	TI (skull N3 injur*) or AB (skull N3 injur*)	Search modes - Boolean/Phrase
S39	TI (brain N3 insult*) or AB (brain N3 insult*)	Search modes - Boolean/Phrase
S38	TI (brain N3 disturb*) or AB (brain N3 disturb*)	Search modes - Boolean/Phrase
S37	TI (brain N3 damage*) or AB (brain N3 damage*)	Search modes - Boolean/Phrase
S36	TI (brain N3 trauma*) or AB (brain N3 trauma*)	Search modes - Boolean/Phrase
S35	TI (brain N3 injur*) or AB (brain N3 injur*)	Search modes - Boolean/Phrase
S34	TI (head N3 insult*) or AB (head N3 insult*)	Search modes - Boolean/Phrase
S33	TI (head N3 disturb*) or AB (head N3 disturb*)	Search modes - Boolean/Phrase
S32	TI (head N3 damage*) or AB (head N3 damage*)	Search modes - Boolean/Phrase
S31	TI (head N3 trauma*) or AB (head N3 trauma*)	Search modes - Boolean/Phrase
S30	TI (head N3 injur*) or AB (head N3 injur*)	Search modes - Boolean/Phrase
S29	MH HEAD INJURIES+	Search modes - Boolean/Phrase
S28	TI (meningitis or meningococcal) or AB (meningitis or meningococcal)	Search modes - Boolean/Phrase
S27	MH MENINGITIS+	Search modes - Boolean/Phrase
S26	TI (cerebral N3 pals*) or AB (cerebral N3 pals*)	Search modes - Boolean/Phrase
S25	MH CEREBRAL PALSY	Search modes - Boolean/Phrase
S24	TI (static encephalopath*) or AB (static encephalopath*)	Search modes - Boolean/Phrase
S23	TI (ABI) or AB (ABI)	Search modes - Boolean/Phrase
S22	TI (acquired N2 brain injur*) or AB (acquired N2 brain injur*)	Search modes - Boolean/Phrase

S21	TI (nonprogressive N2 brain injur*) or AB (nonprogressive N2 brain injur*)	Search modes - Boolean/Phrase
S20	TI (non-progressive N2 brain injur*) or AB (non-progressive N2 brain injur*)	Search modes - Boolean/Phrase
S19	MH BRAIN INJURIES+	Search modes - Boolean/Phrase
S18	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17	Search modes - Boolean/Phrase
S17	TI (upper motor neuron# lesion*) or AB (upper motor neuron# lesion*)	Search modes - Boolean/Phrase
S16	TI (atax*) or AB (atax*)	Search modes - Boolean/Phrase
S15	MH ATAXIA	Search modes - Boolean/Phrase
S14	TI (musc* N3 weak*) or AB (musc* N3 weak*)	Search modes - Boolean/Phrase
S13	MH MUSCLE WEAKNESS	Search modes - Boolean/Phrase
S12	TI (athetos* or athetoid*) or AB (athetos* or athetoid*)	Search modes - Boolean/Phrase
S11	TI (chorea* or choreic* or choreo*) or AB (chorea* or choreic* or choreo*)	Search modes - Boolean/Phrase
S10	MH CHOREA+	Search modes - Boolean/Phrase
S9	TI (dystoni*) or AB (dystoni*)	Search modes - Boolean/Phrase
S8	MH DYSTONIA+	Search modes - Boolean/Phrase
S7	TI (involuntar* N2 mov*) or AB (involuntar* N2 mov*)	Search modes - Boolean/Phrase
S6	TI (abnormal N2 mov*) or AB (abnormal N2 mov*)	Search modes - Boolean/Phrase
S5	TI (dyskinesi*) or AB (dyskinesi*)	Search modes - Boolean/Phrase
S4	MH DYSKINESIAS+	Search modes - Boolean/Phrase
S3	TI (spastic* or spasm* or hyperton*) or AB (spastic* or spasm* or hyperton*)	Search modes - Boolean/Phrase
S2	MH SPASM+	Search modes - Boolean/Phrase
S1	MH MUSCLE SPASTICITY	Search modes - Boolean/Phrase

1

Questions 7 and 8 Health economics searches

Ovid MEDLINE(R) 1948+

SPAST_Q7-8_orthopaedic_surgery_economic_medline_270111

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	MUSCLE SPASTICITY/
9	exp SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	exp DYSKINESIAS/
14	dyskinesi$.ti,ab.
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	exp DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	(chorea$ or choreic$ or choreo$).ti,ab.
20	exp ATHETOSIS/
21	(athetos$ or athetoid).ti,ab.
22	MUSCLE WEAKNESS/
23	(musc$ adj3 weak$).ti,ab.
24	exp ATAXIA/
25	atax$.ti,ab.
26	upper motor neuron? lesion$.ti,ab.
27	or/8-26
28	exp BRAIN INJURIES/
29	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
30	ABI.ti,ab.

31	static encephalopath$.ti,ab.
32	CEREBRAL PALSY/
33	(cerebral adj3 pals$).ti,ab.
34	exp MENINGITIS/
35	(meningitis or meningococcal).ti,ab.
36	exp CRANIOCEREBRAL TRAUMA/
37	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp ENCEPHALITIS/
39	encephaliti$.ti,ab.
40	exp STROKE/
41	stroke$.ti,ab.
42	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
43	exp CEREBROVASCULAR DISORDERS/
44	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
45	exp HYDROCEPHALUS/
46	hydrocephal$.ti,ab.
47	SHAKEN BABY SYNDROME/
48	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
49	or/28-48
50	exp PARALYSIS/
51	HEMIPLEGIA/
52	exp PARAPLEGIA/
53	QUADRIPLEGIA/
54	exp PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	or/50-56
58	and/27,57
59	and/49,57
60	and/27,49
61	or/58-60
62	exp ORTHOPEDIC PROCEDURES/
63	orthop?edic$.ti,ab.
64	TENOTOMY/ or TENDON TRANSFER/ or TENODESIS/
65	(tendon$ or tenotom$ or tenodes$).ti,ab.
66	((musculo tendinous or musculo?tendinous or fractional) adj3 length$).ti,ab.

67	(myotom$ or aponeurotom$).ti,ab.
68	(musc$ adj3 (releas$ or recess$)).ti,ab.
69	exp ARTHRODESIS/
70	arthrodes$.ti,ab.
71	((joint$ or bon$) adj3 fus$).ti,ab.
72	exp OSTEOTOMY/
73	osteotom$.ti,ab.
74	open reduc$.ti,ab.
75	((single event$ or single?event$ or multi level$ or multi?level$ or multi?stage? or stag$ or interval$) adj3 surg$).ti,ab.
76	(SEMS or SEMLS).ti,ab.
77	or/62-76
78	and/61,77
79	limit 78 to english language
80	limit 79 to animals
81	limit 79 to (animals and humans)
82	80 not 81
83	79 not 82
84	and/7,83

EBM Reviews - Cochrane Central Register of Controlled Trials

SPAST_Q7-8_orthopaedic_surgery_economic_cctr_270111

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	MUSCLE SPASTICITY/
9	exp SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	exp DYSKINESIAS/
14	dyskinesi$.ti,ab.
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	exp DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	(chorea$ or choreic$ or choreo$).ti,ab.
20	exp ATHETOSIS/
21	(athetos$ or athetoid).ti,ab.
22	MUSCLE WEAKNESS/
23	(musc$ adj3 weak$).ti,ab.
24	exp ATAXIA/
25	atax$.ti,ab.
26	upper motor neuron? lesion$.ti,ab.
27	or/8-26
28	exp BRAIN INJURIES/
29	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
30	ABI.ti,ab.
31	static encephalopath$.ti,ab.
32	CEREBRAL PALSY/
33	(cerebral adj3 pals$).ti,ab.

34	exp MENINGITIS/
35	(meningitis or meningococcal).ti,ab.
36	exp CRANIOCEREBRAL TRAUMA/
37	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp ENCEPHALITIS/
39	encephaliti$.ti,ab.
40	exp STROKE/
41	stroke$.ti,ab.
42	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
43	exp CEREBROVASCULAR DISORDERS/
44	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
45	exp HYDROCEPHALUS/
46	hydrocephal$.ti,ab.
47	SHAKEN BABY SYNDROME/
48	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
49	or/28-48
50	exp PARALYSIS/
51	HEMIPLEGIA/
52	exp PARAPLEGIA/
53	QUADRIPLEGIA/
54	exp PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	or/50-56
58	and/27,57
59	and/49,57
60	and/27,49
61	or/58-60
62	exp ORTHOPEDIC PROCEDURES/
63	orthop?edic$.ti,ab.
64	TENOTOMY/ or TENDON TRANSFER/ or TENODESIS/
65	(tendon$ or tenotom$ or tenodes$).ti,ab.
66	((musculo tendinous or musculo?tendinous or fractional) adj3 length$).ti,ab.
67	(myotom$ or aponeurotom$).ti,ab.
68	(musc$ adj3 (releas$ or recess$)).ti,ab.
69	exp ARTHRODESIS/

70	arthrodes$.ti,ab.
71	((joint$ or bon$) adj3 fus$).ti,ab.
72	exp OSTEOTOMY/
73	osteotom$.ti,ab.
74	open reduc$.ti,ab.
75	((single event$ or single?event$ or multi level$ or multi?level$ or multi?stage? or stag$ or interval$) adj3 surg$).ti,ab.
76	(SEMS or SEMLS).ti,ab.
77	or/62-76
78	and/61,77
79	and/7,78

1
2

EBM Reviews - Health Technology Assessment

SPAST_Q7-8_orthopaedic_surgery_economic_hta_270111

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).tw.
5	hyperton$.tw.
6	exp DYSKINESIAS/
7	dyskinesi$.tw.
8	((abnormal$ or involuntar$) adj2 mov$).tw.
9	exp DYSTONIA/
10	dystoni$.tw.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).tw.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).tw.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).tw.
17	exp ATAXIA/
18	atax$.tw.
19	upper motor neuron? lesion$.tw.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.
23	ABI.tw.
24	static encephalopath$.tw.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).tw.
27	exp MENINGITIS/
28	(meningitis or meningococcal).tw.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.
31	exp ENCEPHALITIS/
32	encephaliti$.tw.
33	exp STROKE/

34	stroke$.tw.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.
38	exp HYDROCEPHALUS/
39	hydrocephal$.tw.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).tw.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	exp ORTHOPEDIC PROCEDURES/
56	orthop?edic$.tw.
57	TENOTOMY/ or TENDON TRANSFER/ or TENODESIS/
58	(tendon$ or tenotom$ or tenodes$).tw.
59	((musculo tendinous or musculo?tendinous or fractional) adj3 length$).tw.
60	(myotom$ or aponeurotom$).tw.
61	(musc$ adj3 (releas$ or recess$)).tw.
62	exp ARTHRODESIS/
63	arthrodes$.tw.
64	((joint$ or bon$) adj3 fus$).tw.
65	exp OSTEOTOMY/
66	osteotom$.tw.
67	open reduc$.tw.
68	((single event$ or single?event$ or multi level$ or multi?level$ or multi?stage? or stag$ or interval$) adj3 surg$).tw.
69	(SEMS or SEMLS).tw.

70	or/55-69
71	and/54,70

EBM Reviews - NHS Economic Evaluation Database

SPAST_Q7-8_orthopaedic_surgery_economic_nhseed_270111

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).tw.
5	hyperton$.tw.
6	exp DYSKINESIAS/
7	dyskinesi$.tw.
8	((abnormal$ or involuntar$) adj2 mov$).tw.
9	exp DYSTONIA/
10	dystoni$.tw.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).tw.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).tw.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).tw.
17	exp ATAXIA/
18	atax$.tw.
19	upper motor neuron? lesion$.tw.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.
23	ABI.tw.
24	static encephalopath$.tw.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).tw.
27	exp MENINGITIS/
28	(meningitis or meningococcal).tw.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.
31	exp ENCEPHALITIS/
32	encephaliti$.tw.
33	exp STROKE/

34	stroke$.tw.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.
38	exp HYDROCEPHALUS/
39	hydrocephal$.tw.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).tw.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	exp ORTHOPEDIC PROCEDURES/
56	orthop?edic$.tw.
57	TENOTOMY/ or TENDON TRANSFER/ or TENODESIS/
58	(tendon$ or tenotom$ or tenodes$).tw.
59	((musculo tendinous or musculo?tendinous or fractional) adj3 length$).tw.
60	(myotom$ or aponeurotom$).tw.
61	(musc$ adj3 (releas$ or recess$)).tw.
62	exp ARTHRODESIS/
63	arthrodes$.tw.
64	((joint$ or bon$) adj3 fus$).tw.
65	exp OSTEOTOMY/
66	osteotom$.tw.
67	open reduc$.tw.
68	((single event$ or single?event$ or multi level$ or multi?level$ or multi?stage? or stag$ or interval$) adj3 surg$).tw.
69	(SEMS or SEMLS).tw.

70	or/55-69
71	and/54,70

1
2

EMBASE 1980+

SPAST_Q7-8_orthopaedic_surgery_economic_embase_270111

#	Searches
1	costs.tw.
2	cost effective$.tw.
3	economic.tw.
4	or/1-3
5	(metabolic adj cost).tw.
6	((energy or oxygen) adj cost).tw.
7	4 not (5 or 6)
8	SPASTICITY/
9	exp MUSCLE SPASM/
10	exp MUSCLE HYPERTONIA/
11	(spastic$ or spasm$).ti,ab.
12	hyperton$.ti,ab.
13	DYSKINESIA/
14	dyskinesi$.ti,ab.
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
16	DYSTONIA/
17	dystoni$.ti,ab.
18	exp CHOREA/
19	CHOREOATHETOSIS/
20	ATHETOSIS/
21	(chorea$ or choreic$ or choreo$).ti,ab.
22	(athetos$ or athetoid).ti,ab.
23	exp MUSCLE WEAKNESS/
24	(musc$ adj3 weak$).ti,ab.
25	exp ATAXIA/
26	atax$.ti,ab.
27	upper motor neuron? lesion$.ti,ab.
28	or/8-27
29	exp BRAIN INJURY/
30	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
31	ABI.ti,ab.
32	static encephalopath$.ti,ab.
33	CEREBRAL PALSY/

34	(cerebral adj3 pals$).ti,ab.
35	exp MENINGITIS/
36	(meningitis or meningococcal).ti,ab.
37	exp HEAD INJURY/
38	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
39	exp ENCEPHALITIS/
40	encephaliti$.ti,ab.
41	STROKE/
42	stroke$.ti,ab.
43	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
44	exp CEREBROVASCULAR DISEASE/
45	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
46	exp HYDROCEPHALUS/
47	hydrocephal$.ti,ab.
48	SHAKEN BABY SYNDROME/
49	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
50	or/29-49
51	exp PARALYSIS/ or MONOPLEGIA/ or HEMIPLEGIA/ or PARAPLEGIA/ or QUADRIPLEGIA/
52	SPASTIC PARAPLEGIA/
53	PARESIS/ or MONOPARESIS/ or HEMIPARESIS/
54	SPASTIC PARESIS/
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
57	or/51-56
58	and/28,57
59	and/50,57
60	and/28,50
61	or/58-60
62	exp ORTHOPEDIC SURGERY/
63	orthop?edic$.ti,ab.
64	exp TENDON SURGERY/
65	(tendon$ or tenotom$ or tenodes$).ti,ab.
66	((musculo tendinous or musculo?tendinous or fractional) adj3 length$).ti,ab.
67	MYOTOMY/
68	APONEUROTOMY/

69	(myotom$ or aponeurotom$).ti,ab.
70	(musc$ adj3 (releas$ or recess$)).ti,ab.
71	exp ARTHRODESIS/
72	arthrodes$.ti,ab.
73	((joint$ or bon$) adj3 fus$).ti,ab.
74	exp OSTEOTOMY/
75	osteotom$.ti,ab.
76	OPEN REDUCTION/
77	open reduc$.ti,ab.
78	((single event$ or single?event$ or multi level$ or multi?level$ or multi?stage? or stag$ or interval$) adj3 surg$).ti,ab.
79	(SEMS or SEMLS).ti,ab.
80	or/62-79
81	and/61,80
82	limit 81 to english language
83	and/7,82

Question 9 What is the clinical effectiveness of Selective Dorsal Rhizotomy in children and young people with spasticity caused by a non-progressive brain disorder?

Ovid MEDLINE(R) 1948+

SPAST_Q9_SDR_medline_200711

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	exp DYSKINESIAS/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	exp DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).ti,ab.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).ti,ab.

15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).ti,ab.
17	exp ATAXIA/
18	atax$.ti,ab.
19	upper motor neuron? lesion$.ti,ab.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
23	ABI.ti,ab.
24	static encephalopath$.ti,ab.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).ti,ab.
27	exp MENINGITIS/
28	(meningitis or meningococcal).ti,ab.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
31	exp ENCEPHALITIS/
32	encephaliti$.ti,ab.
33	exp STROKE/
34	stroke$.ti,ab.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp HYDROCEPHALUS/
39	hydrocephal$.ti,ab.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	or/43-49

51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	exp RHIZOTOMY/
56	rhizotom$.ti,ab.
57	((spin$ or sensor$) adj3 nerve$ adj3 interrupt$).ti,ab.
58	or/55-57
59	(dors$ or posterior$ or functional).ti,ab.
60	GANGLIA, SPINAL/
61	(gangli$ adj3 spin$).ti,ab.
62	or/59-61
63	and/58,62
64	(SDR or SPR or SFDR or SFPR).ti,ab.
65	or/63-64
66	and/54,65

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2

Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations

SPAST_Q9_SDR_mip_200711

#	Searches
1	(spastic$ or spasm$).ti,ab.
2	hyperton$.ti,ab.
3	dyskinesi$.ti,ab.
4	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
5	dystoni$.ti,ab.
6	(chorea$ or choreic$ or choreo$).ti,ab.
7	(athetos$ or athetoid).ti,ab.
8	(musc$ adj3 weak$).ti,ab.
9	atax$.ti,ab.
10	upper motor neuron? lesion$.ti,ab.
11	or/1-10
12	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
13	ABI.ti,ab.
14	static encephalopath$.ti,ab.
15	(cerebral adj3 pals$).ti,ab.
16	(meningitis or meningococcal).ti,ab.
17	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
18	encephaliti$.ti,ab.
19	stroke$.ti,ab.
20	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
21	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
22	hydrocephal$.ti,ab.
23	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
24	or/12-23
25	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
26	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
27	or/25-26
28	and/11,27
29	and/24,27
30	and/11,24
31	or/28-30

32	rhizotom$.ti,ab.
33	((spin$ or sensor$) adj3 nerve$ adj3 interrupt$).ti,ab.
34	or/32-33
35	(dors$ or posterior$ or functional).ti,ab.
36	(gangli$ adj3 spin$).ti,ab.
37	or/35-36
38	and/34,37
39	(SDR or SPR or SFDR or SFPR).ti,ab.
40	or/38-39
41	and/31,40

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EBM Reviews - Cochrane Central Register of Controlled Trials

SPAST_Q9_SDR_cctr_200711

#	Searches
1	MUSCLE SPASTICITY/
2	exp SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	exp DYSKINESIAS/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	exp DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	(chorea$ or choreic$ or choreo$).ti,ab.
13	exp ATHETOSIS/
14	(athetos$ or athetoid).ti,ab.
15	MUSCLE WEAKNESS/
16	(musc$ adj3 weak$).ti,ab.
17	exp ATAXIA/
18	atax$.ti,ab.
19	upper motor neuron? lesion$.ti,ab.
20	or/1-19
21	exp BRAIN INJURIES/
22	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
23	ABI.ti,ab.
24	static encephalopath$.ti,ab.
25	CEREBRAL PALSY/
26	(cerebral adj3 pals$).ti,ab.
27	exp MENINGITIS/
28	(meningitis or meningococcal).ti,ab.
29	exp CRANIOCEREBRAL TRAUMA/
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
31	exp ENCEPHALITIS/
32	encephaliti$.ti,ab.
33	exp STROKE/

34	stroke$.ti,ab.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
36	exp CEREBROVASCULAR DISORDERS/
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
38	exp HYDROCEPHALUS/
39	hydrocephal$.ti,ab.
40	SHAKEN BABY SYNDROME/
41	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
42	or/21-41
43	exp PARALYSIS/
44	HEMIPLEGIA/
45	exp PARAPLEGIA/
46	QUADRIPLEGIA/
47	exp PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	exp RHIZOTOMY/
56	rhizotom$.ti,ab.
57	((spin$ or sensor$) adj3 nerve$ adj3 interrupt$).ti,ab.
58	or/55-57
59	(dors$ or posterior$ or functional).ti,ab.
60	GANGLIA, SPINAL/
61	(gangli$ adj3 spin$).ti,ab.
62	or/59-61
63	and/58,62
64	(SDR or SPR or SFDR or SFPR).ti,ab.
65	or/63-64
66	and/54,65

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EBM Reviews - Cochrane Database of Systematic Reviews 2005+, EBM Reviews - Database of Abstracts of Reviews of Effects

SPAST_Q9_SDR_cdsrdare_200711

#	Searches
1	MUSCLE SPASTICITY.kw.
2	SPASM.kw.
3	MUSCLE HYPERTONIA.kw.
4	(spastic$ or spasm$).tw,tx.
5	hyperton$.tw,tx.
6	DYSKINESIAS.kw.
7	dyskinesi$.tw,tx.
8	((abnormal$ or involuntar$) adj2 mov$).tw,tx.
9	DYSTONIA.kw.
10	dystoni$.tw,tx.
11	CHOREA.kw.
12	(chorea$ or choreic$ or choreo$).tw,tx.
13	ATHETOSIS.kw.
14	(athetos$ or athetoid).tw,tx.
15	MUSCLE WEAKNESS.kw.
16	(musc$ adj3 weak$).tw,tx.
17	ATAXIA.kw.
18	atax$.tw,tx.
19	upper motor neuron? lesion$.tw,tx.
20	or/1-19
21	BRAIN INJURIES.kw.
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw,tx.
23	ABI.tw,tx.
24	static encephalopath$.tw,tx.
25	CEREBRAL PALSY.kw.
26	(cerebral adj3 pals$).tw,tx.
27	MENINGITIS.kw.
28	(meningitis or meningococcal).tw,tx.
29	CRANIOCEREBRAL TRAUMA.kw.
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw,tx.
31	ENCEPHALITIS.kw.
32	encephaliti$.tw,tx.
33	STROKE.kw.

34	stroke$.tw,tx.
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw,tx.
36	CEREBROVASCULAR DISORDERS.kw.
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw,tx.
38	HYDROCEPHALUS.kw.
39	hydrocephal$.tw,tx.
40	SHAKEN BABY SYNDROME.kw.
41	(shak$ adj3 (injur$ or syndrome$)).tw,tx.
42	or/21-41
43	PARALYSIS.kw.
44	HEMIPLEGIA.kw.
45	PARAPLEGIA.kw.
46	QUADRIPLEGIA.kw.
47	PARESIS.kw.
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw,tx.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw,tx.
50	or/43-49
51	and/20,50
52	and/42,50
53	and/20,42
54	or/51-53
55	RHIZOTOMY.kw.
56	rhizotom$.tw,tx.
57	((spin$ or sensor$) adj3 nerve$ adj3 interrupt$).tw,tx.
58	or/55-57
59	(dors$ or posterior$ or functional).tw,tx.
60	GANGLIA, SPINAL.kw.
61	(gangli$ adj3 spin$).tw,tx.
62	or/59-61
63	and/58,62
64	(SDR or SPR or SFDR or SFPR).tw,tx.
65	or/63-64
66	and/54,65

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Embase 1980+

SPAST_Q9_SDR_embase_200711

#	Searches
1	SPASTICITY/
2	exp MUSCLE SPASM/
3	exp MUSCLE HYPERTONIA/
4	(spastic$ or spasm$).ti,ab.
5	hyperton$.ti,ab.
6	DYSKINESIA/
7	dyskinesi$.ti,ab.
8	((abnormal$ or involuntar$) adj2 mov$).ti,ab.
9	DYSTONIA/
10	dystoni$.ti,ab.
11	exp CHOREA/
12	CHOREOATHETOSIS/
13	ATHETOSIS/
14	(chorea$ or choreic$ or choreo$).ti,ab.
15	(athetos$ or athetoid).ti,ab.
16	exp MUSCLE WEAKNESS/
17	(musc$ adj3 weak$).ti,ab.
18	exp ATAXIA/
19	atax$.ti,ab.
20	upper motor neuron? lesion$.ti,ab.
21	or/1-20
22	exp BRAIN INJURY/
23	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.
24	ABI.ti,ab.
25	static encephalopath$.ti,ab.
26	CEREBRAL PALSY/
27	(cerebral adj3 pals$).ti,ab.
28	exp MENINGITIS/
29	(meningitis or meningococcal).ti,ab.
30	exp HEAD INJURY/
31	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.
32	exp ENCEPHALITIS/
33	encephaliti$.ti,ab.

34	STROKE/
35	stroke$.ti,ab.
36	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.
37	exp CEREBROVASCULAR DISEASE/
38	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.
39	exp HYDROCEPHALUS/
40	hydrocephal$.ti,ab.
41	SHAKEN BABY SYNDROME/
42	(shak$ adj3 (injur$ or syndrome$)).ti,ab.
43	or/22-42
44	exp PARALYSIS/ or MONOPLEGIA/ or HEMIPLEGIA/ or PARAPLEGIA/ or QUADRIPLEGIA/
45	SPASTIC PARAPLEGIA/
46	PARESIS/ or MONOPARESIS/ or HEMIPARESIS/
47	SPASTIC PARESIS/
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.
50	or/44-49
51	and/21,50
52	and/43,50
53	and/21,43
54	or/51-53
55	exp RHIZOTOMY/
56	rhizotom$.ti,ab.
57	((spin$ or sensor$) adj3 nerve$ adj3 interrupt$).ti,ab.
58	or/55-57
59	(dors$ or posterior$ or functional).ti,ab.
60	SPINAL GANGLION/
61	(gangli$ adj3 spin$).ti,ab.
62	or/59-61
63	and/58,62
64	(SDR or SPR or SFDR or SFPR).ti,ab.
65	or/63-64
66	and/54,65

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CINAHL 1981+

3 **SPAST_Q9_SDR_cinahl_200711**

#	Query	Limiters/Expanders
S131	S130	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase
S130	S118 and S129	Search modes - Boolean/Phrase
S129	S127 or S128	Search modes - Boolean/Phrase
S128	TI (SDR or SPR or SFDR or SFPR) or AB (SDR or SPR or SFDR or SFPR)	Search modes - Boolean/Phrase
S127	S122 and S126	Search modes - Boolean/Phrase
S126	S123 or S124 or S125	Search modes - Boolean/Phrase
S125	TI (gangli* N3 spin*) or AB (gangli* N3 spin*)	Search modes - Boolean/Phrase
S124	MH GANGLIA, SENSORY	Search modes - Boolean/Phrase
S123	TI (dors* or posterior* or functional) or AB (dors* or posterior* or functional)	Search modes - Boolean/Phrase
S122	S119 or S120 or S121	Search modes - Boolean/Phrase
S121	TI (nerve* N3 interrupt*) or AB (nerve* N3 interrupt*)	Search modes - Boolean/Phrase
S120	TI (rhizotom*) or AB (rhizotom*)	Search modes - Boolean/Phrase
S119	MH RHIZOTOMY	Search modes - Boolean/Phrase
S118	S115 or S116 or S117	Search modes - Boolean/Phrase
S117	S105 and S114	Search modes - Boolean/Phrase
S116	S18 and S114	Search modes - Boolean/Phrase
S115	S18 and S105	Search modes - Boolean/Phrase
S114	S106 or S107 or S108 or S109 or S110 or S111 or S112 or	Search modes -

	S113	Boolean/Phrase
S113	AB (monopares* or dipares* or hemipares* or quadripares* or tetrapares*)	Search modes - Boolean/Phrase
S112	TI (monopares* or dipares* or hemipares* or quadripares* or tetrapares*)	Search modes - Boolean/Phrase
S111	AB (monoplegi* or diplegi* or hemiplegi* or quadriplegi* or tetraplegi*)	Search modes - Boolean/Phrase
S110	TI (monoplegi* or diplegi* or hemiplegi* or quadriplegi* or tetraplegi*)	Search modes - Boolean/Phrase
S109	MH QUADRIPLEGIA	Search modes - Boolean/Phrase
S108	MH PARAPLEGIA	Search modes - Boolean/Phrase
S107	MH HEMIPLEGIA	Search modes - Boolean/Phrase
S106	MH PARALYSIS+	Search modes - Boolean/Phrase
S105	S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32 or S33 or S34 or S35 or S36 or S37 or S38 or S39 or S40 or S41 or S42 or S43 or S44 or S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58 or S59 or S60 or S61 or S62 or S63 or S64 or S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73 or S74 or S75 or S76 or S77 or S78 or S79 or S80 or S81 or S82 or S83 or S84 or S85 or S86 or S87 or S88 or S89 or S90 or S91 or S92 or S93 or S94 or S95 or S96 or S97 or S98 or S99 or S100 or S101 or S102 or S103 or S104	Search modes - Boolean/Phrase
S104	TI (shak* N3 syndrome*) or AB (shak* N3 syndrome*)	Search modes - Boolean/Phrase
S103	TI (shak* N3 injur*) or AB (shak* N3 injur*)	Search modes - Boolean/Phrase
S102	MH SHAKEN BABY SYNDROME	Search modes - Boolean/Phrase
S101	TI (hydrocephal*) or AB (hydrocephal*)	Search modes - Boolean/Phrase
S100	MH HYDROCEPHALUS+	Search modes - Boolean/Phrase
S99	TI (cerebrovascular N2 insult*) or AB (cerebrovascular N2 insult*)	Search modes - Boolean/Phrase
S98	TI (cerebrovascular N2 disturb*) or AB (cerebrovascular N2 disturb*)	Search modes - Boolean/Phrase
S97	TI (cerebrovascular N2 damage*) or AB (cerebrovascular N2	Search modes -

	damage*)	Boolean/Phrase
S96	TI (cerebrovascular N2 occlusion*) or AB (cerebrovascular N2 occlusion*)	Search modes - Boolean/Phrase
S95	TI (cerebrovascular N2 insufficien*) or AB (cerebrovascular N2 insufficien*)	Search modes - Boolean/Phrase
S94	TI (cerebrovascular N2 disease*) or AB (cerebrovascular N2 disease*)	Search modes - Boolean/Phrase
S93	TI (cerebrovascular N2 disorder*) or AB (cerebrovascular N2 disorder*)	Search modes - Boolean/Phrase
S92	TI (intracranial vascular N2 insult*) or AB (intracranial vascular N2 insult*)	Search modes - Boolean/Phrase
S91	TI (intracranial vascular N2 disturb*) or AB (intracranial vascular N2 disturb*)	Search modes - Boolean/Phrase
S90	TI (intracranial vascular N2 damage*) or AB (intracranial vascular N2 damage*)	Search modes - Boolean/Phrase
S89	TI (intracranial vascular N2 occlusion*) or AB (intracranial vascular N2 occlusion*)	Search modes - Boolean/Phrase
S88	TI (intracranial vascular N2 insufficien*) or AB (intracranial vascular N2 insufficien*)	Search modes - Boolean/Phrase
S87	TI (intracranial vascular N2 disease*) or AB (intracranial vascular N2 disease*)	Search modes - Boolean/Phrase
S86	TI (intracranial vascular N2 disorder*) or AB (intracranial vascular N2 disorder*)	Search modes - Boolean/Phrase
S85	TI (intra-cranial vascular N2 insult*) or AB (intra-cranial vascular N2 insult*)	Search modes - Boolean/Phrase
S84	TI (intra-cranial vascular N2 disturb*) or AB (intra-cranial vascular N2 disturb*)	Search modes - Boolean/Phrase
S83	TI (intra-cranial vascular N2 damage*) or AB (intra-cranial vascular N2 damage*)	Search modes - Boolean/Phrase
S82	TI (intra-cranial vascular N2 occlusion*) or AB (intra-cranial vascular N2 occlusion*)	Search modes - Boolean/Phrase
S81	TI (intra-cranial vascular N2 insufficien*) or AB (intra-cranial vascular N2 insufficien*)	Search modes - Boolean/Phrase
S80	TI (intra-cranial vascular N2 disease*) or AB (intra-cranial vascular N2 disease*)	Search modes - Boolean/Phrase
S79	TI (intra-cranial vascular N2 disorder*) or AB (intra-cranial vascular N2 disorder*)	Search modes - Boolean/Phrase
S78	TI (brain vascular N2 insult*) or AB (brain vascular N2 insult*)	Search modes - Boolean/Phrase
S77	TI (brain vascular N2 disturb*) or AB (brain vascular N2 disturb*)	Search modes - Boolean/Phrase

S76	TI (brain vascular N2 damage*) or AB (brain vascular N2 damage*)	Search modes - Boolean/Phrase
S75	TI (brain vascular N2 occlusion*) or AB (brain vascular N2 occlusion*)	Search modes - Boolean/Phrase
S74	TI (brain vascular N2 insufficien*) or AB (brain vascular N2 insufficien*)	Search modes - Boolean/Phrase
S73	TI (brain vascular N2 disease*) or AB (brain vascular N2 disease*)	Search modes - Boolean/Phrase
S72	TI (brain vascular N2 disorder*) or AB (brain vascular N2 disorder*)	Search modes - Boolean/Phrase
S71	MH CEREBROVASCULAR DISORDERS+	Search modes - Boolean/Phrase
S70	TI (intracranial N3 isch#emi*) or AB (intracranial N3 isch#emi*)	Search modes - Boolean/Phrase
S69	TI (intracranial N3 aneurysm*) or AB (intracranial N3 aneurysm*)	Search modes - Boolean/Phrase
S68	TI (intracranial N3 embolism) or AB (intracranial N3 embolism)	Search modes - Boolean/Phrase
S67	TI (intra-cranial N3 isch#emi*) or AB (intra-cranial N3 isch#emi*)	Search modes - Boolean/Phrase
S66	TI (intra-cranial N3 aneurysm*) or AB (intra-cranial N3 aneurysm*)	Search modes - Boolean/Phrase
S65	TI (intra-cranial N3 embolism) or AB (intra-cranial N3 embolism)	Search modes - Boolean/Phrase
S64	TI (cerebral N3 isch#emi*) or AB (cerebral N3 isch#emi*)	Search modes - Boolean/Phrase
S63	TI (cerebral N3 aneurysm*) or AB (cerebral N3 aneurysm*)	Search modes - Boolean/Phrase
S62	TI (cerebral N3 embolism) or AB (cerebral N3 embolism)	Search modes - Boolean/Phrase
S61	TI (brain N3 isch#emi*) or AB (brain N3 isch#emi*)	Search modes - Boolean/Phrase
S60	TI (brain N3 aneurysm*) or AB (brain N3 aneurysm*)	Search modes - Boolean/Phrase
S59	TI (brain N3 embolism) or AB (brain N3 embolism)	Search modes - Boolean/Phrase
S58	TI (stroke*) or AB (stroke*)	Search modes - Boolean/Phrase
S57	MH STROKE	Search modes - Boolean/Phrase
S56	TI (encephaliti*) or AB (encephaliti*)	Search modes - Boolean/Phrase

S55	MH ENCEPHALITIS+	Search modes - Boolean/Phrase
S54	TI (craniocerebral N3 insult*) or AB (craniocerebral N3 insult*)	Search modes - Boolean/Phrase
S53	TI (craniocerebral N3 disturb*) or AB (craniocerebral N3 disturb*)	Search modes - Boolean/Phrase
S52	TI (craniocerebral N3 damage*) or AB (craniocerebral N3 damage*)	Search modes - Boolean/Phrase
S51	TI (craniocerebral N3 trauma*) or AB (craniocerebral N3 trauma*)	Search modes - Boolean/Phrase
S50	TI (craniocerebral N3 injur*) or AB (craniocerebral N3 injur*)	Search modes - Boolean/Phrase
S49	TI (cerebral N3 insult*) or AB (cerebral N3 insult*)	Search modes - Boolean/Phrase
S48	TI (cerebral N3 disturb*) or AB (cerebral N3 disturb*)	Search modes - Boolean/Phrase
S47	TI (cerebral N3 damage*) or AB (cerebral N3 damage*)	Search modes - Boolean/Phrase
S46	TI (cerebral N3 trauma*) or AB (cerebral N3 trauma*)	Search modes - Boolean/Phrase
S45	TI (cerebral N3 injur*) or AB (cerebral N3 injur*)	Search modes - Boolean/Phrase
S44	TI (skull N3 insult*) or AB (skull N3 insult*)	Search modes - Boolean/Phrase
S43	TI (skull N3 disturb*) or AB (skull N3 disturb*)	Search modes - Boolean/Phrase
S42	TI (skull N3 damage*) or AB (skull N3 damage*)	Search modes - Boolean/Phrase
S41	TI (skull N3 trauma*) or AB (skull N3 trauma*)	Search modes - Boolean/Phrase
S40	TI (skull N3 injur*) or AB (skull N3 injur*)	Search modes - Boolean/Phrase
S39	TI (brain N3 insult*) or AB (brain N3 insult*)	Search modes - Boolean/Phrase
S38	TI (brain N3 disturb*) or AB (brain N3 disturb*)	Search modes - Boolean/Phrase
S37	TI (brain N3 damage*) or AB (brain N3 damage*)	Search modes - Boolean/Phrase
S36	TI (brain N3 trauma*) or AB (brain N3 trauma*)	Search modes - Boolean/Phrase
S35	TI (brain N3 injur*) or AB (brain N3 injur*)	Search modes - Boolean/Phrase

S34	TI (head N3 insult*) or AB (head N3 insult*)	Search modes - Boolean/Phrase
S33	TI (head N3 disturb*) or AB (head N3 disturb*)	Search modes - Boolean/Phrase
S32	TI (head N3 damage*) or AB (head N3 damage*)	Search modes - Boolean/Phrase
S31	TI (head N3 trauma*) or AB (head N3 trauma*)	Search modes - Boolean/Phrase
S30	TI (head N3 injur*) or AB (head N3 injur*)	Search modes - Boolean/Phrase
S29	MH HEAD INJURIES+	Search modes - Boolean/Phrase
S28	TI (meningitis or meningococcal) or AB (meningitis or meningococcal)	Search modes - Boolean/Phrase
S27	MH MENINGITIS+	Search modes - Boolean/Phrase
S26	TI (cerebral N3 pals*) or AB (cerebral N3 pals*)	Search modes - Boolean/Phrase
S25	MH CEREBRAL PALSY	Search modes - Boolean/Phrase
S24	TI (static encephalopath*) or AB (static encephalopath*)	Search modes - Boolean/Phrase
S23	TI (ABI) or AB (ABI)	Search modes - Boolean/Phrase
S22	TI (acquired N2 brain injur*) or AB (acquired N2 brain injur*)	Search modes - Boolean/Phrase
S21	TI (nonprogressive N2 brain injur*) or AB (nonprogressive N2 brain injur*)	Search modes - Boolean/Phrase
S20	TI (non-progressive N2 brain injur*) or AB (non-progressive N2 brain injur*)	Search modes - Boolean/Phrase
S19	MH BRAIN INJURIES+	Search modes - Boolean/Phrase
S18	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17	Search modes - Boolean/Phrase
S17	TI (upper motor neuron# lesion*) or AB (upper motor neuron# lesion*)	Search modes - Boolean/Phrase
S16	TI (atax*) or AB (atax*)	Search modes - Boolean/Phrase
S15	MH ATAXIA	Search modes - Boolean/Phrase
S14	TI (musc* N3 weak*) or AB (musc* N3 weak*)	Search modes - Boolean/Phrase

S13	MH MUSCLE WEAKNESS	Search modes - Boolean/Phrase
S12	TI (athetos* or athetoid*) or AB (athetos* or athetoid*)	Search modes - Boolean/Phrase
S11	TI (chorea* or choreic* or choreo*) or AB (chorea* or choreic* or choreo*)	Search modes - Boolean/Phrase
S10	MH CHOREA+	Search modes - Boolean/Phrase
S9	TI (dystoni*) or AB (dystoni*)	Search modes - Boolean/Phrase
S8	MH DYSTONIA+	Search modes - Boolean/Phrase
S7	TI (involuntar* N2 mov*) or AB (involuntar* N2 mov*)	Search modes - Boolean/Phrase
S6	TI (abnormal N2 mov*) or AB (abnormal N2 mov*)	Search modes - Boolean/Phrase
S5	TI (dyskinesi*) or AB (dyskinesi*)	Search modes - Boolean/Phrase
S4	MH DYSKINESIAS+	Search modes - Boolean/Phrase
S3	TI (spastic* or spasm* or hyperton*) or AB (spastic* or spasm* or hyperton*)	Search modes - Boolean/Phrase
S2	MH SPASM+	Search modes - Boolean/Phrase
S1	MH MUSCLE SPASTICITY	Search modes - Boolean/Phrase

Question 9 Health economics searches

Ovid MEDLINE(R) 1948 to July Week 1 2011

SPAST_Q9_SDR_economic_medline_200711

#	Searches	Results
1	costs.tw.	95212
2	cost effective$.tw.	55478
3	economic.tw.	87725
4	or/1-3	206694
5	(metabolic adj cost).tw.	601
6	((energy or oxygen) adj cost).tw.	2324

7	4 not (5 or 6)	206408
8	MUSCLE SPASTICITY/	5871
9	exp SPASM/	7313
10	exp MUSCLE HYPERTONIA/	8051
11	(spastic$ or spasm$).ti,ab.	33540
12	hyperton$.ti,ab.	14231
13	exp DYSKINESIAS/	57717
14	dyskinesi$.ti,ab.	10567
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.	5141
16	exp DYSTONIA/	6916
17	dystoni$.ti,ab.	9852
18	exp CHOREA/	11223
19	(chorea$ or choreic$ or choreo$).ti,ab.	5530
20	exp ATHETOSIS/	1222
21	(athetos$ or athetoid).ti,ab.	650
22	MUSCLE WEAKNESS/	4268
23	(musc$ adj3 weak$).ti,ab.	10561
24	exp ATAXIA/	13333
25	atax$.ti,ab.	22468
26	upper motor neuron? lesion$.ti,ab.	218
27	or/8-26	146939
28	exp BRAIN INJURIES/	41729
29	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.	724
30	ABI.ti,ab.	3010
31	static encephalopath$.ti,ab.	108
32	CEREBRAL PALSY/	13379
33	(cerebral adj3 pals$).ti,ab.	12007
34	exp MENINGITIS/	43505
35	(meningitis or meningococcal).ti,ab.	40129
36	exp CRANIOCEREBRAL TRAUMA/	105393
37	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.	76506
38	exp ENCEPHALITIS/	36560
39	encephaliti$.ti,ab.	24611
40	exp STROKE/	65295
41	stroke$.ti,ab.	111155
42	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.	40816
43	exp CEREBROVASCULAR DISORDERS/	235456

44	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.	14895
45	exp HYDROCEPHALUS/	18030
46	hydrocephal$.ti,ab.	16744
47	SHAKEN BABY SYNDROME/	363
48	(shak$ adj3 (injur$ or syndrome$)).ti,ab.	538
49	or/28-48	524951
50	exp PARALYSIS/	64620
51	HEMIPLEGIA/	9591
52	exp PARAPLEGIA/	11021
53	QUADRIPLEGIA/	6720
54	exp PARESIS/	4830
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.	13978
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.	8430
57	or/50-56	79665
58	and/27,57	9675
59	and/49,57	19486
60	and/27,49	15344
61	or/58-60	37237
62	exp RHIZOTOMY/	688
63	rhizotom$.ti,ab.	1603
64	((spin$ or sensor$) adj3 nerve$ adj3 interrupt$).ti,ab.	8
65	or/62-64	1793
66	(dors$ or posterior$ or functional).ti,ab.	861358
67	GANGLIA, SPINAL/	14068
68	(gangli$ adj3 spin$).ti,ab.	2589
69	or/66-68	866422
70	and/65,69	1213
71	(SDR or SPR or SFDR or SFPR).ti,ab.	4220
72	or/70-71	5321
73	and/61,72	268
74	and/7,73	5

EBM Reviews - Cochrane Central Register of Controlled Trials 3rd Quarter 2011

SPAST_Q9_SDR_economic_cctr_200711

#	Searches	Results
1	costs.tw.	6671
2	cost effective$.tw.	5340
3	economic.tw.	2989
4	or/1-3	11201
5	(metabolic adj cost).tw.	42
6	((energy or oxygen) adj cost).tw.	211
7	4 not (5 or 6)	11187
8	MUSCLE SPASTICITY/	367
9	exp SPASM/	260
10	exp MUSCLE HYPERTONIA/	453
11	(spastic$ or spasm$).ti,ab.	2007
12	hyperton$.ti,ab.	1011
13	exp DYSKINESIAS/	1915
14	dyskinesi$.ti,ab.	885
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.	347
16	exp DYSTONIA/	130
17	dystoni$.ti,ab.	369
18	exp CHOREA/	154
19	(chorea$ or choreic$ or choreo$).ti,ab.	117
20	exp ATHETOSIS/	14
21	(athetos$ or athetoid).ti,ab.	16
22	MUSCLE WEAKNESS/	172
23	(musc$ adj3 weak$).ti,ab.	345
24	exp ATAXIA/	97
25	atax$.ti,ab.	250
26	upper motor neuron? lesion$.ti,ab.	7
27	or/8-26	6651
28	exp BRAIN INJURIES/	697
29	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.	77
30	ABI.ti,ab.	126
31	static encephalopath$.ti,ab.	1
32	CEREBRAL PALSY/	418
33	(cerebral adj3 pals$).ti,ab.	616
34	exp MENINGITIS/	387

35	(meningitis or meningococcal).ti,ab.	809
36	exp CRANIOCEREBRAL TRAUMA/	1303
37	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.	2197
38	exp ENCEPHALITIS/	153
39	encephaliti$.ti,ab.	208
40	exp STROKE/	2985
41	stroke$.ti,ab.	13777
42	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.	1223
43	exp CEREBROVASCULAR DISORDERS/	6258
44	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.	908
45	exp HYDROCEPHALUS/	102
46	hydrocephal$.ti,ab.	157
47	SHAKEN BABY SYNDROME/	4
48	(shak$ adj3 (injur$ or syndrome$)).ti,ab.	5
49	or/28-48	21555
50	exp PARALYSIS/	903
51	HEMIPLEGIA/	356
52	exp PARAPLEGIA/	141
53	QUADRIPLEGIA/	104
54	exp PARESIS/	240
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.	965
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.	260
57	or/50-56	1930
58	and/27,57	344
59	and/49,57	937
60	and/27,49	719
61	or/58-60	1512
62	exp RHIZOTOMY/	17
63	rhizotom$.ti,ab.	29
64	((spin$ or sensor$) adj3 nerve$ adj3 interrupt$).ti,ab.	1
65	or/62-64	32
66	(dors$ or posterior$ or functional).ti,ab.	21711
67	GANGLIA, SPINAL/	11
68	(gangli$ adj3 spin$).ti,ab.	14
69	or/66-68	21724
70	and/65,69	26

71	(SDR or SPR or SFDR or SFPR).ti,ab.	44
72	or/70-71	60
73	and/61,72	19
74	and/7,73	0

1
2

EBM Reviews - Health Technology Assessment 3rd Quarter 2011

SPAST_Q9_SDR_economic_hta_200711

#	Searches	Results
1	MUSCLE SPASTICITY/	18
2	exp SPASM/	0
3	exp MUSCLE HYPERTONIA/	19
4	(spastic$ or spasm$).tw.	38
5	hyperton$.tw.	7
6	exp DYSKINESIAS/	27
7	dyskinesi$.tw.	6
8	((abnormal$ or involuntar$) adj2 mov$).tw.	2
9	exp DYSTONIA/	9
10	dystoni$.tw.	14
11	exp CHOREA/	0
12	(chorea$ or choreic$ or choreo$).tw.	2
13	exp ATHETOSIS/	0
14	(athetos$ or athetoid).tw.	0
15	MUSCLE WEAKNESS/	0
16	(musc$ adj3 weak$).tw.	2
17	exp ATAXIA/	11
18	atax$.tw.	15
19	upper motor neuron? lesion$.tw.	0
20	or/1-19	76
21	exp BRAIN INJURIES/	25
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.	4
23	ABI.tw.	5
24	static encephalopath$.tw.	0
25	CEREBRAL PALSY/	21
26	(cerebral adj3 pals$).tw.	33
27	exp MENINGITIS/	5
28	(meningitis or meningococcal).tw.	15
29	exp CRANIOCEREBRAL TRAUMA/	36
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.	60
31	exp ENCEPHALITIS/	1
32	encephaliti$.tw.	3
33	exp Cerebrovascular Accident/	1

34	stroke$.tw.	202
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw.	46
36	exp CEREBROVASCULAR DISORDERS/	109
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.	35
38	exp HYDROCEPHALUS/	4
39	hydrocephal$.tw.	6
40	SHAKEN BABY SYNDROME/	0
41	(shak$ adj3 (injur$ or syndrome$)).tw.	0
42	or/21-41	366
43	exp PARALYSIS/	11
44	HEMIPLEGIA/	0
45	exp PARAPLEGIA/	2
46	QUADRIPLEGIA/	2
47	exp PARESIS/	1
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw.	4
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw.	0
50	or/43-49	14
51	and/20,50	2
52	and/42,50	3
53	and/20,42	17
54	or/51-53	18
55	exp RHIZOTOMY/	6
56	rhizotom$.tw.	6
57	((spin$ or sensor$) adj3 nerve$ adj3 interrupt$).tw.	0
58	or/55-57	6
59	(dors$ or posterior$ or functional).tw.	213
60	GANGLIA, SPINAL/	0
61	(gangli$ adj3 spin$).tw.	0
62	or/59-61	213
63	and/58,62	6
64	(SDR or SPR or SFDR or SFPR).tw.	2
65	or/63-64	6
66	and/54,65	4

1
2

EBM Reviews - NHS Economic Evaluation Database 3rd Quarter 2011

SPAST_Q9_SDR_economic_nhseed_200711

#	Searches	Results
1	MUSCLE SPASTICITY/	6
2	exp SPASM/	0
3	exp MUSCLE HYPERTONIA/	6
4	(spastic$ or spasm$).tw.	23
5	hyperton$.tw.	7
6	exp DYSKINESIAS/	6
7	dyskinesi$.tw.	16
8	((abnormal$ or involuntar$) adj2 mov$).tw.	6
9	exp DYSTONIA/	2
10	dystoni$.tw.	7
11	exp CHOREA/	0
12	(chorea$ or choreic$ or choreo$).tw.	1
13	exp ATHETOSIS/	0
14	(athetos$ or athetoid).tw.	0
15	MUSCLE WEAKNESS/	0
16	(musc$ adj3 weak$).tw.	3
17	exp ATAXIA/	1
18	atax$.tw.	7
19	upper motor neuron? lesion$.tw.	0
20	or/1-19	64
21	exp BRAIN INJURIES/	14
22	((non progressive or non?progressive or acquired) adj2 brain injur$).tw.	2
23	ABI.tw.	7
24	static encephalopath$.tw.	0
25	CEREBRAL PALSY/	7
26	(cerebral adj3 pals$).tw.	19
27	exp MENINGITIS/	24
28	(meningitis or meningococcal).tw.	80
29	exp CRANIOCEREBRAL TRAUMA/	49
30	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).tw.	70
31	exp ENCEPHALITIS/	8
32	encephaliti$.tw.	19
33	exp Cerebrovascular Accident/	5

34	stroke$.tw.	539
35	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).tw.	60
36	exp CEREBROVASCULAR DISORDERS/	148
37	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).tw.	65
38	exp HYDROCEPHALUS/	9
39	hydrocephal$.tw.	14
40	SHAKEN BABY SYNDROME/	0
41	(shak$ adj3 (injur$ or syndrome$)).tw.	0
42	or/21-41	815
43	exp PARALYSIS/	12
44	HEMIPLEGIA/	1
45	exp PARAPLEGIA/	1
46	QUADRIPLEGIA/	4
47	exp PARESIS/	0
48	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).tw.	21
49	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).tw.	3
50	or/43-49	31
51	and/20,50	5
52	and/42,50	15
53	and/20,42	17
54	or/51-53	27
55	exp RHIZOTOMY/	2
56	rhizotom$.tw.	3
57	((spin$ or sensor$) adj3 nerve$ adj3 interrupt$).tw.	0
58	or/55-57	3
59	(dors$ or posterior$ or functional).tw.	401
60	GANGLIA, SPINAL/	0
61	(gangli$ adj3 spin$).tw.	0
62	or/59-61	401
63	and/58,62	2
64	(SDR or SPR or SFDR or SFPR).tw.	2
65	or/63-64	4
66	and/54,65	1

1
2

Embase 1980 to 2011 Week 28

SPAST_Q9_SDR_economic_embase_200711

#	Searches	Results
1	costs.tw.	119758
2	cost effective$.tw.	70567
3	economic.tw.	105487
4	or/1-3	254865
5	(metabolic adj cost).tw.	648
6	((energy or oxygen) adj cost).tw.	2527
7	4 not (5 or 6)	254554
8	SPASTICITY/	10822
9	exp MUSCLE SPASM/	42124
10	exp MUSCLE HYPERTONIA/	20406
11	(spastic$ or spasm$).ti,ab.	39561
12	hyperton$.ti,ab.	15140
13	DYSKINESIA/	9803
14	dyskinesi$.ti,ab.	12443
15	((abnormal$ or involuntar$) adj2 mov$).ti,ab.	6192
16	DYSTONIA/	12353
17	dystoni$.ti,ab.	12025
18	exp CHOREA/	25476
19	CHOREOATHETOSIS/	924
20	ATHETOSIS/	1166
21	(chorea$ or choreic$ or choreo$).ti,ab.	6083
22	(athetos$ or athetoid).ti,ab.	700
23	exp MUSCLE WEAKNESS/	185441
24	(musc$ adj3 weak$).ti,ab.	12801
25	exp ATAXIA/	37101
26	atax$.ti,ab.	25467
27	upper motor neuron? lesion$.ti,ab.	231
28	or/8-27	351619
29	exp BRAIN INJURY/	89252
30	((non progressive or non?progressive or acquired) adj2 brain injur$).ti,ab.	1029
31	ABI.ti,ab.	4548
32	static encephalopath$.ti,ab.	127
33	CEREBRAL PALSY/	18851
34	(cerebral adj3 pals$).ti,ab.	14777

35	exp MENINGITIS/	58760
36	(meningitis or meningococcal).ti,ab.	44695
37	exp HEAD INJURY/	168513
38	((head or brain or skull or cerebral or craniocerebral) adj3 (injur$ or trauma$ or damage$ or disturb$ or insult$)).ti,ab.	92509
39	exp ENCEPHALITIS/	59075
40	encephaliti$.ti,ab.	26681
41	STROKE/	102168
42	stroke$.ti,ab.	145233
43	((brain or cerebral or intra cranial or intra?cranial) adj3 (embolism or aneurysm$ or isch?emi$)).ti,ab.	50482
44	exp CEREBROVASCULAR DISEASE/	333658
45	((brain vascular or intra cranial vascular or intra?cranial vascular or cerebrovascular) adj2 (disorder$ or disease$ or insufficien$ or occlusion$ or damage$ or disturb$ or insult$)).ti,ab.	18415
46	exp HYDROCEPHALUS/	26775
47	hydrocephal$.ti,ab.	18878
48	SHAKEN BABY SYNDROME/	518
49	(shak$ adj3 (injur$ or syndrome$)).ti,ab.	657
50	or/29-49	703293
51	exp PARALYSIS/ or MONOPLEGIA/ or HEMIPLEGIA/ or PARAPLEGIA/ or QUADRIPLEGIA/	164349
52	SPASTIC PARAPLEGIA/	2348
53	PARESIS/ or MONOPARESIS/ or HEMIPARESIS/	13227
54	SPASTIC PARESIS/	1033
55	(monoplegi$ or diplegi$ or hemiplegi$ or quadriplegi$ or tetraplegi$).ti,ab.	16176
56	(monopares$ or dipares$ or hemipares$ or quadripares$ or tetrapares$).ti,ab.	10204
57	or/51-56	170606
58	and/28,57	165571
59	and/50,57	49557
60	and/28,50	63391
61	or/58-60	184169
62	exp RHIZOTOMY/	1809
63	rhizotom$.ti,ab.	1747
64	((spin$ or sensor$) adj3 nerve$ adj3 interrupt$).ti,ab.	10
65	or/62-64	2402
66	(dors$ or posterior$ or functional).ti,ab.	970830
67	SPINAL GANGLION/	13699
68	(gangli$ adj3 spin$).ti,ab.	2652
69	or/66-68	974840

70	and/65,69	1396
71	(SDR or SPR or SFDR or SFPR).ti,ab.	4945
72	or/70-71	6196
73	and/61,72	402
74	and/7,73	9

Appendix G Summary of identified studies

Question	Classification	Count
Q1. What is the effectiveness of physiotherapy and occupational therapy interventions in children with spasticity and other motor disorders?		
	Number of papers identified	1274
	Number of papers weeded out	1205
	Number of papers requested	61
	Number of papers excluded	49
	Number of papers included	12
Physiotherapy economic search		
	Number of papers identified	73
	Number of papers weeded out	66
	Number of papers requested	7
	Number of papers excluded	7
	Number of papers included	0
Q2. What is the effectiveness of orthoses compared to no orthoses at optimising function and movement and preventing or minimizing deformities in children with spasticity, and other motor disorders (dystonia,muscle weakness and choreoathetosis) caused by a non-progressive brain disorder?		
	Number of papers identified	1357
	Number of papers weeded out	1313
	Number of papers requested	41
	Number of papers excluded	35
	Number of papers included	6
Orthoses economic search		
	Number of papers identified	61
	Number of papers weeded out	60
	Number of papers requested	1
	Number of papers excluded	0

	Number of papers included	0
Q3. What is the effectiveness of oral medications specifically baclofen, benzodiazepines (diazepam, nitrazepam, clonazepam), levodopa, tizanidine and dantrolene in the management of spasticity and co-existing motor disorders in children and young people with non-progressive brain disorders?		
	Number of papers identified	468
	Number of papers weeded out	418
	Number of papers requested	50
	Number of papers excluded	41
	Number of papers included	9
What is the cost-effectiveness of oral medications specifically baclofen, benzodiazepines (diazepam, nitrazepam, clonazepam), levodopa, tizanidine and dantrolene in the management of spasticity and co-existing motor disorders in children and young people with non-progressive brain disorders?		
	Number of papers identified	102
	Number of papers weeded out	101
	Number of papers requested	1
	Number of papers excluded	0
	Number of papers included	0
Q4. Botulinum toxin		
	Number of papers identified	1137
	Number of papers weeded out	1090
	Number of papers requested	47
	Number of papers excluded	39
	Number of papers included	8
Cost-effectiveness of botulinum toxin		
	Number of papers identified	76
	Number of papers weeded out	67
	Number of papers requested	6
	Number of papers excluded	3
	Number of papers included	3

Q5. Does an effective response to a pre-implantation testing of intrathecal baclofen predict an effective long-term response in children with spasticity and with or without other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder? (Combined search for Q6)		
	Number of papers identified	1354
	Number of papers weeded out	1265
	Number of papers requested	85
	Number of papers excluded	75
	Number of papers included	10
ITB HE search (combined search for Q5&6)		
	Number of papers identified	57
	Number of papers weeded out	53
	Number of papers requested	4
	Number of papers excluded	0
	Number of papers included	0
Q7 & Q8. What is the effectiveness of multilevel and orthopaedic surgery in children with spasticity and other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder?		
	Number of papers identified	2428
	Number of papers weeded out	2410
	Number of papers requested	17
	Number of papers excluded	13
	Number of papers included	4
Orthopaedic surgery HE search		
	Number of papers identified	68
	Number of papers weeded out	68
	Number of papers requested	0
	Number of papers excluded	0
	Number of papers included	0
Q9. What is the clinical effectiveness of selective dorsal rhizotomy in children and young people with spasticity caused by a non-progressive brain disorder?		
	Number of papers identified	462
	Number of papers weeded out	441

	Number of papers requested	21
	Number of papers excluded	14
	Number of papers included	7

1

Appendix H Excluded studies

Table G.1 What is the effectiveness of physical therapy (physiotherapy and occupational therapy) interventions in children with spasticity with or without other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non progressive brain disorder?

Bibliographic Information	Reason for Exclusion
Ackman,J.D., Russman,B.S., Thomas,S.S., Buckon,C.E., Sussman,M.D., Masso,P., Sanders,J., D'Astous,J., Aiona,M.D., Shriners Hospitals,B.T.X., Comparing botulinum toxin A with casting for treatment of dynamic equinus in children with cerebral palsy, Developmental Medicine and Child Neurology, 47, 620-627, 2005	Comparison not relevant to review protocol: BoNT+casting vs. BoNT+AFO
Bertoti,D.B., Effect of short leg casting on ambulation in children with cerebral palsy, Physical Therapy, 66, 1522-1529, 1986	No relevant outcomes reported. A better quality paper on this intervention already included in review (McNee 2007)
Bottos,M., Benedetti,M.G., Salucci,P., Gasparroni,V., Giannini,S., Botulinum toxin with and without casting in ambulant children with spastic diplegia: a clinical and functional assessment, Developmental Medicine and Child Neurology, 45, 758-762, 2003	Comparison not relevant to review protocol: BoNT+PT+casting vs. BoNT+PT+AFO
Botulinum toxin type A and dynamic equinus in children with cerebral palsy: new indication. Better than repeat casts, Prescrire International, 10, 12-14, 2001	Evidence summary paper on BoNT, not on therapy
Bower,E., Michell,D., Burnett,M., Campbell,M.J., McLellan,D.L., Randomized controlled trial of physiotherapy in 56 children with cerebral palsy followed for 18 months, Developmental Medicine and Child Neurology, 43, 4-15, 2001	The therapists used a mixture of interventions - not controlling was done for one therapy against another
Boyd,R., Sakzewski,L., Ziviani,J., Abbott,D.F., Badawy,R., Gilmore,R., Provan,K., Tournier,J.D., Macdonell,R.A., Jackson,G.D., INCITE: A randomised trial comparing constraint induced movement therapy and bimanual training in children with congenital hemiplegia, BMC Neurology, 10, 4-, 2010	Study protocol. Actual trial reporting clinical outomes does not seem to have been published yet.
Boyd,R.N., Morris,M.E., Graham,H.K., Management of upper limb dysfunction in children with cerebral palsy: a systematic review. [96 refs], European Journal of Neurology, 8 Suppl 5, 150-166, 2001	It only included 4 randomised studies on interventions not relevant to the review: BoNT and NDT

Bryanton,C., Bosse,J., Brien,M., McLean,J., McCormick,A., Sveistrup,H., Feasibility, motivation, and selective motor control: virtual reality compared to conventional home exercise in children with cerebral palsy, Cyberpsychology and Behavior, 9, 123-128, 2006	Not an RCT. Besides it included 10 children only and outcomes very poorly reported
Dodd,K.J., Foley,S., Partial body-weight-supported treadmill training can improve walking in children with cerebral palsy: a clinical controlled trial, Developmental Medicine and Child Neurology, 49, 101-105, 2007	Not an RCT and 8/14 were classified as having athetoid and not spastic CP
Dodd,K.J., Taylor,N.F., Damiano,D.L., A systematic review of the effectiveness of strength-training programs for people with cerebral palsy. [40 refs], Archives of Physical Medicine and Rehabilitation, 83, 1157-1164, 2002	Only one of the included studies was an RCT and it reported outomes not relevant to our review: rate of torque development and movement time
Engsberg,J.R., Ross,S.A., Collins,D.R., Increasing ankle strength to improve gait and function in children with cerebral palsy: a pilot study, Pediatric Physical Therapy, 18, 266-275, 2006	Very small samples sizes in each arm: 3, 4, 2 and 3 children respectively
Gilmore,R., Ziviani,J., Sakzewski,L., Shields,N., Boyd,R. , A balancing act: children's experience of modified constraint-induced movement therapy, Developmental neurorehabilitation, 2010 2 p.88-94	Non comparative data (children in the bimanual therapy group were not asked about their experiences). Besides the clinical results of the trial of which this paper is a follow-up have not been published yet.
Hadders-Algra,M., van der Heide,J.C., Fock,J.M., Stremmelaar,E., van Eykern,L.A., Otten,B., Effect of seat surface inclination on postural control during reaching in preterm children with cerebral palsy, Physical Therapy, 87, 861-871, 2007	Not an RCT. Children with CP compared to children with no neurological impairment
Hahn,M.E., Simkins,S.L., Gardner,J.K., Kaushik,G., A dynamic seating for children with cerebral palsy, Journal of Musculoskeletal Research, 12, 21-30, 2009	Outcomes available only for 7 children in the experimental group and 4 children in the control group.
Hankinson,J., Morton,R.E., Use of a lying hip abduction system in children with bilateral cerebral palsy: A pilot study, Developmental Medicine and Child Neurology, 44, 177-180, 2002	Very small case series (n=11)
Hellweg,S., Johannes,S., Physiotherapy after traumatic brain injury: A systematic review of the literature, Brain Injury, 22, 365-373, 2008	Explicitly excluded children and younger people <12 years. References checked.
Hill,J., The effects of casting on upper extremity motor disorders after brain injury, American Journal of Occupational Therapy, 48, 219-224, 1994	Mainly adults. One group (mean age 24.9, range 9 to 44) and another group all adults
Hoare,Brian J., Wasiak,Jason, Imms,Christine, Carey,Leeanne, Constraint-induced movement therapy in the treatment of the upper limb in children with hemiplegic cerebral palsy, Cochrane Database of Systematic Reviews, -, 2009	It only included 3 trials: one of them was not randomised and the other two included outcomes not relevant to the review: Box and Blocks test,

	Erhardt Developmental Prehension Assessment, WeeFIM, PMAL, EBS, CAUT and QUEST
Ketelaar,M., Vermeer,A., Hart,H., van Petegem-van,Beek E., Helders,P.J., Effects of a functional therapy program on motor abilities of children with cerebral palsy, Physical Therapy, 81, 1534-1545, 2001	Excluded as review as it included non-comparative studies. Relevant RCTs already retrieved as individual papers
Lannin,N.A., Novak,I., Cusick,A., A systematic review of upper extremity casting for children and adults with central nervous system motor disorders. [49 refs], Clinical Rehabilitation, 21, 963-976, 2007	Included studies in adults, non-RCTs and 2 RCTs in children but comparison excluded as per protocol (NDT + casting vs traditional therapy and vs. NDT alone respectively)
Leyendecker,C., Electrical stimulation therapy and its effects on the general activity of motor impaired cerebral palsied children; a comparative study of the Bobath physiotherapy and its combination with the Hufschmidt electrical stimulation therapy (author's transl), Rehabilitation, 14, 150-159, 1975	Paper not published in English
Makela,P., Hammerbeck,U., Rushton,D.N., Rehabilitation of the younger adult stroke patient, Therapy, 3, 273-289, 2006	Review paper. No references to children found
Marshall,S., Teasell,R., Bayona,N., Lippert,C., Chundamala,J., Villamere,J., Mackie,D., Cullen,N., Bayley,M., Motor impairment rehabilitation post acquired brain injury. [70 refs], Brain Injury, 21, 133-160, 2007	Systematic review that included only studies in adults or in interventions not relevant to review protocol
McNamara,L., Casey,J., Seat inclinations affect the function of children with cerebral palsy: a review of the effect of different seat inclines. [28 refs], Disability and Rehabilitation Assistive Technology, 2, 309-318, 2007	Review that only included small case series (<25) and the comparative papers included compared children with CP with children without any neurological impairment
Miedaner,J.A., Renander,J., The effectiveness of classroom passive stretching programs for increasing or maintaining passive range of motion in non-ambulatory children: An evaluation of frequency, Physical and Occupational Therapy in Pediatrics, 7, 35-43, 1987	On top of the passive stretching programme at school evaluated in the study, children received concurrently passive stretching at home, as well as positioning and bracing and these were not adequately controlled for.
Noronha,J., Bundy,A., Groll,J., The effect of positioning on the hand function of boys with cerebral palsy, American Journal of Occupational Therapy, 43, 507-512, 1989	Outcomes not relevant to review: Jebsen-Taylor Hand Function Test and modified Hohlstein's classification
Nwaobi,O.M., Seating orientations and upper extremity function in children with cerebral palsy, Physical Therapy, 67, 1209-1212, 1987	Not an RCT. Small sample size (n=13). Outcomes not relevant to review (performance time of a prescribed upper extremity activity in 4 different seating

orientations)

O'Brien,M., Tsurumi,K., The effect of two body positions on head righting in severely disabled individuals with cerebral palsy, American Journal of Occupational Therapy, 37, 673-680, 1983	Not an RCT. Outcomes not relevant to the review protocol: frequency and duration of head righting during a feeding task by means of a mercury switch system
Odman,P., Krevers,B., Oberg,B., Parents' perceptions of the quality of two intensive training programmes for children with cerebral palsy, Developmental Medicine and Child Neurology, 49, 93-100, 2007	Interventions included not relevant to review protocol:ecclectic approach and conductive education (adapted to Sweedish circumstances)
Park,E.S., Rha,D.W., Botulinum toxin type A injection for management of upper limb spasticity in children with cerebral palsy: a literature review. [45 refs], Yonsei Medical Journal, 47, 589-603, 2006	Intervention not relevant: review is on BoNT, not on therapy
Park,E.S., Rha,D.W., Lee,J.D., Yoo,J.K., Chang,W.H., The short-term effects of combined modified constraint-induced movement therapy and botulinum toxin injection for children with spastic hemiplegic cerebral palsy, Neuropediatrics, 40, 269-274, 2009	Not an RCT. Comparison not relevant for review protocol (BoNT + CIMT vs. BoNT)
Pin,T., Dyke,P., Chan,M., The effectiveness of passive stretching in children with cerebral palsy, Developmental Medicine and Child Neurology, 48, 855-862, 2006	Excluded as a review as it included non-comparative studies and studies reporting outcomes not relevant to our review
Pin,T.W., Effectiveness of static weight-bearing exercises in children with cerebral palsy. [34 refs][Erratum appears in Pediatr Phys Ther. 2007 Summer;19(2):172-8], Pediatric Physical Therapy, 19, 62-73, 2007	Excluded as a review as it included non-comparative studies, studies with very small sample size and/or reporting outomes not relevant to our review
Reid,D.T., The effects of the saddle seat on seated postural control and upper-extremity movement in children with cerebral palsy, Developmental Medicine and Child Neurology, 38, 805-815, 1996	Sample size < 10 participants(6 children only). Excluded as per protocol
Reid,S., Hamer,P., Alderson,J., Lloyd,D., Neuromuscular adaptations to eccentric strength training in children and adolescents with cerebral palsy, Developmental Medicine and Child Neurology, 52, 358-363, 2010	It only reported outcomes not relevant to the review: peak torque and work rates and EMG data
Rogers,A., Furler,B.L., Brinks,S., Darrah,J., A systematic review of the effectiveness of aerobic exercise interventions for children with cerebral palsy: an AACPDM evidence report. [22 refs], Developmental Medicine and Child Neurology, 50, 808-814, 2008	Excluded as review as it included non comparative studies and interventions not relevant to our review. References checked

Scholtes,V.A., Becher,J.G., Comuth,A., Dekkers,H., Van,Dijk L., Dallmeijer,A.J., Effectiveness of functional progressive resistance exercise strength training on muscle strength and mobility in children with cerebral palsy: a randomized controlled trial, Developmental Medicine and Child Neurology, 52, e107-e113, 2010	Excluded as per protocol: conventional physical therapy programme in the control group not described. Better trials already included for this type of intervention
Scholtes,V.A., Dallmeijer,A.J., Rameckers,E.A., Verschuren,O., Tempelaars,E., Hensen,M., Becher,J.G., Lower limb strength training in children with cerebral palsy--a randomized controlled trial protocol for functional strength training based on progressive resistance exercise principles, BMC Pediatrics, 8, 41-, 2008	Study protocol only
Scianni,A., Butler,J.M., Ada,L., Teixeira-Salmela,L.F., Muscle strengthening is not effective in children and adolescents with cerebral palsy: a systematic review. [35 refs], Australian Journal of Physiotherapy, 55, 81-87, 2009	Excluded as a review as it included studies on interventions not relevant (electrical stimulation). Relevant RCTs already retrieved as individual papers
Shamsoddini,A.R., Hollisaz,M.T., Effect of sensory integration therapy on gross motor function in children with cerebral palsy, Iranian Journal of Child Neurology, 3, 43-48, 2009	Intervention not included in review protocol
Tremblay,F., Malouin,F., Richards,C.L., Dumas,F., Effects of prolonged muscle stretch on reflex and voluntary muscle activations in children with spastic cerebral palsy, Scandinavian Journal of Rehabilitation Medicine, 22, 171-180, 1990	Outcomes reported not relevant to review: torque and EMG outcomes
Van den Berg-Emons RJ, Van Baak,M.A., Speth,L., Saris,W.H., Physical training of school children with spastic cerebral palsy: effects on daily activity, fat mass and fitness, International Journal of Rehabilitation Research, 21, 179-194, 1998	Intervention included a mix of activities not relevant to review protocol. Outcomes reported not relevant to review either (Anthropometry, level of daily PA, and physical fitness)
Verschuren,O., Ketelaar,M., Takken,T., Helders,P.J.M., Gorter,J.W., Exercise programs for children with cerebral palsy: A systematic review of the literature, American Journal of Physical Medicine and Rehabilitation, 87, 404-417, 2008	Excluded as review as it included non-comparative studies. Relevant RCTs already retrieved as individual papers
Volman,M.J.M., Wijnroks,A., Vermeer,A., Effect of task context on reaching performance in children with spastic hemiparesis, Clinical Rehabilitation, 16, 684-692, 2002	Not an RCT. Very small sample size (n=12) and outcomes not relevant (kinematics only)
Wallen,M., O'Flaherty,S.J., Waugh,M.C., Functional outcomes of intramuscular botulinum toxin type a and occupational therapy in the upper limbs of children with cerebral palsy: a randomized controlled trial, Archives of Physical Medicine and Rehabilitation, 88, 1-10, 2007	Comparison not relevant to review protocol: BoNT + therapy vs. therapy alone. One of the remaining comparisons already included in the BoNT review.
Weindling,A.M., Cunningham,C.C., Glenn,S.M., Edwards,R.T., Reeves,D.J., Additional therapy for young children with spastic cerebral palsy: A randomised controlled trial, Health Technology Assessment, 11, iii-55, 2007	Study protocol only

Weindling,A.M., Intervention after brain injury to reduce disability. [31 refs], Seminars in Neonatology, 5, 53-60, 2000	Excluded as review as it mostly included papers on not relevant interventions (NDT)and other reporting non relevant outcomes. References checked.
Wiart,L., Darrah,J., Kembhavi,G., Stretching with children with cerebral palsy: What do we know and where are we going?, Pediatric Physical Therapy, #20, 173-178, 2008	Excluded as a review as it included non-comparative studies and with a very small sample size. References checked
Williams,H., Pountney,T., Effects of a static bicycling programme on the functional ability of young people with cerebral palsy who are non-ambulant, Developmental Medicine and Child Neurology, 49, 522-527, 2007	Not an RCT and small sample size (n=11). Better quality studies already included for this intervention

Table G.2 What is the effectiveness of orthotic interventions (for example, ankle-foot orthoses, knee splints, and upper limb orthoses) as compared to no orthoses to optimise movement and function, to prevent or treat contractures in children with spasticity and with or without other motor disorders caused by a non-progressive brain disorder?

Bibliographic Information	Reason for Exclusion
Balaban,B., Yasar,E., Dal,U., Yazicioglu,K., Mohur,H., Kalyon,T.A., The effect of hinged ankle-foot orthosis on gait and energy expenditure in spastic hemiplegic cerebral palsy, Disability and Rehabilitation, 29, 139-144, 2007	comparison not relevant hinged orthoses vs none
Bjornson,K.F., Schmale,G.A., damczyk-Foster,A., McLaughlin,J., The effect of dynamic ankle foot orthoses on function in children with cerebral palsy, Journal of Pediatric Orthopaedics, 26, 773-776, 2006	RCT - Comparison not requested (DAFO vs no DAFO)
Blair,E., Ballantyne,J., Horsman,S., Chauvel,P., A study of a dynamic proximal stability splint in the management of children with cerebral palsy, Developmental Medicine and Child Neurology, 37, 544-554, 1995	Not randomised
Boyd,R.N., Dobson,F., Parrott,J., Love,S., Oates,J., Larson,A., Burchall,G., Chondros,P., Carlin,J., Nattrass,G., Graham,H.K., The effect of botulinum toxin type A and a variable hip abduction orthosis on gross motor function: a randomized controlled trial, European Journal of Neurology, 8 Suppl 5, 109-119, 2001	Comparison not relevant - current tx vs current tx + BoNT + SWASH
Brunner,R., Meier,G., Ruepp,T., Comparison of a stiff and a spring-type ankle-foot orthosis to improve gait in spastic hemiplegic children, Journal of Pediatric Orthopaedics, 18, 719-726, 1998	Not randomised
Centre for Reviews and Dissemination., A review of the efficacy of lower-limb orthoses used for cerebral palsy (Structured abstract), Database of Abstracts of Reviews of Effects, -, 2010	Systematic review already identified

Crenshaw,S., Herzog,R., Castagno,P., Richards,J., Miller,F., Michaloski,G., Moran,E., The efficacy of tone-reducing features in orthotics on the gait of children with spastic diplegic cerebral palsy, Journal of Pediatric Orthopaedics, 20, 210-216, 2000	Comparison not relevant - hinged AFO vs rigid TR footplate vs SMO vs SMO footplate vs barefoot
Desloovere K, Molenaers G, Van Gestel L, Huenaerts C, Van Campenhout A, Callewaert B, Van de Walle P, Seyler J. How can push-off be preserved during use of an ankle foot orthosis in children with hemiplegia? A prospective controlled study.Gait Posture. 2006 Oct;24(2):142-51	No relevant comparison - PLS vs dual carbon fibre spring AFO vs barefoot and shoes
Elliott C, Reid S, Hamer P, Alderson J, Elliott B. Lycra(®) arm splints improve movement fluency in children with cerebral palsy, Gait Posture. 2011 Feb;33(2):214-9. Epub 2010 Dec 4.	Outcomes are not relevant to this review
Elliott CM, Reid SL, Alderson JA, Elliott BC. Lycra arm splints in conjunction with goal-directed training can improve movement in children with cerebral palsy, NeuroRehabilitation. 2011;28(1):47-54.	Pre- versus post-treatment data reported for the arm splint and therapy group only. No across-group comparison
Exner, C.E. & Bonder, B.R. (1983). Comparative effects of three hand splints on bilateral hand use, grasp, and arm-hand posture in hemiplegic children: A pilot study, The Occupational Therapy Journal of Research, 3, 75-92.	No comparator group
Figueiredo,E.M., Ferreira,G.B., Maia,MoreiraR, Kirkwood,R.N., Fetters,L., Efficacy of ankle-foot orthoses on gait of children with cerebral palsy: systematic review of literature, Pediatric Physical Therapy, #20, -223, 2008	Systematic review - checked for relevant references and excluded
Flegle,J.H., Leibowitz,J.M., Improvement in grasp skill in children with hemiplegia with the MacKinnon splint, Research in Developmental Disabilities, 9, 145-151, 1988	Relevant study population too small for inclusion (n=3)
Graham,H.K., Boyd,R., Carlin,J.B., Dobson,F., Lowe,K., Nattrass,G., Thomason,P., Wolfe,R., Reddihough,D., Does botulinum toxin a combined with bracing prevent hip displacement in children with cerebral palsy and "hips at risk"? A randomized, controlled trial, Journal of Bone and Joint Surgery - American Volume, 90, 23-33, 2008	Comparison does not distinguish between the effects of BoNT and hip brace (BoNT + hip brace vs no tx)
Hainsworth,F., Harrison,M.J., Sheldon,T.A., Roussounis,S.H., A preliminary evaluation of ankle orthoses in the management of children with cerebral palsy, Developmental Medicine and Child Neurology, 39, 243-247, 1997	One comparison relevant, but population too small for inclusion - Daytime wear of rigid (n=3) or hinged (n=9) orthoses vs no daytime orthoses
Han SH, Kim T, Jang SH, Kim MJ, Park SB, Yoon SI, Choi BK, Lee MY, Lee KH. The effect of an arm sling on energy consumption while walking in hemiplegic patients: a randomized comparison, Clin Rehabil. 2011 Jan;25(1):36-42.	Study conducted in an adult population
Hazneci,B., Tan,A.K., Guncikan,M.N., Dincer,K., Kalyon,T.A., Comparison of the efficacies of botulinum toxin A and Johnstone pressure splints against hip adductor spasticity among patients with cerebral palsy: a randomized trial, Military Medicine, 171, 653-656, 2006	Comparison not relevant - BoNT vs Johnstone Pressure Splints

Kerem,M., Livanelioglu,A., Topcu,M., Effects of Johnstone pressure splints combined with neurodevelopmental therapy on spasticity and cutaneous sensory inputs in spastic cerebral palsy, Developmental Medicine and Child Neurology, 43, 307-313, 2001	Not randomised
Lam,W.K., Leong,J.C.Y., Li,Y.H., Hu,Y., Lu,W.W., Biomechanical and electromyographic evaluation of ankle foot orthosis and dynamic ankle foot orthosis in spastic cerebral palsy, Gait and Posture, 22, 189-197, 2005	No acclimatisation period for use of AFO prior to testing
Lannin,N., Scheinberg,A., Clark,K., AACPDM systematic review of the effectiveness of therapy for children with cerebral palsy after botulinum toxin A injections, Developmental Medicine and Child Neurology, 48, 533-539, 2006	Systematic review - checked for relevant references and excluded
Maltais,D., Bar-Or,O., Galea,V., Pierrynowski,M., Use of orthoses lowers the O(2) cost of walking in children with spastic cerebral palsy, Medicine and Science in Sports and Exercise, 33, 320-325, 2001	Comparison not relevant hinged AFO vs shoes
Morris,C., A review of the efficacy of lower-limb orthoses used for cerebral palsy, Developmental Medicine and Child Neurology, 44, -211, 2002	Systematic review - checked for relevant references and excluded
Mossberg,K.A., Linton,K.A., Friske,K., Ankle-foot orthoses: Effect on energy expenditure of gait in spastic diplegic children, Archives of Physical Medicine and Rehabilitation, 71, 490-494, 1990	no acclimatisation period for use of AFO
Nicholson,J.H., Morton,R.E., Attfield,S., Rennie,D., Assessment of upper-limb function and movement in children with cerebral palsy wearing lycra garments, Developmental Medicine and Child Neurology, 43, 384-391, 2001	Case series
Ounpuu S, Bell KJ, Davis RB 3rd, DeLuca PA. An evaluation of the posterior leaf spring orthosis using joint kinematics and kinetics. J Pediatr Orthop. 1996 May-Jun;16(3):378-84.	Retrospective study
Park ES, Park CI, Chang HJ, Choi JE, Lee DS.The effect of hinged ankle-foot orthoses on sit-to-stand transfer in children with spastic cerebral palsy. Arch Phys Med Rehabil. 2004 Dec;85(12):2053-7.	Comparison is not relevant to this review : hinged AFO versus barefoot
Radtka,S.A., Skinner,S.R., Dixon,D.M., Johanson,M.E., A comparison of gait with solid, dynamic, and no ankle-foot orthoses in children with spastic cerebral palsy, Physical Therapy, 77, 395-409, 1997	not randomised
Reid DT, Sochaniwskyj A. Influences of a hand positioning device on upper-extremity control of children with cerebral palsy, Int J Rehabil Res. 1992;15(1):15-29.	Outcomes are not relevant to this review
Ridgewell,E., Dobson,F., Bach,T., Baker,R., A systematic review to determine best practice reporting guidelines for AFO interventions in studies involving children with cerebral palsy, Prosthetics and Orthotics International, 34, 129-145, 2010	Systematic review - checked for relevant references and excluded
Romkes J, Brunner R. Comparison of a dynamic and a hinged ankle-foot orthosis by gait analysis in patients with hemiplegic cerebral palsy, Gait Posture. 2002 Feb;15(1):18-24.	Randomisation not confirmed

Smiley SJ, Jacobsen FS, Mielke C, Johnston R, Park C, Ovaska GJ. A comparison of the effects of solid, articulated, and posterior leaf-spring ankle-foot orthoses and shoes alone on gait and energy expenditure in children with spastic diplegic cerebral palsy, Orthopedics. 2002 Apr;25(4):411-5	Randomisation within study not confirmed
Smith,P.A., Hassani,S., Graf,A., Flanagan,A., Reiners,K., Kuo,K.N., Roh,J.Y., Harris,G.F., Brace evaluation in children with diplegic cerebral palsy with a jump gait pattern, Journal of Bone and Joint Surgery - American Volume, 91, 356-365, 2009	Comparison not relevant - DAFO, HAFO, Control, barefoot
Suzuki N, Shinohara T, Kimizuka M, Yamaguchi K, Mita K. Energy expenditure of diplegic ambulation using flexible plastic ankle foot orthoses, Bull Hosp Jt Dis. 2000;59(2):76-80.	Comparison not relevant - flexible plastic AFO versus shoes
utti-Ramo,I., Suoranta,J., Anttila,H., Malmivaara,A., Makela,M., Effectiveness of upper and lower limb casting and orthoses in children with cerebral palsy: An overview of review articles, American Journal of Physical Medicine and Rehabilitation, 85, 89-103, 2006	Systematic review - checked for relevant references and excluded
Wesdock,Kimberly A., Edge,Annabel M., Effects of Wedged Shoes and Ankle-Foot Orthoses on Standing Balance and Knee Extension in Children with Cerebral Palsy Who Crouch, Pediatric Physical Therapy, 15, -, 2003	Not randomised

Table G.3 What is the effectiveness of oral medications including baclofen, benzodiazepines (diazepam, nitrazepam, clonazepam), tizanidine, dantrolene, clonidine, trihexyphenidyl, tetrabenazine and levodopa in the treatment of spasticity and other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder in babies, children and young people?

Bibliographic Information	Reason for Exclusion
Andersen,John, Hartling,Lisa, Tjosvold,Lisa, Oral baclofen for the management of spasticity in children with cerebral palsy, Cochrane Database of Systematic Reviews, -, 2009	Protocol only.
Basmajian,J.V., Shankardass,K., Russell,D., Yucel,V., Ketazolam treatment for spasticity: double-blind study of a new drug, Archives of Physical Medicine and Rehabilitation, 65, 698-701, 1984	Adults only.
Basmajian,J.V., Super,G.A., Dantrolene sodium in the treatment of spasticity, Archives of Physical Medicine and Rehabilitation,Arch Phys Med Rehabil, 54, 61-64, 1973	Adults only.
Bes,A., Eyssette,M., Pierrot-Deseilligny,E., Rohmer,F., Warter,J.M., A multi-centre, double-blind trial of tizanidine, a new antispastic agent, in spasticity associated with hemiplegia, Current Medical Research and Opinion, 10, 709-718, 1988	Adults only.
Cardoso,E.S., Rodrigues,B.M., Barroso,M., Menezes,C.J., Lucena,R.S., Nora,D.B., Melo,A., Botulinum toxin type A for the treatment of the spastic equinus foot in cerebral palsy, Pediatric Neurology, 34, 106-109, 2006	Study looks at BoNT-A not oral medications.

Carter,C.H., A CONTROLLED EVALUATION OF TWO BENZODIAZEPINE DERIVATES IN THE MANAGEMENT OF MENTALLY RETARDED, CEREBRAL-PALSIED PATIENTS, Medical Times, 92, 796-798, 1964	Diazepam vs. non-included drug (LA I).
Carter,C.H., Evaluation of diazepam in skeletal muscle hypertonicity in cerebral palsy, Archives of Physical Medicine and Rehabilitation, 49, 519-523, 1968	Intramuscular not oral administration of diazepam.
Chyatte,S.B., Basmajian,J.V., Dantrolene sodium: long-term effects in severe spasticity, Archives of Physical Medicine and Rehabilitation, 54, 311-315, 1973	Case series
Chyatte,S.B., Birdsong,J.H., Bergman,B.A., The effects of dantrolene sodium on spasticity and motor performance in hemiplegia, Southern Medical Journal,South.Med.J., 64, 180-185, 1971	Adults only.
Chyatte,S.B., Birdsong,J.H., Roberson,D.L., Dantrolene sodium in athetoid cerebral palsy, Archives of Physical Medicine and Rehabilitation, 54, 365-368, 1973	Adults and children combined; results for children not separated.
Chyatte,S.B., Birdsong,J.H., The use of dantrolene sodium in disorders of the central nervous system, Southern Medical Journal,South.Med.J., 64, 830-834, 1971	Adults only.
Dahlin,M., Knutsson,E., Nergardh,A., Treatment of spasticity in children with low dose benzodiazepine, Journal of the Neurological Sciences, 117, 54-60, 1993	Intramuscular not oral administration of clonazepam.
Dai,A.I., New approach to cerebral palsy with spastic equinus foot; oral tizanidine and high dose intramuscular botulinum toxin type A, Neurology Psychiatry and Brain Research, 13, 151-154, 2006	Retrospective case series.
Dai,A.I., Wasay,M., Awan,S., Botulinum toxin type A with oral baclofen versus oral tizanidine: a nonrandomized pilot comparison in patients with cerebral palsy and spastic equinus foot deformity, Journal of Child Neurology, 23, 1464-1466, 2008	No relevant drug comparisons.
Glass,A., Hannah,A., A comparison of dantrolene sodium and diazepam in the treatment of spasticity, Paraplegia, 12, 170-174, 1974	Adults only.
Goldstein,M., The treatment of cerebral palsy: What we know, what we don't know. [25 refs], Journal of Pediatrics, 145, S42-S46, 2004	Narrative review.
Gormley,Jr, Management of spasticity in children: Part 2: Oral medications and intrathecal baclofen, Journal of Head Trauma Rehabilitation, 14, -209, 1999	Narrative review.
Groves,L., Shellenberger,M.K., Davis,C.S., Tizanidine treatment of spasticity: a meta-analysis of controlled, double-blind, comparative studies with baclofen and diazepam, Advances in Therapy, 15, 241-251, 1998	Adults only.
Heggarty,H., Wright,T., Tetrabenazine in athetoid cerebral palsy, Developmental Medicine and Child Neurology, 16, 137-142, 1974	Participants had athetosis and no description of any co-existing spasticity given

Howard,Delyth Catrin, Anti Spastic Medication for Spasticity in Cerebral Palsy, Cochrane Database of Systematic Reviews, -, 2009	Protocol only.
Lee,Y.S., Kim,C.H., Byun,S.D., Lee,M.Y., International 7: treatment of athetosis in cerebral plasy [sic] patients with low dose clonazepam, American Journal of Physical Medicine & Rehabilitation, 85, 287-287, 2006	Abstract only.
Lopez,S.I., Troncoso,S.M., De,L.A.A.B., Clunes,C.A., Hernandez,C.M., Baclofen in spastic cerebral palsy. <ORIGINAL> EFECTIVIDAD DE BACLOFENO EN EL TRATAMIENTO DE ESPASTICIDAD DE ORIGEN CEREBRAL, Revista Chilena De Pediatria, 67, 206-211, 1996	Spanish language paper.
Lubsch,L., Habersang,R., Haase,M., Luedtke,S., Oral baclofen and clonidine for treatment of spacticity in children, Journal of Child Neurology, 21, 1090-1092, 2006	Retrospective case series.
Meythaler,J.M., Clayton,W., Davis,L.K., Guin-Renfroe,S., Brunner,R.C., Orally delivered baclofen to control spastic hypertonia in acquired brain injury, Journal of Head Trauma Rehabilitation, 19, 101-108, 2004	Adults and children; results not separated for children.
Minford,A.M.B., Brown,J.K., Minns,R.A., The effect of baclofen on the gait of hemiplegic children assessed by means of polarised light goniometry, Scottish Medical Journal, 25, S-S, 1980	Not a trial.
Montane,E., Vallano,A., Laporte,J.R., Oral antispastic drugs in nonprogressive neurologic diseases: a systematic review. [33 refs], Neurology, 63, 1357-1363, 2004	Inclusion criteria do not match review question protocol.
Mooney,J.F.,III, Koman,L.A., Smith,B.P., Pharmacologic management of spasticity in cerebral palsy, Journal of Pediatric Orthopedics, 23, 679-686, 2003	Narrative review.
Nogen,A.G., Effect of dantrolene sodium on the incidence of seizures in children with spasticity, Child's Brain, 5, 420-425, 1979	irrelevant population
Nogen,A.G., Medical treatment for spasticity in children with cerebral palsy, Child's Brain, 2, 304-308, 1976	Comparison of dantrolene vs diazepam not included.
O'Donnell,M., Armstrong,R., Pharmacologic interventions for management of spasticity in cerebral palsy, Mental Retardation and Developmental Disabilities Research Reviews, 3, -211, 1997	Narrative review.
Patel,D.R., Soyode,O., Pharmacologic interventions for reducing spasticity in cerebral palsy. [21 refs], Indian Journal of Pediatrics, 72, 869-872, 2005	Narrative review.
Pinder,R.M., Brogden,R.N., Speight,T.M., Avery,G.S., Dantrolene sodium: a review of its pharmacological properties and therapeutic efficacy in spasticity. [62 refs], Drugs, 13, 3-23, 1977	Non-systematic review.

Sanger,T.D., Bastian,A., Brunstrom,J., Damiano,D., Delgado,M., Dure,L., Gaebler-Spira,D., Hoon,A., Mink,J.W., Sherman-Levine,S., Welty,L.J., Child Motor Study Group., Prospective open-label clinical trial of trihexyphenidyl in children with secondary dystonia due to cerebral palsy, Journal of Child Neurology, 22, 530-537, 2007	no comparative group
Shankaran,S., Prevention, diagnosis, and treatment of cerebral palsy in near-term and term infants, Clinical Obstetrics and Gynecology, 51, 829-839, 2008	Narrative review.
Tariq,M., Akhtar,N., Ali,M., Rao,S., Badshah,M., Irshad,M., Eperisone compared to physiotherapy on muscular tone of stroke patients: a prospective randomized open study, JPMA - Journal of the Pakistan Medical Association, 55, 202-204, 2005	Comparison not covered in protocol.
Tilton,A.H., Management of Spasticity in Children with Cerebral Palsy, Seminars in Pediatric Neurology, 11, 58-65, 2004	Narrative review.
van Doornik, J., Kukke,S., McGill,K., Rose,J., Sherman-Levine,S., Sanger,T.D., Oral baclofen increases maximal voluntary neuromuscular activation of ankle plantar flexors in children with spasticity due to cerebral palsy, Journal of Child Neurology, 23, 635-639, 2008	Physiological outcomes.
Vargus-Adams,J.N., Michaud,L.J., Kinnett,D.G., McMahon,M.A., Cook,F.E., 'Effects of oral baclofen on children with cerebral palsy', Developmental Medicine and Child Neurology,Dev.Med.Child Neurol., 46, 787-, 2004	Uncontrolled clinical trial.
Vasquez-Briceno,A., rellano-Saldana,M.E., Leon-Hernandez,S.R., Morales-Osorio,M.G., [The usefulness of tizanidine. A one-year follow-up of the treatment of spasticity in infantile cerebral palsy], Revista de neurologia, 43, 132-136, 2006	Spanish language paper.
Young,J.A., Clinical experience in the use of baclofen in children with spastic cerebral palsy: A further report, Scottish Medical Journal,Scott.Med.J., 25, S-S, 1980	Uncontrolled clinical trial.
Young,R.R., Delwaide,P.J., Spasticity: I, New England Journal of Medicine, 304, 28-33, 1981	Background information only.

Table G.4 What is the effectiveness of the long-term use of Intramuscular Botulinum toxin A or B (BoNT) in combination with other interventions (physio/OT/orthoses) as compared to other interventions at reducing spasticity, maintaining motor function and preventing secondary complications in children with spasticity and with or without other motor disorders (dystonia, muscle weakness and choreoathetosis) caused by a non-progressive brain disorder?

Bibliographic Information	Reason for Exclusion
Abolfazli,R., Olyaei,G.R., Talebian,S., Ansari,N., Sheikh,M., Comparative study of neurodevelopment treatment with and without Dysport injection in the management of spasticity of hemiplegic patients, European Journal of Neurology, 14, 155, 2007-, 2007	Included adults only

Baird,M.W., Vargus-Adams,J., Outcome measures used in studies of botulinum toxin in childhood cerebral palsy: A systematic review, Journal of Child Neurology, 25, 721-727, 2010	Systematic review of outcomes
Baker,R., Jasinski,M., iag-Tymecka,I., Michalowska-Mrozek,J., Bonikowski,M., Carr,L., MacLean,J., Lin,J.P., Lynch,B., Theologis,T., Wendorff,J., Eunson,P., Cosgrove,A., Botulinum toxin treatment of spasticity in diplegic cerebral palsy: a randomized, double-blind, placebo-controlled, dose-ranging study, Developmental Medicine and Child Neurology, 44, 666-675, 2002	Comparison irrelevant : dose comparison
Blackmore,A.M., Boettcher-Hunt,E., Jordan,M., Chan,M.D.Y., A systematic review of the effects of casting on equinus in children with cerebral palsy: An evidence report of the AACPDM, Developmental Medicine and Child Neurology, 49, 781-790, 2007	Checked for relevant studies and excluded
Botulinum toxin type A and dynamic equinus in children with cerebral palsy. Better than repeat casts, Prescrire International, 10, 12-14, 2001	Review : checked for relevant studies and excluded
Boyd, R. N., The central and peripheral effects of botulinum toxin A in children with cerebral palsy, 2004	Included in Hoare systematic review
Boyd,R.N., Dobson,F., Parrott,J., Love,S., Oates,J., Larson,A., Burchall,G., Chondros,P., Carlin,J., Nattrass,G., Graham,H.K., The effect of botulinum toxin type A and a variable hip abduction orthosis on gross motor function: a randomized controlled trial, European Journal of Neurology, 8 Suppl 5, 109-119, 2001	Comparison not relevant : BoNT + current treatment + SWASH vs current treatment
Boyd,R.N., Hays,R.M., Current evidence for the use of botulinum toxin type A in the management of children with cerebral palsy: a systematic review, European journal of neurology : the official journal of the European Federation of Neurological Societies, 8 Suppl 5, -20, 2001	Checked for relevant studies and excluded
Corry,I.S., Cosgrove,A.P., Duffy,C.M., McNeill,S., Taylor,T.C., Graham,H.K., Botulinum toxin A compared with stretching casts in the treatment of spastic equinus: a randomised prospective trial, Journal of Pediatric Orthopedics, 18, 304-311, 1998	Comparison irrelevant : BoNT vs casting
Detrembleur,C., Lejeune,T.M., Renders,A., Van Den Bergh,P.Y., Botulinum toxin and short-term electrical stimulation in the treatment of equinus in cerebral palsy, Movement Disorders, 17, 162-169, 2002	Therapy intervention (electrical stimulation) not requested by GDG
Fazzi,E., Maraucci,I., Torrielli,S., Motta,F., Lanzi,G., Factors predicting the efficacy of botulinum toxin-A treatment of the lower limb in children with cerebral palsy, Journal of Child Neurology, 20, 661-666, 2005	Non comparative results
Fehlings,D., Rang,M., Glazier,J., Steele,C., An evaluation of botulinum-A toxin injections to improve upper extremity function in children with hemiplegic cerebral palsy, Journal of Pediatrics, 137, 331-337, 2000	Included in Hoare systematic review

Figgitt,D.P., Noble,S., Botulinum toxin B: A review of its therapeutic potential in the management of cervical dystonia, Drugs, 62, 705-722, 2002	Constituent trials for relevant comparisons were conducted in adults
Flett,P.J., Stern,L.M., Waddy,H., Connell,T.M., Seeger,J.D., Gibson,S.K., Botulinum toxin A versus fixed cast stretching for dynamic calf tightness in cerebral palsy, Journal of Paediatrics and Child Health, 35, 71-77, 1999	Comparison irrelevant : BoNT vs casting
Gordon,M.F., Barron,R., Effectiveness of repeated treatment with botulinum toxin type A across different conditions, Southern Medical Journal, 99, 853-861, 2006	Out of date systematic review about broader use of BoNT
Graham,H.K., Boyd,R., Carlin,J.B., Dobson,F., Lowe,K., Nattrass,G., Thomason,P., Wolfe,R., Reddihough,D., Does botulinum toxin a combined with bracing prevent hip displacement in children with cerebral palsy and "hips at risk"? A randomized, controlled trial, Journal of Bone and Joint Surgery - American Volume, 90, 23-33, 2008	Comparison irrelevant : BoNT + therapy + SWASH vs normal treatment
Hazneci,B., Tan,A.K., Guncikan,M.N., Dincer,K., Kalyon,T.A., Comparison of the efficacies of botulinum toxin A and Johnstone pressure splints against hip adductor spasticity among patients with cerebral palsy: a randomized trial, Military Medicine, 171, 653-656, 2006	Comparison irrelevant: BoNT + Bobath technique vs Johnstone Pressure Splint and Bobath technique
Kanellopoulos,A.D., Mavrogenis,A.F., Mitsiokapa,E.A., Panagopoulos,D., Skouteli,H., Vrettos,S.G., Tzanos,G., Papagelopoulos,P.J., Long lasting benefits following the combination of static night upper extremity splinting with botulinum toxin A injections in cerebral palsy children, European journal of physical and rehabilitation medicine., 45, 501-506, 2009	Comparison of use of a splint, not BoNT and OT vs OT
Kawamura,A., Campbell,K., Lam-Damji,S., Fehlings,D., A randomized controlled trial comparing botulinum toxin A dosage in the upper extremity of children with spasticity, Developmental Medicine and Child Neurology, 49, 331-337, 2007	Comparison against placebo
Lowe,K., Novak,I., Cusick,A., Low-dose/high-concentration localized botulinum toxin A improves upper limb movement and function in children with hemiplegic cerebral palsy, Developmental Medicine and Child Neurology, 48, 170-175, 2006	Included in Hoare systematic review
Lowe K, Novak I, Cusick A. Repeat injection of botulinum toxin A is safe and effective for upper limb movement and function in children with cerebral palsy, Dev Med Child Neurol. 2007 Nov;49(11):823-9.	No comparative group
Lukban,M.B., Rosales,R.L., Dressler,D., Effectiveness of botulinum toxin A for upper and lower limb spasticity in children with cerebral palsy: A summary of evidence, Journal of Neural Transmission, 116, 319-331, 2009	Checked for relevant studies and excluded
Mulligan,D., Bologna,R., Botulinum toxin: Historical perspective and treatment of neurogenic and idiopathic overactive bladder, Therapy, 6, 165-175, 2009	Checked for relevant studies and excluded

Paul,S.M., Siegel,K.L., Malley,J., Jaeger,R.J., Evaluating interventions to improve gait in cerebral palsy: A meta-analysis of spatiotemporal measures, Developmental Medicine and Child Neurology, 49, 542-549, 2007	Checked for relevant studies and excluded
Polak,F., Morton,R., Ward,C., Wallace,W.A., Doderlein,L., Siebel,A., Double-blind comparison study of two doses of botulinum toxin A injected into calf muscles in children with hemiplegic cerebral palsy, Developmental Medicine and Child Neurology, 44, 551-555, 2002	Comparison irrelevant : Dose comparison
Rameckers,E.A., Duysens,J., Speth,L.A., Vles,H.J., Smits-Engelsman,B.C., Effect of addition of botulinum toxin-A to standardized therapy for dynamic manual skills measured with kinematic aiming tasks in children with spastic hemiplegia, Journal of Rehabilitation Medicine, 42, 332-338, 2010	No relevant outcomes
Russo,R.N., Crotty,M., Miller,M.D., Murchland,S., Flett,P., Haan,E., Upper-limb botulinum toxin A injection and occupational therapy in children with hemiplegic cerebral palsy identified from a population register: a single-blind, randomized, controlled trial, Pediatrics, 119, e1149-e1158, 2007	Included in Hoare systematic review
Satila,H., Pietikainen,T., Iisalo,T., Lehtonen-Raty,P., Salo,M., Haataja,R., Koivikko,M., utti-Ramo,I., Botulinum toxin type A injections into the calf muscles for treatment of spastic equinus in cerebral palsy: a randomized trial comparing single and multiple injection sites, American Journal of Physical Medicine and Rehabilitation, 87, 386-394, 2008	Comparison irrelevant : single vs multiple injection sites
Scholtes,V.A., Dallmeijer,A.J., Knol,D.L., Speth,L.A., Maathuis,C.G., Jongerius,P.H., Becher,J.G., Effect of multilevel botulinum toxin a and comprehensive rehabilitation on gait in cerebral palsy, Pediatric Neurology, 36, 30-39, 2007	Comparison irrelevant : BoNT and Therapy vs usual care
Scholtes,V.A., Dallmeijer,A.J., Knol,D.L., Speth,L.A., Maathuis,C.G., Jongerius,P.H., Becher,J.G., The combined effect of lower-limb multilevel botulinum toxin type a and comprehensive rehabilitation on mobility in children with cerebral palsy: a randomized clinical trial, Archives of Physical Medicine and Rehabilitation, 87, 1551-1558, 2006	Comparison irrelevant : BoNt and Therapy vs usual care
Simpson,D.M., Clinical trials of botulinum toxin in the treatment of spasticity, Muscle & nerve, 6, -175, 1997	Checked for relevant studies and excluded
Speth,L.A.W.M., Leffers,P., Janssen-Potten,Y.J.M., Vles,J.S.H., Botulinum toxin A and upper limb functional skills in hemiparetic cerebral palsy: A randomized trial in children receiving intensive therapy, Developmental Medicine and Child Neurology, 47, 468-473, 2005	Included in Hoare systematic review
Wallen,M., O'Flaherty,S.J., Waugh,M.C., Functional outcomes of intramuscular botulinum toxin type a and occupational therapy in the upper limbs of children with cerebral palsy: a randomized controlled trial, Archives of Physical Medicine and Rehabilitation, 88, 1-10, 2007	Included in Hoare systematic review
Wang,Y., Gao,B., A dose - Response relationship research on botulinum toxin type A local intramuscular injections of lower extremity spasticity in children with cerebral palsy, Child's	Comparison irrelevant : Dose comparison

Nervous System, 24, 545-547, 2008	
Wissel,J., Heinen,F., Schenkel,A., Doll,B., Ebersbach,G., Muller,J., Poewe,W., Botulinum toxin A in the management of spastic gait disorders in children and young adults with cerebral palsy: a randomized, double-blind study of "high-dose" versus "low-dose" treatment, Neuropediatrics, 30, 120-124, 1999	Comparison irrelevant : Dose comparison
Wong,V., Evidence-based approach of the use of Botulinum toxin type A (BTX) in cerebral palsy, Pediatric Rehabilitation, 6, 85-96, 2003	Checked for relevant papers and excluded
Zier,J.L., Rivard,P.F., Krach,L.E., Wendorf,H.R., Effectiveness of sedation using nitrous oxide compared with enteral midazolam for botulinum toxin A injections in children, Developmental Medicine and Child Neurology, 50, 854-858, 2008	Comparison irrelevant : sedation techniques

Table G.5 In children and young people with spasticity due to a non-progressive brain disorder does an intrathecal baclofen test (ITB-T) help to identify those likely to benefit from pump-administered continuous intrathecal baclofen (CITB)? **and** In children and young people with spasticity due to a non-progressive brain disorder what are the benefits and risks of continuous intrathecal baclofen therapy (CITB)?

Bibliographic Information	Reason for Exclusion
Albright,A.L., Awaad,Y., Muhonen,M., Boydston,W.R., Gilmartin,R., Krach,L.E., Turner,M., Zidek,K.A., Wright,E., Swift,D., Bloom,K., Performance and complications associated with the synchromed 10-ml infusion pump for intrathecal baclofen administration in children, Journal of Neurosurgery, 101, 64-68, 2004	Better quality studies included
Albright,A.L., Barron,W.B., Fasick,M.P., Polinko,P., Janosky,J., Continuous intrathecal baclofen infusion for spasticity of cerebral origin, JAMA: Journal of the American Medical Association, 270, 2475-2477, 1993	Better quality studies included
Albright,A.L., Barry,M.J., Fasick,M.P., Janosky,J., Effects of continuous intrathecal baclofen infusion and selective posterior rhizotomy on upper extremity spasticity, Pediatric Neurosurgery, 23, 82-85, 1995	Poorly reporting of outcomes. The only outomes reported are upper extremity Ashworth scores, whereas range of motion and function mobility are only reported in narrative way. There are better quality studies already included reporting those outcomes
Albright,A.L., Barry,M.J., Painter,M.J., Shultz,B., Infusion of intrathecal baclofen for generalized dystonia in cerebral palsy, Journal of Neurosurgery, 88, 73-76, 1998	Ver small sample size (n=12) and particpants included adults, unclear how many. Age range : 4ys to 42ys, median 12ys.

Albright,A.L., Barry,M.J., Shafton,D.H., Ferson,S.S., Intrathecal baclofen for generalized dystonia, Developmental Medicine and Child Neurology, 43, 652-657, 2001	Excluded as per protocol. Authors stated that only 33/86 patients had spasticity coexisting with dystonia. GDG stipulated that this proportion should be at least 60%-70%
Albright,A.L., Cervi,A., Singletary,J., Intrathecal baclofen for spasticity in cerebral palsy, JAMA, 265, 1418-1422, 1991	The authors claimed that this was the testing phase of a follow-up study where the pump was implanted, but there are more patients included in the follow up and it is unclear where they came from. Because of the previous it is not possible to establish predictability of the outomes for the testing. besides, adverse effects during the placebo periods were not reported
Armstrong,R.W., Steinbok,P., Cochrane,D.D., Kube,S.D., Fife,S.E., Farrell,K., Intrathecally administered baclofen for treatment of children with spasticity of cerebral origin, Journal of Neurosurgery, 87, 409-414, 1997	No outomes for effectiveness of the testing are reported. Only 12 children proceeded to have the pump implanted. Better quality studies available
Becker,R., Alberti,O., Bauer,B.L., Continuous intrathecal baclofen infusion in severe spasticity after traumatic or hypoxic brain injury, Journal of Neurology, 244, 160-166, 1997	Adult population
Bensmail,D., Ward,A.B., Wissel,J., Motta,F., Saltuari,L., Lissens,J., Cros,S., Beresniak,A., Cost-effectiveness modeling of intrathecal baclofen therapy versus other interventions for disabling spasticity, Neurorehabilitation and Neural Repair, 23, 546-552, 2009	No data on effectiveness
Bjornson,K.F., McLaughlin,J.F., Loeser,J.F., Nowak-Cooperman,K.M., Russel,M., Bader,K.A., Desmond,S.A., Oral motor, communication, and nutritional status of children during intrathecal baclofen therapy: a descriptive pilot study, Archives of Physical Medicine & Rehabilitation, 84, 500-506, 2003	Excluded as per protocol. Cross sectional study. Better studies available for relevant outomes reported
Borowski,A., Littleton,A.G., Borkhuu,B., Presedo,A., Shah,S., Dabney,K.W., Lyons,S., McMannus,M., Miller,F., Complications of intrathecal baclofen pump therapy in pediatric patients, Journal of Pediatric Orthopedics, 30, 76-81, 2010	Better quality studies included
Borowski,A., Shah,S.A., Littleton,A.G., Dabney,K.W., Miller,F., Baclofen pump implantation and spinal fusion in children: techniques and complications, Spine, 33, 1995-2000, 2008	Posterior spinal fusion out of the guideline scope
Bottanelli,M., Rubini,G., Venturelli,V., Cosentino,A., Rossato,G., Vicentini,S., Romito,S., Rizzuto,N., Bertolasi,L., 'Weight and height gain after intrathecal baclofen pump implantation in children with spastic tetraparesis', Developmental Medicine and Child Neurology, 46, 788-789, 2004	Sample size <10 (only 3 children)

Brennan,P.M., Whittle,I.R., Intrathecal baclofen therapy for neurological disorders: a sound knowledge base but many challenges remain., British Journal of Neurosurgery, 22, 508-519, 2008	Excluded as review as it included conditions other than non-progressive brain disorders. References checked
Brochard,S., Lempereur,M., Filipetti,P., Remy-Neris,O., Changes in gait following continuous intrathecal baclofen infusion in ambulant children and young adults with cerebral palsy, Developmental Neurorehabilitation, 12, 397-405, 2009	
Brochard,S., Remy-Neris,O., Filipetti,P., Bussel,B., Intrathecal baclofen infusion for ambulant children with cerebral palsy, Pediatric Neurology, 40, 265-270, 2009	Retrospective case series with fewer than 50 patients
Buonaguro,V., Scelsa,B., Curci,D., Monforte,S., Iuorno,T., Motta,F., Epilepsy and intrathecal baclofen therapy in children with cerebral palsy, Pediatric Neurology, 33, 110-113, 2005	Retrospective case series of 60 children.
Burn,S.C., Zeller,R., Drake,J.M., Do baclofen pumps influence the development of scoliosis in children?, Journal of Neurosurgery, Pediatrics.. 5, 195-199, 2010	Retrospective case series of fewer than 50 series. Comparative studies available for the outcomes reported in this study
Butler,C., Campbell,S., Evidence of the effects of intrathecal baclofen for spastic and dystonic cerebral palsy. AACPDM Treatment Outcomes Committee Review Panel. [33 refs], Developmental Medicine and Child Neurology, 42, 634-645, 2000	Excluded as systematic review as their inclusion citeria different from ours. References checked
Campbell,W.M., Ferrel,A., McLaughlin,J.F., Grant,G.A., Loeser,J.D., Graubert,C., Bjornson,K., Long-term safety and efficacy of continuous intrathecal baclofen, Developmental Medicine & Child Neurology, 44, 660-665, 2002	Excluded as per protocol. Study design is a combination of small retrospective case series (n=21)and a cross sectional survey. Better studies available for relevant outomes reported
Ceulemans,B., van,Rhijn J., Kenis,S., Krols,R., Laridon,A., Van,Havenbergh T., Opisthotonus and intrathecal treatment with baclofen (ITB) in children, European Journal of Pediatrics, 167, 641-645, 2008	Retrospective case series of fewer than 50 children. Better studies available for the outcomes reported in this study
Creedon,S.D., Dijkers,M.P.J.M., Hinderer,S.R., Intrathecal baclofen for severe spasticity: A meta-analysis, International Journal of Rehabilitation and Health, 3, 171-185, 1997	The vast majority of the papers included were conducted in adult population. Individual references have been checked and studies in children considered for inclusion in our review
Damiano,D.L., Gilgannon,M.D., Abel,M.F., Responsiveness and uniqueness of the pediatric outcomes data collection instrument compared to the gross motor function measure for measuring orthopaedic and neurosurgical outcomes in cerebral palsy, Journal of Pediatric Orthopedics, 25, 641-645, 2005	Very small sample size (n=11). Intervention no adequately described. Better quality studies available

de,Lissovoy G., Matza,L.S., Green,H., Werner,M., Edgar,T., Cost-effectiveness of intrathecal baclofen therapy for the treatment of severe spasticity associated with cerebral palsy, Journal of Child Neurology, 22, 49-59, 2007	US study. Not enough detail in the paper to allow the analysis to be adapted for the UK.
Delhaas,E.M., Beersen,N., Redekop,W.K., Klazinga,N.S., Long-term outcomes of continuous intrathecal baclofen infusion for treatment of spasticity: A prospective multicenter follow-up study, Neuromodulation, 11, 227-236, 2008	Mostly adult population and 70% of participants had either multiple sclerosis or spinal cord injury.
Ethans,K.D., Schryvers,O.I., Nance,P.W., Casey,A.R., Intrathecal drug therapy using the Codman Model 3000 Constant Flow Implantable Infusion Pumps: experience with 17 cases, Spinal Cord, 43, 214-218, 2005	Only one patient had cerebral palsy. The remaining patients had spinal cord injuries or multiple sclerosis
Fares,Y., Khazim,R.M., del Barrio,E.R., Burzaco,J.A., Dosage of intrathecal baclofen maintenance therapy in the spastic syndromes, Journal Medical Libanais - Lebanese Medical Journal, 52, 13-18, 2004	BL unable to supply paper. We do not feel we need to pursue in the search as we think from the abstract that this paper is on adult population
Fitzgerald,J.J., Tsegaye,M., Vloeberghs,M.H., Treatment of childhood spasticity of cerebral origin with intrathecal baclofen: a series of 52 cases, British Journal of Neurosurgery, 18, 240-245, 2004	Audit stuyd.Outcomes for effectiveness only reported in a narrative way, no figures reported (Reduction in spasticity, Improvement in range of motion, Improvement in walking and slower progression of mobile deformities). Authors recommended that an RCT should be conducted. For adverse effects better quality studies are available
Fulkerson,D.H., Boaz,J.C., Luerssen,T.G., Interaction of ventriculoperitoneal shunt and baclofen pump, Child's Nervous System, 23, 733-738, 2007	Sample size <10 (only 3 children)
Gerszten,P.C., Albright,A.L., Barry,M.J., Effect on ambulation of continuous intrathecal baclofen infusion, Pediatric Neurosurgery, 27, 40-44, 1997	It is unclear whether the paper is a retrospective or a prospective case series. Sample size=24 and population age range is 9 to 30 years with a mean of 18 years. Unclear how many children were included.
Gerszten,P.C., Albright,A.L., Johnstone,G.F., Intrathecal baclofen infusion and subsequent orthopedic surgery in patients with spastic cerebral palsy, Journal of Neurosurgery, 88, 1009-1013, 1998	Excluded as per protocol: retrospective case series with fewer than 50 patients. Adults were included as it is unclear in what proportion. Outcomes reported have also been reproted in a better quality prospective study included in the review (Gooch, 2004)

Ginsburg,G.M., Lauder,A.J., Progression of scoliosis in patients with spastic quadriplegia after the insertion of an intrathecal baclofen pump, Spine, 32, 2745-2750, 2007	Retrospective case series of fewer than 50 series. Comparative studies available for the outcomes reported in this study (Shilt,2008 and Senaran, 2007)
Gooch,J.L., Oberg,W.A., Grams,B., Ward,L.A., Walker,M.L., Care provider assessment of intrathecal baclofen in children, Developmental Medicine & Child Neurology, 46, 548-552, 2004	Better quality studies included
Grabb,P.A., Guin-Renfroe,S., Meythaler,J.M., Midthoracic catheter tip placement for intrathecal baclofen administration in children with quadriparetic spasticity, Neurosurgery, 45, 833-836, 1999	Small sample size (n=12. Position of the catheter not a relevant question for the guideline
Guillaume,D., Van,HavenberghA, Vloeberghs,M., Vidal,J., Roeste,G., A clinical study of intrathecal baclofen using a programmable pump for intractable spasticity, Archives of Physical Medicine and Rehabilitation, 86, 2165-2171, 2005	Only 37/138 patients younger than 18 years (27%) and no subgroup analysis performed by age
Hagglund,G., Andersson,S., Duppe,H., Lauge-Pedersen,H., Nordmark,E., Westbom,L., Prevention of severe contractures might replace multilevel surgery in cerebral palsy: results of a population-based health care programme and new techniques to reduce spasticity, Journal of Pediatric Orthopaedics, Part B, 14, 269-273, 2005	Population-based study, no specific outcomes reported for ITB
Hoving,M.A., Evers,S.M., Ament,A.J., van Raak,E.P., Vles,J.S., Dutch Study Group on Child Spasticity., Intrathecal baclofen therapy in children with intractable spastic cerebral palsy: a cost-effectiveness analysis, Developmental Medicine and Child Neurology, 50, 450-455, 2008	Dutch study. Not enough detail in the paper to convert analysis to UK setting.
Hoving,M.A., van Kranen-Mastenbroek,V.H., van Raak,E.P., Spincemaille,G.H., Hardy,E.L., Vles,J.S., On Behalf Of The Dutch Study Group On Child Spasticity., Placebo controlled utility and feasibility study of the H-reflex and flexor reflex in spastic children treated with intrathecal baclofen, Clinical Neurophysiology, 117, 1508-1517, 2006	Reports mainly electrophysiological outomes of a study already included
Kofler,M., Matzak,H., Saltuari,L., The impact of intrathecal baclofen on gastrointestinal function, Brain Injury, 16, 825-836, 2002	Mainly adult population. Only 3 children/young people younger than 19 years
Kolaski,K., Logan,L.R., A review of the complications of intrathecal baclofen in patients with cerebral palsy., Neurorehabilitation, 22, 383-395, 2007	Excluded a review as it included single case reports and small case series of less than 5 participants. References checked
Krach,L.E., Kriel,R.L., Gilmartin,R.C., Swift,D.M., Storrs,B.B., Abbott,R., Ward,J.D., Bloom,K.K., Brooks,W.H., Madsen,J.R., McLaughlin,J.F., Nadell,J.M., GMFM 1 year after continuous intrathecal baclofen infusion, Pediatric Rehabilitation, 8, 207-213, 2005	Better quality studies included

Krach,L.E., Kriel,R.L., Nugent,A.C., Complex Dosing Schedules for Continuous Intrathecal Baclofen Infusion, Pediatric Neurology, 37, 354-359, 2007	Retrospective case series. Adult participant included (age 6y to 45 y, mean 18, median 15. Study is a comparison of â€œsimpleâ€ vs. â€œcomplexâ€ dosing regimen which is not one of our objectives, outomes are poorly reported. Better quality studies already included
Krach,L.E., Nettleton,A., Klempka,B., Satisfaction of individuals treated long-term with continuous infusion of intrathecal baclofen by implanted programmable pump, Pediatric Rehabilitation, 9, 210-218, 2006	
Marshall,S., Teasell,R., Bayona,N., Lippert,C., Chundamala,J., Villamere,J., Mackie,D., Cullen,N., Bayley,M., Motor impairment rehabilitation post acquired brain injury, Brain Injury, 21, 133-160, 2007	Excluded as review as it included interventions other than ITB and also children and adults. References checked
McCoy,A.A., Fox,M.A., Schaubel,D.E., Ayyangar,R.N., Weight gain in children with hypertonia of cerebral origin receiving intrathecal baclofen therapy, Archives of Physical Medicine & Rehabilitation, 87, 1503-1508, 2006	Excluded as per protocol: retrospective case series with fewer than 50 children. Prospective study already included reporting this outcome (Albright 2004)
McCoy,R.N., Blasco,P.A., Russman,B.S., O'Malley,J.P., Validation of a care and comfort hypertonicity questionnaire, Developmental Medicine and Child Neurology, 48, 181-187, 2006	Only 11 patients with ITB pump and no baseline data reported
Meythaler,J.M., DeVivo,M.J., Hadley,M., Prospective study on the use of bolus intrathecal baclofen for spastic hypertonia due to acquired brain injury, Archives of Physical Medicine and Rehabilitation, 77, 461-466, 1996	Adult population
Meythaler,J.M., Guin-Renfroe,S., Brunner,R.C., Hadley,M.N., Intrathecal baclofen for spastic hypertonia from stroke, Stroke, 32, 2099-2109, 2001	Mostly adult population. Only 2 patients younger than 18 years
Meythaler,J.M., Guin-Renfroe,S., Grabb,P., Hadley,M.N., Long-term continuously infused intrathecal baclofen for spastic-dystonic hypertonia in traumatic brain injury: 1-year experience.[Erratum appears in Arch Phys Med Rehabil 1999 Apr;80(4):474], Archives of Physical Medicine and Rehabilitation, 80, 13-19, 1999	Mostly adult population
Meythaler,J.M., Guin-Renfroe,S., Law,C., Grabb,P., Hadley,M.N., Continuously infused intrathecal baclofen over 12 months for spastic hypertonia in adolescents and adults with cerebral palsy, Archives of Physical Medicine & Rehabilitation, 82, 155-161, 2001	Mostly adult population. Only 5 patients were younger than 18 years

Meythaler,J.M., McCary,A., Hadley,M.N., Prospective assessment of continuous intrathecal infusion of baclofen for spasticity caused by acquired brain injury: a preliminary report, Journal of Neurosurgery, 87, 415-419, 1997	Mostly adult population. Only 1 young person aged 17 years old.
Minford,A.M.B., Brown,J.K., Minns,R.A., The effect of baclofen on the gait of hemiplegic children assessed by means of polarised light goniometry, Scottish Medical Journal, 25, S-S, 1980	This study is on oral baclofen
Motta,F., Antonello,C.E., Stignani,C., Upper limbs function after intrathecal baclofen therapy in children with secondary dystonia, Journal of Pediatric Orthopedics, 29, 817-821, 2009	Very small sample size (n=11) and unclear whether these children had coexisting spasticity. Another study by same authors on children who also had dystonia but clearly some of them also had spasticity as well is already included
Motta,F., Buonaguro,V., Stignani,C., The use of intrathecal baclofen pump implants in children and adolescents: safety and complications in 200 consecutive cases, Journal of Neurosurgery, 107, 32-35, 2007	Better quality studies included
Motta,F., Stignani,C., Antonello,C.E., Upper limb function after intrathecal baclofen treatment in children with cerebral palsy, Journal of Pediatric Orthopedics, 28, 91-96, 2008	Better quality studies included
Murphy,N.A., Irwin,M.C., Hoff,C., Intrathecal baclofen therapy in children with cerebral palsy: efficacy and complications, Archives of Physical Medicine and Rehabilitation, 83, 1721-1725, 2002	Better quality studies included
Ordia,J.I., Fischer,E., Adamski,E., Spatz,E.L., Continuous intrathecal baclofen infusion delivered by a programmable pump for the treatment of severe spasticity following traumatic brain injury, Neuromodulation, 5, 103-107, 2002	
Penn,R.D., Gianino,J.M., York,M.M., Intrathecal baclofen for motor disorders, Movement Disorders, 10, 675-677, 1995	Mainly adult population (only 2 children)
Quality Standards Subcommittee of the American Academy of Neurology and the Practice Committee of the Child Neurology Society, Delgado,M.R., Hirtz,D., Aisen,M., Ashwal,S., Fehlings,D.L., McLaughlin,J., Morrison,L.A., Shrader,M.W., Tilton,A., Vargus-Adams,J., Practice parameter: pharmacologic treatment of spasticity in children and adolescents with cerebral palsy (an evidence-based review): report of the Quality Standards Subcommittee of the American Academy of Neurology and the Practice Committee of the Child Neurology Society. [40 refs], Neurology, 74, 336-343, 2010	Excluded as review as it included interventions other than ITB. References checked
Radensky,P.W., Archer,J.W., Dournaux,S.F., O'Brien,C.F., The estimated cost of managing focal spasticity: a physician practice patterns survey, Neurorehabilitation and Neural Repair, 15, 57-68, 2001	Paper on health economics only

Rifici,C., Kofler,M., Kronenberg,M., Kofler,A., Bramanti,P., Saltuari,L., Intrathecal baclofen application in patients with supraspinal spasticity secondary to severe traumatic brain injury, Functional Neurology, 9, 29-34, 1994	Only 8 participants, mostly older than 18 years
Steinbok,P., Daneshvar,H., Evans,D., Kestle,J.R.W., Cost analysis of continuous intrathecal baclofen versus selective functional posterior rhizotomy in the treatment of spastic quadriplegia associated with cerebral palsy, Pediatric Neurosurgery, 22, 255-265, 1995	
Stempien,L., Tsai,T., Intrathecal baclofen pump use for spasticity: A clinical survey, American Journal of Physical Medicine and Rehabilitation, 79, 536-541, 2000	No subgroup analysis performed for children
Stokic,D.S., Yablon,S.A., Hayes,A., Comparison of clinical and neurophysiologic responses to intrathecal baclofen bolus administration in moderate-to-severe spasticity after acquired brain injury, Archives of Physical Medicine and Rehabilitation, 86, 1801-1806, 2005	Mostly adult population (mean age 31 years)
Turner,M.S., Early use of intrathecal baclofen in brain injury in pediatric patients, Acta Neurochirurgica - Supplement, 87, 81-83, 2003	Sample size < 10 (only 6 children). Excluded as per protocol
Van,Schaeybroeck P., Nuttin,B., Lagae,L., Schrijvers,E., Borghgraef,C., Feys,P., Intrathecal baclofen for intractable cerebral spasticity: a prospective placebo-controlled, double-blind study, Neurosurgery, 46, 603-609, 2000	Only 4 participants younger than 19 years
Vender,J.R., Hester,S., Waller,J.L., Rekito,A., Lee,M.R., Identification and management of intrathecal baclofen pump complications: a comparison of pediatric and adult patients, Journal of Neurosurgery, 104, 9-15, 2006	Better quality studies included
Vloeberghs,M., Keetley,R., Morton,R., Intrathecal baclofen in the management of spasticity due to cerebral palsy, Pediatric Rehabilitation, 8, 172-179, 2005	Not a research paper but audit data. Better quality studies available
Von,KochC, Park,T.S., Steinbok,P., Smyth,M., Peacock,W.J., Selective posterior rhizotomy and intrathecal baclofen for the treatment of spasticity, Pediatric Neurosurgery, 35, 57-65, 2001	Non systematic review
Ward,A., Hayden,S., Dexter,M., Scheinberg,A., Continuous intrathecal baclofen for children with spasticity and/or dystonia: Goal attainment and complications associated with treatment, Journal of Paediatrics and Child Health, 45, 720-726, 2009	Excluded as per protocol. Only 44% of children clearly had spasticity (and caused by a NPBI).
Wiens,H.D., Spasticity in children with cerebral palsy: a retrospective review of the effects of intrathecal baclofen, Issues in Comprehensive Pediatric Nursing, 21, 49-61, 1998	Retrospective case series of fewer than 50 children. Better studies available for the outcomes reported in this study
Wunderlich,C.A., Krach,L.E., Gram-negative meningitis and infections in individuals treated with intrathecal baclofen for spasticity: a retrospective study, Developmental Medicine & Child Neurology, 48, 450-455, 2006	Only 7 children. Excluded as per protocol

Table G.6 In children and young people with spasticity due to a non-progressive brain disorder what are the benefits and risks of continuous intrathecal baclofen therapy (CITB) ?

Bibliographic Information	Reason for Exclusion
List of excluded studies for Q6 merged with list of excluded studies for Q5 in Table G.5	

Table G.7 What is the effectiveness of orthopaedic surgery in preventing or treating musculoskeletal deformity in children with spasticity caused by a non-progressive brain disorder? **and** What is the effectiveness of single event multilevel orthopaedic surgery (SEMLS) in managing musculoskeletal deformity in children with spasticity caused by a non-progressive brain disorder?

Bibliographic Information	Reason for Exclusion
A 2-year follow-up of outcomes following orthopedic surgery or selective dorsal rhizotomy in children with spastic diplegia Thomas,S.S., Buckon,C.E., Piatt,J.H., Aiona,M.D., Sussman,M.D. 2004. Journal of Pediatric Orthopaedics Part B	Outcomes are too poorly presented to extract data
Changes in pelvic rotation after soft tissue and bony surgery in ambulatory children with cerebral palsy. Kay,R.M., Rethlefsen,S., Reed,M., Do,K.P., Skaggs,D.L., Wren,T.A. 2004 Journal of Pediatric Orthopedics	Outcomes not requested : retrospective review comparing FDRO + soft tissue surgery vs soft tissue surgery alone. Outcomes are pre-post op pelvic rotation, hip rotation, foot progression.
Experiences of Use of the Cerebral Palsy Hemiplegic Hand in Young Persons Treated with Upper Extremity Surgery. Skold,A., Josephsson,S., Fitinghoff,H., Eliasson,A.C. 2007 Journal of Hand Therapy	Case series - Qualitative review of experiences of 10 young people 5 years after upper extremity surgery
Functional gains after surgical procedures in spastic upper extremity: A comparative study between children and adults. Malizos,K.N., Liantsis,A.K., Varitimidis,S.E., Dailiana,Z.H., Rigopoulos,N.S. 2010. Journal of Pediatric Orthopaedics Part B	Case series
Hip displacement in cerebral palsy Soo,B., Howard,J.J., Boyd,R.N., Reid,S.M., Lanigan,A., Wolfe,R., Reddihough,D., Graham,H.K. 2006. Journal of Bone and Joint Surgery - Series A	Conducted using register data
Hip surveillance in Tasmanian children with cerebral palsy. Connelly,A., Flett,P., Graham,H.K., Oates,J. 2009. Journal of Paediatrics and Child Health	Conducted using register data
Improving calf muscle strength in patients with spastic equinovarus deformity by transfer of the long toe flexors to the Os calcis Keenan,M.A., Lee,G.A., Tuckman,A.S., Esquenazi,A. 1999. Journal of Head Trauma Rehabilitation	Mainly adult population

Outcomes of combined hamstring lengthening and rectus femoris transfer in children versus adolescents. Perkins,C., Scarborough,N., Sullivan,E., Scott,A.C. 2009. Developmental Medicine and Child Neurology	Retrieval abandoned - conference abstract
Prevention of dislocation of the hip in children with cerebral palsy. The first ten years of a population-based prevention programme Hagglund,G., Andersson,S., Duppe,H., Lauge-Pedersen,H., Nordmark,E., Westbom,L. 2005 Journal of Bone and Joint Surgery - Series B	Conducted using register data
Recurrence of equinus foot deformity in cerebral palsy patients following surgery: a review Koman,L.A., Smith,B.P., Barron,R. 2003. Journal of the Southern Orthopaedic Association	Systematic review of case series
Surgical treatment for the thumb-in-palm deformity in patients with cerebral palsy Smeulders,Mark J.C., Coester,Annemieke, Kreulen,Michiel. 2009. Cochrane Database of Systematic Reviews	Systematic review of case series
Functional outcomes following single-event multilevel surgery of the upper extremity for children with hemiplegic cerebral palsy. Smitherman JA, Davids JR, Tanner S, Hardin JW, Wagner LV, Peace LC, Gidewall MA. J Bone Joint Surg Am. 2011 Apr 6;93(7):655-61.	Outcomes are not relevant to this review
The unstable paralytic hip: treatment by combined pelvic and femoral osteotomy and transiliac psoas transfer. Molloy,M.K. 1986. Journal of Pediatric Orthopedics	Case series

Table G.9 What is the clinical effectiveness of Selective Dorsal Rhizotomy in children and young people with spasticity caused by a non-progressive brain disorder?

Bibliographic Information	Reason for Exclusion
Abbott,R., Johann-Murphy,M., Shiminski-Maher,T., Quartermain,D., Forem,S.L., Gold,J.T., Epstein,F.J., Selective dorsal rhizotomy: outcome and complications in treating spastic cerebral palsy, Neurosurgery, 33, 851-857, 1993	Fuller report of the same patient population already included (Abbott 1992)
Australian Medical Services Advisory Committee, Selective Dorsal Rhizotomy (SDR): Assessment for Nationally Funded Centre Status, -, 2006	Systematic review - included studies list checked and then the review was excluded.
Golan,J.D., Hall,J.A., O'Gorman,G., Poulin,C., Benaroch,T.E., Cantin,M.A., Farmer,J.P., Spinal deformities following selective dorsal rhizotomy, Journal of Neurosurgery, 106, 441-449, 2007	Sample size too small (n=98 children)
Grunt,S., Becher,J.G., Vermeulen,R.J. Systematic review of long term outcomes and adverse effects following SDR, Developmental Medicine and Child Neurology, 53(6):490-8 2011	Systematic review of long term outcomes and adverse effects following SDR. Includes case series (n=18, none with sample size>200) and comparative studies (n=3, previously

	excluded)
Kan,P., Gooch,J., Amini,A., Ploeger,D., Grams,B., Oberg,W., Simonsen,S., Walker,M., Kestle,J., Surgical treatment of spasticity in children: comparison of selective dorsal rhizotomy and intrathecal baclofen pump implantation, Childs Nervous System, 24, 239-243, 2008	Non randomised observational retrospective comparative study with historical controls
Langerak,N.G., Lamberts,R.P., Fieggen,A.G., Peter,J.C., Peacock,W.J., Vaughan,C.L., Functional Status of Patients With Cerebral Palsy According to the International Classification of Functioning, Disability and Health Model: A 20-Year Follow-Up Study After Selective Dorsal Rhizotomy, Archives of Physical Medicine and Rehabilitation, 90, 994-1003, 2009	Sample size too small (n=14 children)
Langerak,N.G., Vaughan,C.L., Hoffman,E.B., Figaji,A.A., Fieggen,A.G., Peter,J.C., Incidence of spinal abnormalities in patients with spastic diplegia 17 to 26 years after selective dorsal rhizotomy, Childs Nervous System, 25, 1593-1603, 2009	Sample size too small (n=30 children)
Li,Z., Zhu,J., Liu,X., Deformity of lumbar spine after selective dorsal rhizotomy for spastic cerebral palsy, Microsurgery, 28, 10-12, 2008	Sample size too small (n=61 children)
Macwilliams,B.A., Johnson,B.A., Shuckra,A.L., D'Astous,J.L. Functional decline in children undergoing selective dorsal rhizotomy after age 10, Developmental Medicine and Child Neurology, 53(8):717-23,. 2011	Retrospective study
Maenpaa, H, Salokorpi,T., Jaakkola,R., Blomstedt,G., Sainio,K., Merikanto,J., von,Wendt L., Follow-up of children with cerebral palsy after selective posterior rhizotomy with intensive physiotherapy or physiotherapy alone, Neuropediatrics, 34, 67-71, 2003	Non randomised observational comparative study. No comparative data reported for only available outcome prioritised by the GDG (Modified Ashworth)
McLaughlin,J., Bjornson,K., Temkin,N., Steinbok,P., Wright,V., Reiner,A., Roberts,T., Drake,J., O'Donnell,M., Rosenbaum,P., Barber,J., Ferrel,A., Selective dorsal rhizotomy: meta-analysis of three randomized controlled trials, Developmental Medicine and Child Neurology, 44, 17-25, 2002	The guideline protocol included a greater number of outcomes than had been extracted for this meta-analysis and so the systematic review was checked for relevant papers and excluded and the original studies were used.
Steinbok,P., Hicdonmez,T., Sawatzky,B., Beauchamp,R., Wickenheiser,D., Spinal deformities after selective dorsal rhizotomy for spastic cerebral palsy, Journal of Neurosurgery, 102, 363-373, 2005	Sample size too small(n = 105 children)

Steinbok,P., Tidemann,A.J., Miller,S., Mortenson,P., Bowen-Roberts,T., Electrophysiologically guided versus non-electrophysiologically guided selective dorsal rhizotomy for spastic cerebral palsy: a comparison of outcomes, Childs Nervous System, 25, 1091-1096, 2009	Comparison (Electrophysiological versus non-electrophysiological guidance during SDR) not stipulated in protocol
Wong,A.M., Pei,Y.C., Lui,T.N., Chen,C.L., Wang,C.M., Chung,C.Y., Comparison between botulinum toxin type A injection and selective posterior rhizotomy in improving gait performance in children with cerebral palsy, Journal of Neurosurgery, 102, 385-389, 2005	Non randomised observational comparative study. Only pre-post treatment comparison given. No comparisons made across groups

Appendix I Evidence tables

The evidence tables are presented in a separate file for the stakeholder consultation

Appendix J Forest plots

The final published guideline will include Forest plots for all meta-analyses conducted for the guideline

Appendix K GRADE tables

These are the complete GRADE tables which accompany the abbreviated versions in the full guideline. These include details of the quality assessment and additional footnoted information which accompanies the main findings.

Chapter 4 Physical therapy (physiotherapy and occupational therapy

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Active use therapy	No active use therapy	Relative (95% CI)	Absolute (95% CI)	Quality
Active range of motion wrist extension at week 9 (Better indicated by higher values)											
1 study (Aarts 2011)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	28	22	-	MD 4.5 higher (4.29 lower to 13.29 higher)*	MODERATE
Active range of motion wrist extension at week 17 (Better indicated by higher values)											
1 study (Aarts 2011)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	28	22	-	MD 3.1 higher (10.68 lower to 16.88 higher)*	MODERATE
Passive range of motion wrist extension at week 9 (Better indicated by higher values)											
1 study (Aarts	randomised	no serious	no serious	no serious	serious[3]	none	28	22	-	MD 3.6 higher (0.46	MODERATE

2011)	trials	limitations	inconsistency	indirectness						lower to 7.66 higher)*	
Passive range of motion wrist extension at week 17 (Better indicated by higher values)											
1 study (Aarts 2011)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	28	22	-	MD 3.9 higher (0.57 lower to 8.37 higher)*	MODERATE
Active range of motion elbow extension at week 9 (Better indicated by higher values)											
1 study (Aarts 2011)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[4]	none	28	22	-	MD 2.9 higher (2.72 lower to 8.52 higher)*	MODERATE
Active range of motion elbow extension at week 17 (Better indicated by higher values)											
1 study (Aarts 2011)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	28	22	-	MD 5.2 higher (0.52 lower to 10.92 higher)*	MODERATE
Passive range of motion elbow extension at week 9 (Better indicated by higher values)											
1 study (Aarts 2011)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[5]	none	28	22	-	MD 1.4 higher (1.76 lower to 4.56 higher)*	MODERATE
Passive range of motion elbow extension at week 17 (Better indicated by higher values)											
1 study (Aarts 2011)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	28	22	-	MD 3.6 higher (0.76 to 6.44 higher)	HIGH

1 * Calculated by the NCC-WCH

2 1 Total population is under 400, 95% confidence interval crosses null effect and is wide. Effect size is reported as 0.25

3 2 Total population is under 400, 95% confidence interval crosses null effect and is wide

3 Total population is under 400, 95% confidence interval crosses null effect and is wide. Effect size is reported as 0.33
4 Total population is under 400, 95% confidence interval crosses null effect and is wide. Effect size is reported as 0.17
5 Total population is under 400, 95% confidence interval crosses null effect and is wide. Effect size is reported as 0.15

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Active use therapy	No active use therapy	Relative (95% CI)	Absolute (95% CI)	Quality
Assisting hand assessment at week 9 (range 0 to 100, change from baseline) (Better indicated by higher values)											
1 study (Aarts 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	28[2]	22[3]	-	MD 4.3 higher (0.28 to 8.32 higher)	MODERATE
Assisting hand assessment at week 17 (range 0 to 100, change from baseline) (Better indicated by higher values)											
1 study (Aarts 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	28[4]	22[5]	-	MD 4.70 higher (1.58 to 7.82 higher)	MODERATE
Goal assessment scale at week 9 (% children who showed an increase of 2 point or more compared to baseline)											
1 study (Aarts 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	23/28* (82%)	5/22* (23%)	RR 3.61 (1.64 to 7.96)*	59 more per 100 (from 15 more to 100 more)	HIGH
Goal assessment scale at week 17 (% children who showed an increase of 2 point or more compared to baseline)											
1 study (Aarts 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	24/28* (86%)	8/22* (36%)	RR 2.36 (1.33 to 4.18)*	49 more per 100 (from 12 more to 100 more)	HIGH

Goal assessment T-score at week 8 - 4wk Occupational therapy home programme (OTHP) group (Better indicated by higher values)											
1 study (Novak 2009)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	11	12	-	-[6]	HIGH
Goal assessment T-score at week 8 - 8wk OTHP group (Better indicated by higher values)											
1 study (Novak 2009)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	12	12	-	-[7]	HIGH
Goal assessment T-score at week 8 – 4wk vs. 8wk OTHP group (Better indicated by higher values)											
1 study (Novak 2009)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious [8]	none	11	12[9]	-	-[10]	MODERATE
Canadian Occupational Performance Measure - Performance at week 8 - 4wk OTHP group (Better indicated by higher values)											
1 study (Novak 2009)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	11	12	-	-[11]	HIGH
Canadian Occupational Performance Measure - Performance at week 8 - 8wk OTHP group (Better indicated by higher values)											
1 study (Novak 2009)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	12	12	-	-[12]	HIGH
Canadian Occupational Performance Measure - Performance at week 8 - 4wk vs. 8wk OTHP group (Better indicated by higher values)											
1 study (Novak 2009)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious [8]	none	11	12[9]	-	-[13]	MODERATE
Canadian Occupational Performance Measure - Performance at week 9 (range 0 to 10) (Better indicated by higher values)											
1 study (Aarts 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	28[14]	22[15]	-	-[16]	HIGH
Canadian Occupational Performance Measure - Performance at week 17 (range 0 to 10, change from baseline) (Better indicated by higher values)											

1 study (Aarts 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	28[17]	22[18]	-	MD 2.00 higher (1.20 to 2.80 higher)*	HIGH
Walking speed at 6 weeks (change from baseline, m/s) (10m walk test) (Better indicated by higher values)											
1 study (Katz-Leurer 2009)	randomised trials	serious[19]	no serious inconsistency	no serious indirectness	serious[8]	none	10[20]	10[21]	-	MD 0.03 higher (0.06 lower to 0.12 higher)	LOW

* Calculated by the NCC-WCH

1 Total population less than 400, 95% confidence interval does not cross null effect but is wide, effect size reported as 0.43 at week 9

2 Change from baseline at week 9 Mean (SD) = 6.8 (8.2)

3 Change from baseline at week 9 Mean (SD) = 2.5 (6.3)

4 Change from baseline at week 17 Mean (SD) = 6.4 (5.7)

5 Change from baseline at week 17 Mean (SD) = 1.7 (5.5)

6 Results for comparison of 4OHTP vs. no program reported as a mean difference of 22.4 (14.4 to 30.3) p=0.01

7 Results for comparison of 4OHTP vs. no program reported as a mean difference of 13.3 (8.6 to 18.0) p=0.01

8 Total population less than 400, 95% confidence interval crosses null effect and is wide

9 Comparison is 4 weeks vs. 8 weeks OHTP group, not to program group

10 Results for comparison of 4OHTP vs. no program reported as a mean difference of -6.2 (-17.9 to 5.6) p=0.29

11 Results for comparison of 4OHTP vs. no program reported as a mean difference of 2.4 (0.7 to 4.2) p=0.01

12 Results for comparison of 8OTHP vs. no program reported as a mean difference of 1.4 (0.6 to 2.2) p=0.01

13 Results for comparison of 4OHTP vs. 8OTHP reported as a mean difference of 0.7 (-1.2 to 2.6) p=NS

14 Change from baseline at week 9 Mean (SD) = 3.5 (1.3)

15 Change from baseline at week 9 Mean (SD) = 1.2 (1.1)

16 Mean difference (95% CI) reported as 2.1 (1.43 - 2.72) effect size reported as 1.31

17 Change from baseline at week 17 Mean (SD) = 3.6 (1.6)

18 Change from baseline at week 17 Mean (SD) = 1.6 (1.3)

19 Unclear if outcome assessors were blinded to treatment allocation

20 Change scores after 6 weeks Mean (SD) = 0.04 (0.1)

21 Change scores after 6 weeks Mean (SD) = 0.01 (0.1)

23

Quality assessment	**Summary of findings**

							No. of patients		Effect		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Active use therapy**	**No active use therapy**	**Relative (95% CI)**	**Absolute**	**Quality**
Canadian Occupational Performance Measure - Satisfaction at week 8 - 4wk Occupational therapy home programme (OTHP) group (range 0 to 10, change from baseline) (Better indicated by higher values)											
1 study (Novak 2009)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	11	12	-	-[1]	HIGH
Canadian Occupational Performance Measure - Satisfaction at week 8 - 8wk OTHP group (range 0 to 10, change from baseline) (Better indicated by higher values)											
1 study (Novak 2009)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	12	12	-	-[2]	HIGH
Canadian Occupational Performance Measure - Satisfaction at week 8 - 4wk OTHP vs. 8 wk OTHP (Better indicated by higher values)											
1 study (Novak 2009)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[3]	none	12	12[4]	-	-[5]	MODERATE
Canadian Occupational Performance Measure - Satisfaction at week 9 (range 0 to 10, change from baseline) (Better indicated by higher values)											
1 study (Aarts 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	28[6]	22[7]	-	-[8]	HIGH
Canadian Occupational Performance Measure - Satisfaction at week 17 (range 0 to 10, change from baseline) (Better indicated by higher values)											
1 study (Aarts 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	28[9]	22[10]	-	MD 2.00 higher (1.20 to 2.80 higher)*	HIGH

* Calculated by the NCC-WCH

1 Results for comparison of 4OHTP vs. no program reported as a mean difference of 2.5 (0.8 to 4.3) p=0.01

2 Results for comparison of 4OHTP vs. no program reported as a mean difference of 1.5 (0.3 to 2.6) p=0.01

3 Total population less than 400, 95% confidence interval crosses null effect and is wide
4 Comparison is 4 weeks vs. 8 weeks OHTP group, not to program group
5 Results for comparison of 8OTHP vs. no program reported as a mean difference of 0.8 (-1.1 to 2.8) p=NS
6 Change from baseline at week 9 Mean (SD) = 3.7 (1.6)
7 Change from baseline at week 9 Mean (SD) = 1.4 (1.1)
8 Mean difference (95% CI) reported as 2.2 (1.51 - 2.86) effect size reported as 1.32
9 Change from baseline at week 17 Mean (SD) = 3.6 (1.6)
10 Change from baseline at week 17 Mean (SD) = 1.6 (1.3)

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	4 or 8 wks Occupational therapy (OT) home programme	No OT home programme	Relative (95% CI)	Absolute	Quality
Adverse events											
1 study (Novak 2009)	Randomised trial	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	0/24 (0%)	0/12 (0%)	-	-[3]	LOW

1 No details reported of adverse events sought
2 Total number of events is under 300, 95% confidence interval crosses null effect
3 No adverse events reported in either group

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Strengthening	Usual care	Relative (95% CI)	Absolute	Quality

Gross motor function measure (GMFM) 88-goal dimension score at 6 weeks (change from baseline) (Better indicated by higher values)											
1 study (Liao 2007)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	103	104	-	MD 8.6 higher*[5]	LOW
GMFM D-standing at 6 weeks (change from baseline) (Better indicated by higher values)											
1 study (Lee 2008)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	9[6]	8[7]	-	MD 0.6 lower*[8]	MODERATE
1 study (Dodd 2003)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	11[9]	10[10]	-	MD 1 lower*	MODERATE
GMFM D-standing at 18 weeks (change from baseline) (Better indicated by higher values)											
1 study (Dodd 2003)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	11[11]	9[12]	-	MD 0.9 lower*[13]	MODERATE
GMFM E-walking, running and jumping at 6 weeks (change from baseline) (Better indicated by higher values)											
1 study (Lee 2008)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	9[14]	8[15]	-	MD 1 higher*	MODERATE
1 study (Dodd 2003)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	11[16]	10[17]	-	MD 3.2 higher*	MODERATE
GMFM E-walking, running and jumping at 18 weeks (change from baseline) (Better indicated by higher values)											
1 study (Dodd 2003)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	11[18]	9[19]	-	MD 5.9 higher*[20]	MODERATE
GMFM-66 total (change from baseline at 12 weeks) (Better indicated by higher values)											

1 study (Fowler 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	29[21]	29[22]	-	MD 0.7 higher* [23]	MODERATE
GMFM total at 6 weeks (change from baseline) (Better indicated by higher values)											
1 study (Lee 2008)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	9[24]	8[25]	-	MD 0 higher*	MODERATE
1 study (Dodd 2003)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	11[26]	10[27]	-	MD 1.2 higher*	MODERATE
GMFM total at 18 weeks (change from baseline) (Better indicated by higher values)											
1 study (Dodd 2003)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	11[28]	9[29]	-	MD 2 higher*	MODERATE
Walking speed (m/min) at 6 weeks (change from baseline) (Better indicated by higher values)											
1 study (Liao 2007)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	10[30]	10[31]	-	MD 9.2 higher*[32]	LOW
Walking speed (cm/sec) at 6 weeks (change from baseline) (Better indicated by higher values)											
1 study (Lee 2008)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	9[33]	8[34]	-	MD 25.5 higher[35]	MODERATE
Walking speed (m/min) at 6 weeks (10m walk test) (change from baseline) (Better indicated by higher values)											
1 study (Dodd 2003)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	11[36]	10[37]	-	MD 0.4 lower*	MODERATE
Walking speed (mm/s) at 8 weeks (change from baseline) (Better indicated by higher values)											
1 study	randomised	serious[1]	no serious	no serious	serious[2]	none	24[38]	13[39]	-	MD 0.3	LOW

(Unger 2006)	trials		inconsistency	indirectness						higher	
Walking speed (30-second walk test) Change from baseline at 12 weeks (Better indicated by higher values)											
1 study (Fowler 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	27[40]	28[41]	-	MD 2.2 higher*[42]	MODERATE
Walking speed (m/min) at 18 weeks (10m walk test) (change from baseline) (Better indicated by higher values)											
1 study (Dodd 2003)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	11[43]	9[44]	-	MD 0.7 lower*	MODERATE
Timed stair (s) at 6 weeks (change from baseline) (Better indicated by lower values)											
1 study (Dodd 2003)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	11[45]	9[46]	-	MD 5.6 lower*[47]	MODERATE
Timed stair (s) at 18 weeks (change from baseline) (Better indicated by lower values)											
1 study (Dodd 2003)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	11[48]	9[49]	-	MD 0.4 lower*	MODERATE

* Calculated by the NCC-WCH

1 Allocation concealment details unclear

2 Total population less than 400, 95% confidence interval not calculable

3 Pre-training score = 76.6 (SE 4.4), Adjusted post-training = 82.7 (SE 0.7)

4 Pre-training score = 83.1 (SE 3.2), Adjusted post-training = 80.6 (SE 0.7)

5 P (1 tailed): 0.02 reported

6 Pre-training: 73.5±25.7, at 6 weeks = 73.8±26.6

7 Pre-training: 74.5±23.7, at 6 weeks = 75.4±22.7

8 p=NS reported

9 Baseline score = 75.2 (14.4), at 6 weeks = 80.1 (13.7)

10 Baseline score = 74.6 (20.9), at 6 weeks = 80.5 (12.6)

11 Baseline score = 75.2 (14.4), at 18 weeks = 80.4 (13.2)

12 Baseline score = 74.6 (20.9), at 18 weeks = 80.7 (15.0)

13 NS (p value not reported)
14 Pre-training score: 61.6±34.1, at 6 weeks = 63.0±34.4
15 Pre-training score: 61.4±33.9, at 6 weeks = 61.8±34
16 Baseline score = 52.8 (31.3, at 6 weeks = 57.2 (29.7)
17 Baseline score = 68.3 (30.1), at 6 weeks = 69.5 (27.9)
18 Baseline score = 52.8 (31.3), at 18 weeks = 58.2 (31.3)
19 Baseline score = 68.3 (30.1), at 18 weeks = 67.8 (28.6)
20 NS (p value not reported)
21 Change from baseline (mean (95% CI)) Cycling group = 1.2 (0.5 to 1.8)
22 Change from baseline (mean (95% CI)) Control group = 0.5 (-0.2 to 1.3)
23 NS (p value not reported)
24 Pre-training score = 86.5±13.3, Follow up at 6 weeks = 87±13.5
25 Pre-training score = 85.2±13.4, Follow up at 6 weeks = 85.7±13.3
26 Baseline score = 64.2 (27.8), at 6 weeks = 69.0 (21.4)
27 Baseline score = 71.7 (24.9), at 6 weeks = 75.3 (21.3)
28 Baseline score = 64.2 (27.8), at 18 weeks = 69.6 (21.4)
29 Baseline score = 71.7 (24.9), at 18 weeks = 74.3 (21.4)
30 Pre-training speed m/min = 56.9 (SE 5.1) Adjusted post-training speed 61.3 (1.7)
31 Pre-training speed m/min = 63.8 (SE 3.0) Adjusted post-training speed 59.0 (1.7)
32 P (1 tailed): 0.18 (NS) reported
33 Pre-training speed cm/s = 54.7±30.7, at 6 weeks: 78.2±39.3
34 Post training speed cm/s = 74.6±38.7, at 6 weeks: 67.8±37.2
35 $p<0.05$ when compared to control group
36 Baseline speed (m/min) = 47.4 (23.3), at 6 weeks = 48.0 (21.2)
37 Baseline speed (m/min) = 49.5 (24.5), at 6 weeks = 50.5 (20.8)
38 Pre-training speed mm/s = 1075.6 (235.4) Post-training = 1119.3 (232.5)
39 Pre-training speed mm/s = 1128 (132.0) Pre-training = 1171.4 (141.9)
40 Change from baseline (mean (95% CI)) Cycling group: 1.2 (-3.9 to 6.2)
41 Change from baseline (mean (95% CI)) Control group: 3.4 (-1.7 to 8.4)
42 p = 0.52 reported
43 Walking speed (m/min) at baseline = 47.4 (23.3), at 18 weeks = 48.6 (23.3)
44 Walking speed (m/min) at baseline = 49.5 (24.5), at 18 weeks = 51.4 (16.5)
45 Timed stair, s, at baseline = 27.4 (34.7), at 6 weeks = 21.1 (25.6)
46 Timed stair, s, at baseline = 22.4 (20.5), at 6 weeks = 21.7 (21.5)
47 p=0.10 reported
48Timed stair (s) at baseline = 27.4 (34.7), at 18 weeks = 25.1 (33.6)
49 Timed stair (s) at baseline = 22.4 (20.5), at 18 weeks = 19.7 (15.2)

Quality assessment							Summary of findings				
							No. of patients		Effect		Quality
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Strengthening	Usual care	Relative (95% CI)	Absolute	
Self-perception of functional competence at 8 weeks (composite score/25) (change from baseline) (Better indicated by higher values)											
1 study (Unger 2006)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	24[3]	13[4]	-	MD 0.1 lower*[5]	LOW
Self-perception of body image at 8 weeks (composite score/25) (change from baseline) (Better indicated by higher values)											
1 study (Unger 2006)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	24[6]	13[7]	-	MD 2.9 higher*[8]	LOW
Self-perception (Global self-worth) at 18 weeks (score 0 to 4) (Better indicated by lower values)											
1 study (Dodd 2004)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	10[9]	6[10]	-	MD 0.02 higher*[11]	LOW

* Calculated by the NCC-WCH

1 Allocation concealment details unclear

2 Total population less than 400, 95% confidence interval not calculable

3 Pre-training score = 19.9 (3.4), Post-training score = 21.3 (3.3)

4 Pre-training score = 19.0 (3.2), Post-training score = 20.5 (3.3)

5 p = NS reported

6 Pre-training score = 23.9 (4.1), Post-training score = 25.9 (3.4)

7 Pre-training score = 23.2 (4.6), Post-training score = 22.3 (4.7)

8 p < 0.05 reported

9 Baseline score = 3.41 (0.38), Follow up at 18 weeks = 3.57 (0.45)

10 Baseline score = 3.27 (0.52), Follow up at 18 weeks = 3.41 (0.49)

11 p=NS reported

Quality assessment							Summary of findings				
							No. of patients		Effect		Quality
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Strengthening	Usual care	Relative (95% CI)	Absolute	
Adverse effects: pressure on shoulder, mild foot and ankle discomfort											
1 study (Dodd 2003)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	3/11 (27.3%)[3]	0/9 (0%)	-	-	LOW
Adverse effects: Mild pain, soreness or muscle cramping											
1 study (Fowler 2010)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	17/29 (58.6%)	0/29 (0%)	-	-	LOW
Adverse effects: Observed falls											
1 study (Fowler 2010)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	6/29 (20.6%)	0/29 (0%)	-	-	LOW
Adverse effects: Skin rash											
1 study (Fowler 2010)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	1/29 (3.4%)[4]	0/29 (0%)	-	-	LOW

* Calculated by the NCC-WCH

1 Assessment details unclear

2 Total population less than 400, 95% confidence interval not calculable

3 Three adverse events were reported in the strengthening group. One participant reported pressure on the shoulders from the backpack. As a result, weights were carried in a home-made vest to distribute the load more evenly. Two participants reported mild foot and ankle discomfort during the heel raise exercise. To alleviate this, the physiotherapy trainer modified the exercise so that ankle dorsiflexion did not exceed the plantergrade position. This modification enabled these participants to continue without incident.

4 One child with a skin rash related to the HR sensor

Quality assessment							Summary of findings				
							No. of patients		Effect		Quality
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Serial casting	Usual care	Relative (95% CI)	Absolute	
Walking speed (m/s, tridimensional gait analysis) (Change from baseline at 12 weeks) (Better indicated by higher values)											
1 study (McNee 2007)	randomised trials	serious[1,2]	no serious inconsistency	no serious indirectness	serious[3]	none	9	9	-	MD 0.030 lower (0.18 lower to 0.13 higher)	LOW
Passive range of motion-ankle dorsiflexion (knee flexed) (change from baseline at 12 weeks) (Better indicated by higher values)											
1 study (McNee 2007)	randomised trials	serious[1,2]	no serious inconsistency	no serious indirectness	no serious imprecision	none	9	9	-	MD 11.66 higher (4.17 to 19.15 higher)	MODERATE
Passive range of motion-ankle dorsiflexion (knee extended) (change from baseline at 12 weeks) (Better indicated by higher values)											
1 study (McNee 2007)	randomised trials	serious[1,2]	no serious inconsistency	no serious indirectness	serious[3]	none	9	9	-	MD 1.450 higher (2.84 lower to 5.75 higher)	LOW

[1] Small sample size and no calculation performed

[2] Unclear who measured the outcomes

[3] Difference between groups not statistically significant

Quality assessment	Summary of findings		
	No. of patients	Effect	Quality

No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Serial casting	Usual care	Relative (95% CI)	Absolute	
Walking speed (m/s, tridimensional gait analysis) (Change from baseline at 12 weeks) (Better indicated by higher values)											
1 study (McNee 2007)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	9[3]	9[4]	-	MD 0.03 lower (0.18 lower to 0.13 higher)[5]	LOW

1 1 Randomisation, allocation concealment and outcome assessor details not provided
2 2 Total population less than 400, 95% confidence interval crosses null effect and is wide
3 3 Change from baseline at 12 weeks mean/SD = -0.01 (0.1)
4 4 Change from baseline at 12 weeks mean/SD = 0.02 (0.2)
5 5 p=NS reported

6

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Early casting post botulinum neurotoxin (BoNT)	Delayed casting post BoNT	Relative (95% CI)	Absolute	Quality
Gastrosoleus spasticity (Modified Tardieu) (degrees) 3 months after casting (Better indicated by lower values)											
1 study (Newman 2007)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	6[3]	6[4]	-	MD 9.20 higher (1.37 to 17.03 higher)[5]	LOW
Passive range of motion 3 months after casting (Better indicated by higher values)											

1 study (Newman 2007)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[6]	none	6[7]	6[8]	-	MD 2.00 higher (6.76 lower to 10.76 higher)[9]	LOW
Gastrosoleus spasticity (Modified Tardieu) (degrees) 6 months after casting (Better indicated by higher values)											
1 study (Newman 2007)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	6[10]	6[11]	-	MD 15.00 higher (4.42 to 25.58 higher)[12]	LOW
Passive range of motion 6 months after casting (Better indicated by higher values)											
1 study (Newman 2007)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[6]	none	6[13]	6[14]	-	MD 0.40 lower (10.39 lower to 9.59 higher)[15]	LOW

1 Outcomes assessor not blinded to group allocation, potential bias introduced by children concurrently receiving non described routine physiotherapy

2 Total population less than 400, 95% confidence interval does not cross null effect but is wide

3 Change from baseline at 3 months = -7.0 (6.7)

4 Change from baseline at 3 months = -16.2 (5.4)

5 p = 0.007 reported

6 Total population less than 400, 95% confidence interval crosses null effect and is wide

7 Change from baseline at 3 months = 9.8(8.1) p = 0.012 from baseline

8 Change from baseline at 3 months = 7.8 (5.2) p = 0.002 from baseline

9 p = 0.556 reported

10 Change from baseline at 6 months = 2.9 (9.9)

11 Change from baseline at 6 months = -12.1 (6.1)

12 p = 0.002 reported

13 Change from baseline at 6 months = 6.0 (9.2) p = 0.108 from baseline

14 Change from baseline at 6 months = 6.4 (6.0) p = 0.013 from baseline

15 p = 0.907 reported

Quality assessment							Summary of findings				
							No of patients		Effect		
No of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Early casting post botulinum neurotoxin (BoNT)	Delayed casting post BoNT	Relative (95% CI)	Absolute	Quality
Adverse effects: Pain											
1 study (Newman 2007)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	3/6 (50%)[3]	0/6 (0%)	-[4]	-	LOW

1 Outcomes assessor not blinded to group allocation, potential bias introduced by children concurrently receiving non described routine physiotherapy

2 Total population less than 400, 95% confidence interval not calculable

3 Three children complained of pain that required recasting

4 Chi^2, p=0.08

Chapter 5 Orthoses

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Solid ankle-foot orthosis (SAFO) Mean	No SAFO Mean	Relative (95% CI)	Absolute (95% CI)	Quality
Ankle dorsiflexion Initial contact (diplegia) (Better indicated by higher values) Rethlefsen 1999											
1 study (Rethlefsen	randomised	serious	no serious	no serious	serious [2]	none	42	42	-	MD = 3.6 higher (1.42	LOW

1999)	study	limitations[1]	inconsistency	indirectness			limbs[3]	limbs[4]		higher to 5.78 higher)*	
Ankle dorsiflexion Initial contact (diplegia) (Better indicated by higher values)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	16[5]	16[6]	-	MD = 12.20 higher (5.46 higher to 18.94 higher)*	MODERATE
Ankle dorsi/plantarflexion at initial contact - post hoc analysis (Better indicated by higher values)											
1 study (Radtka 2005)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision[7]	selective outcome reporting[8]	12[9]	-12[10]	-	MD = 15.23 higher (11.02 higher to 19.44)*	LOW
Ankle dorsiflexion, terminal stance (diplegia) (Better indicated by higher values)											
1 study (Rethlefsen 1999)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [2,11]	none	42 limbs[12]	42 limbs[13]	-	MD = 0.00 higher (2.71 lower to 2.71 higher)*	LOW
Ankle dorsiflexion, terminal stance - post hoc analysis (Better indicated by higher values)											
1 study (Radtka 2005)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision[7]	selective outcome reporting[8]	12[1,14]	12[15]	-	MD = 12.80 higher (8.35 higher to 17.25 higher)*	LOW
Peak dorsiflexion stance (diplegia) (Better indicated by higher values)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [11]	none	16[16]	16[17]	-	MD = 6.80 higher (0.03 lower to 13.63 higher)*	LOW

Peak dorsiflexion time, % (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [11]	none	16[18]	16[19]	-	MD = 9.00 higher (0.36 lower to 18.36 higher)*	LOW
Peak dorsiflexion swing (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	16[20]	16[21]	-	MD = 10.80 higher (3.46 higher to 18.14 higher)*	MODERATE
Range (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	16[22]	16[23]	-	MD = 19.10 lower (26.59 lower to 11.61 lower)*	MODERATE
Ankle range Dorsiflexion knee extension, degree (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [11]	none	16[24]	16[25]	-	MD = 0.00 higher (3.46 lower to 3.46 higher)*	LOW
Dorsiflexion knee flexion, (degrees) (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [11]	none	16[26]	16[27]	-	MD = 2.00 higher (7.30 lower to 3.30 higher)*	LOW
Knee, initial contact (degrees) (Better indicated by higher values) (diplegia)											
1 study (Rethlefsen	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [11]		42 limbs[28]	42 limbs[29]	-	MD = 1.00 lower (6.15	LOW

1999)										lower to 4.15 higher)*	
Knee, terminal stance (degrees) (Better indicated by higher values) (diplegia)											
1 study (Rethlefsen 1999)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [11]		42 limbs[30]	42 limbs[31]		MD = 1.00 lower (5.28 lower to 3.28 higher)*	LOW
Velocity, m/s (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [11]	none	16[32]	16[33]	-	MD = 0.04 lower (0.18 lower to 0.10 higher)*	LOW
Velocity (cm/sec) (Better indicated by higher values)											
1 study (Radtka 2005)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [11]		40 limbs[37]	40 limbs[38]		MD = 0.40 higher (-4.03 lower to 4.83 higher)*	LOW

* Calculated by the NCC-WCH

1 All outcomes have serious limitations as although randomisation was performed, no details are given, blinding of assessors and caregivers was not carried out and the means presented are not "mean changes from baseline" but are "mean values from observations made in a given treatment period".

2 Total population less than 400, 95% confidence interval for mean difference does not cross null hypothesis, however analysis is by limb.

3 Mean final score ± SD reported as 3 ± 4

4 Mean final score ± SD reported as -0.6 ± 6

5 Mean final score ± SD reported as 5.0 ± 4.5

6 Mean final score ± SD reported as -7.2 ± 13

7 P < 0.05 (reported)

8 Post hoc analysis of data

9 Mean final score ± SD reported as 7.09 ± 5.06

10 Mean final score ± SD reported as -8.14 ± 5.46

11 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and confidence intervals are wide

12 Mean final score ± SD reported as 8 ± 4

13 Mean final score ± SD reported as 8 ± 8

14 Mean final score ± SD reported as 11.50 ± 4.28

15 Mean final score ± SD reported as -1.30 ± 6.59
16 Mean final score ± SD reported as 12.5 ± 5.3
17 Mean final score ± SD reported as 5.7 ± 12.9
18 Mean final score ± SD reported as 36 ± 13
19 Mean final score ± SD reported as 27 ± 14
20 Mean final score ± SD reported as 7.2 ± 5.6
21 Mean final score ± SD reported as –3.6 ± 13.9
22 Mean final score ± SD reported as 10.6 ± 3.8
23 Mean final score ± SD reported as 29.7 ± 14.8
24 Mean final score ± SD reported as 8 ± 5
25 Mean final score ± SD reported as 8 ± 5
26 Mean final score ± SD reported as 15 ± 6
27 Mean final score ± SD reported as 17 ± 9
28 Mean final score ± SD reported as 26 ± 11
29 Mean final score ± SD reported as 27 ± 13
30 Mean final score ± SD reported as 11 ± 10
31 Mean final score ± SD reported as 12 ± 10
32 Mean final score ± SD reported as 1.04 ± 0.18
33 Mean final score ± SD reported as 1.08 ± 0.22
34 P = no significant difference (reported)
35 Mean final score ± SD reported as 94.70 ± 22.07
36 Mean final score ± SD reported as 90.62 ± 23.02
37 Mean final score ± SD reported as 63.6 ± 12
38 Mean final score ± SD reported as 63.2 ± 8.4

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Solid ankle-foot orthosis (SAFO) Mean	No SAFO Mean	Relative (95% CI)	Absolute (95% CI)	Quality

Ankle dorsiflexion Initial contact (hemiplegia) (Better indicated by higher values)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision		29[2]	29[3]		MD = 13.00 higher (10.42 higher to 15.58 higher)*	MODERATE
Peak dorsiflexion stance (hemiplegia) (Better indicated by higher values)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision		29[4]	29[5]		MD = 5.00 higher (2.47 higher to 7.53 higher)*	MODERATE
Ankle dorsiflexion Dynamic Range (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision		29[6]	29[7]		MD = 15.00 lower (17.73 lower to 12.27 lower)*	MODERATE
Ankle range Dorsiflexion knee extension, degree (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[8]	none	29[9]	29[10]	-	MD = 1.00 higher (1.58 lower to 3.58 higher)*	LOW
Dorsiflexion knee flexion, degrees (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[8]	none	29[11]	29[12]		MD = 1.00 higher (1.58 lower to 3.58 higher)*	LOW
Velocity, m/s (Better indicated by higher values) (hemiplegia)											
1 study (Buckon	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[8]	none	29[13]	29[14]		MD = 0.04 higher (0.06	LOW

2001)										lower to 0.14 higher)*	
Velocity ascent (time for distance stair 1 to stair 3)											
1 study (Sienko-Thomas 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [8,15]	none	19[16]	19[17]		MD = 0.01 lower (0.05 lower to 0.03 higher)*	LOW
Velocity descent (time for distance stair 3 to stair 1)											
1 study (Sienko-Thomas 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [8,15]	none	19[18]	19[19]		MD = 0.04 higher (0.02 lower to 0.09 higher)*	LOW

* Calculated by the NCC-WCH

1 All outcomes have serious limitations as although randomisation was performed, no details are given, blinding of assessors and caregivers was not carried out and the means presented are not "mean changes from baseline" but are "mean values from observations made in a given treatment period".

2 Mean final score ± SD reported as 2 ± 4

3 Mean final score ± SD reported as –11 ± 6

4 Mean final score ± SD reported as 11 ± 5

5 Mean final score ± SD reported as 6 ± 5

6 Mean final score ± SD reported as 11 ± 3

7 Mean final score ± SD reported as 26 ± 7

8 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and confidence intervals are wide

9 Mean final score ± SD reported as 6 ± 4

10 Mean final score ± SD reported as 5 ± 6

11 Mean final score ± SD reported as 13 ± 4

12 Mean final score ± SD reported as 12 ± 6

13 Mean final score ± SD reported as 1.11 ± 0.17

14 Mean final score ± SD reported as 1.07 ± 0.22

15 P = no significant difference (reported)

16 Mean final score ± SD reported as 0.270 ± 0.07

17 Mean final score ± SD reported as 0.280 ± 0.06

18 Mean final score ± SD reported as 0.296 ± 0.10

19 Mean final score ± SD reported as 0.259 ± 0.06

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Solid ankle-foot orthosis (SAFO) Mean	No SAFO Mean	Relative (95% CI)	Absolute (95% CI)	Quality
Gross motor function measure (GMFM) Standing (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised trials	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[3]	16[4]	-	MD = 0.40 higher (1.51 lower to 2.31 higher)*	LOW
GMFM Walking/Running/Jumping (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised trials	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[5]	16[6]	-	MD = 3.50 higher (4.31 lower to 11.31 higher)*	LOW
Pediatric evaluation of disability inventory (PEDI) Mobility Functional skills (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised trials	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[7]	16[8]	-	MD = 1.40 higher (0.65 lower to 3.45 higher)*	LOW
PEDI Mobility Caregiver assistance (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised trials	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[9]	16[10]	-	MD = 0.30 higher (0.64 lower to 1.24 higher)*	LOW

* Calculated by the NCC-WCH

1 All outcomes have serious limitations as although randomisation was performed, no details are given, blinding of assessors and caregivers was not carried out and the means presented are not "mean changes from baseline" but are "mean values from observations made in a given treatment period".

2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and confidence intervals are wide

3 Mean final score ± SD reported as 35.8 ± 2.8

4 Mean final score ± SD reported as 35.4 ± 2.7

5 Mean final score ± SD reported as 60.6 ± 10.5

6 Mean final score ± SD reported as 57.1 ± 12

7 Mean final score ± SD reported as 52.6 ± 3.2

8 Mean final score ± SD reported as 51.2 ± 2.7

9 Mean final score ± SD reported as 34.4 ± 1.3

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Solid ankle-foot orthosis (SAFO) Mean	No SAFO Mean	Relative (95% CI)	Absolute (95% CI)	Quality
Gross motor function measure (GMFM) Standing (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised trials	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[3]	29[4]	-	MD = 0.40 higher (0.40 lower to 1.20 higher)*	LOW
GMFM Walking/Running/Jumping (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised trials	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[6]	29[7]	-	MD = 0.50 higher (1.79 lower to 2.79 higher)*	LOW
Pediatric evaluation of disability inventory (PEDI) Mobility Functional skills (Better indicated by higher values) (hemiplegia)											
1 study	randomised	serious	no serious	no serious	serious[5]	none	29[8]	29[9]	-	MD = 1.40	LOW

(Buckon 2001)	trials	limitations[1]	inconsistency	indirectness						higher (0.39 higher to 2.41 higher)*	
Ascent PEDI Item 54 (proportion of children who keep up with peers) (Better indicated by higher values) (hemiplegia)											
1 study (Sienko-Thomas 2002)	randomised trials	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2,10]	none	9/19	6/19	1.50 (0.66 to 3.39)	RD = 0.16 (0.15 lower to 0.46 higher)*	LOW
Descent PEDI Item 59 (proportion of children who keep up with peers) (Better indicated by higher values) (hemiplegia)											
1 study (Sienko-Thomas 2002)	randomised trials	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2,10]	none	7/19	5/19	1.40 (0.54 to 3.64)	RD = 0.11 (0.19 lower to 0.40 higher)*	LOW

* Calculated by the NCC-WCH

1 All outcomes have serious limitations as although randomisation was performed, no details are given, blinding of assessors and caregivers was not carried out and the means presented are not "mean changes from baseline" but are "mean values from observations made in a given treatment period".

2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and confidence intervals are wide

3 Mean final score ± SD reported as 38.0 ± 1

4 Mean final score ± SD reported as 37.6 ± 2

5 Total population less than 400, 95% confidence interval for mean difference does not cross null hypothesis but is wide

6 Mean final score ± SD reported as 67.6 ± 4

7 Mean final score ± SD reported as 67.1 ± 5

8 Mean final score ± SD reported as 56.8 ± 2

9 Mean final score ± SD reported as 55.4 ± 2

10 P = No significant difference (reported)

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Hinged ankle-foot orthosis**	**Solid ankle-foot orthosis**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**

							(HAFO) Mean	(SAFO) Mean			
Ankle dorsiflexion Initial contact (diplegia) (Better indicated by higher values)											
1 study (Rethlefsen 1999)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [2]	none	42 limbs[3]	42 limbs[4]	-	MD = 1.00 higher (0.94 lower to 2.94 higher)*	LOW
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [2]	none	16[5]	16[6]	-	MD = 0.20 lower (3.03 lower to 2.63 higher)*	LOW
Ankle dorsi/plantarflexion at initial contact - post hoc analysis (Better indicated by higher values)											
1 study (Radtka 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [2]	selective outcome reporting[7]	12[8]	12[9]	-	MD = 1.72 lower (6.61 lower to 3.17 higher)*	LOW
Ankle dorsiflexion, terminal stance (diplegia) (Better indicated by higher values)											
1 study (Rethlefsen 1999)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[10]	none	42 limbs	42 limbs	-	MD = 5.00 higher (2.82 higher to 7.18 higher)*	LOW
1 study (Radtka 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[13,14]	selective outcome reporting[7]	12[15]	12[16]	-	MD = 4.63 higher (0.38 higher to 8.88 higher)*	LOW
Peak dorsiflexion stance(diplegia) (Better indicated by higher values)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	16[17]	16[18]	-	MD = 6.10 higher (1.27 higher to 10.93 higher)*	MODERATE

Peak dorsiflexion time, % (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	16[19]	16[20]	-	MD = 10.00 higher (3.18 higher to 16.82 higher)*	MODERATE
Peak dorsiflexion swing (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious [2]	none	16[21]	16[22]	-	MD = 1.10 higher (2.75 lower to 4.95 higher)*	LOW
Range (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	16[23]	16[24]	-	MD = 5.90 higher (2.54 higher to 9.26 higher)*	MODERATE
Ankle range Dorsiflexion knee extension, degree (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[25]	16[26]	-	MD = 2.00 higher (2.22 lower to 6.22 higher)*	LOW
Dorsiflexion knee flexion, degrees (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[27]	16[28]	-	MD = 4.00 higher (0.90 lower to 8.90 higher)*	LOW
Knee, initial contact (degrees) (Better indicated by higher values) (diplegia)											
1 study (Rethlefsen 1999)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]		42 limbs[29]	42 limbs[30]		MD = 2.00 higher (2.92 lower to 6.92 higher)*	LOW

Knee, terminal stance (degrees) (Better indicated by higher values) (diplegia)											
1 study (Rethlefsen 1999)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]		42 limbs[31]	42 limbs[32]		MD = 2.00 higher (2.28 lower to 6.28 higher)*	LOW
Velocity, m/s (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[33]	16[34]	-	MD = 0.06 lower (0.20 lower to 0.08 higher)*	LOW
Velocity (cm/sec) (Better indicated by higher values)											
1 study (Radtka 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	12[35]	12[36]		MD = 4.93 higher (12.12 lower to 21.98 higher)*	LOW
Velocity, m/minute (Better indicated by higher values) (diplegia)											
1 study (Rethlefsen 1999)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	None	40 limbs[37]	40 limbs[38]		MD = 0.90 higher (3.75 lower to 5.55 higher)*	LOW

* Calculated by the NCC-WCH

1 All outcomes have serious limitations as although randomisation was performed, no details are given, blinding of assessors and caregivers was not carried out and the means presented are not "mean changes from baseline" but are "mean values from observations made in a given treatment period".

2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and confidence intervals are wide

3 Mean final score ± SD reported as 4 ± 5

4 Mean final score ± SD reported as 3 ± 4

5 Mean final score ± SD reported as 4.8 ± 4.6

6 Mean final score ± SD reported as 5.0 ± 4.5

7 Post hoc analysis of data

8 Mean final score ± SD reported as 5.37 ± 7.00

9 Mean final score ± SD reported as 7.09 ± 5.06

10 Total population less than 400, 95% confidence interval for mean difference does not cross null hypothesis, however analysis is by limb.

11 Mean final score ± SD reported as 13 ± 6
12 Mean final score ± SD reported as 8 ± 4
13 Total population less than 400, 95% confidence interval for mean difference does not cross null hypothesis but is wide
14 P < 0.05 (reported)
15 Mean final score ± SD reported as 16.13 ± 6.17
16 Mean final score ± SD reported as 11.50 ± 4.28
17 Mean final score ± SD reported as 18.6 ± 8.3
18 Mean final score ± SD reported as 12.5 ± 5.3
19 Mean final score ± SD reported as 46 ± 5
20 Mean final score ± SD reported as 36 ±13
21 Mean final score ± SD reported as 8.3 ± 5.5
22 Mean final score ± SD reported as 7.2 ± 5.6
23 Mean final score ± SD reported as 16.5 ± 5.7
24 Mean final score ± SD reported as 10.6 ± 3.8
25 Mean final score ± SD reported as 10 ± 7
26 Mean final score ± SD reported as 8 ± 5
27 Mean final score ± SD reported as 19 ± 8
28 Mean final score ± SD reported as 15 ± 6
29 Mean final score ± SD reported as 28 ± 12
30 Mean final score ± SD reported as 26 ± 11
31 Mean final score ± SD reported as 13 ± 10
32 Mean final score ± SD reported as 11 ± 10
33 Mean final score ± SD reported as 0.98 ± 0.21
34 Mean final score ± SD reported as 1.04 ± 0.18
35 Mean final score ± SD reported as 99.63 ± 20.53
36 Mean final score ± SD reported as 94.70 ± 22.07
37 Mean final score ± SD reported as 64.5 ± 9
38 Mean final score ± SD reported as 63.6 ± 12

Quality assessment							Summary of findings				
							No. of patients		Effect		Quality
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Hinged ankle-foot	Solid ankle-foot	Relative (95% CI)	Absolute (95% CI)	

							orthosis (HAFO) Mean	**orthosis (SAFO) Mean**			
Ankle dorsiflexion Initial contact (hemiplegia) (Better indicated by higher values)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[3]	29[4]	-	MD = 1.00 higher (1.02 lower to 3.02 higher)*	LOW
Peak dorsiflexion stance (hemiplegia) (Better indicated by higher values)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	29[5]	29[6]	-	MD = 5.00 higher (2.21 higher to 7.79 higher)*	MODERATE
Ankle dorsiflexion Dynamic Range (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations1	no serious inconsistency	no serious indirectness	no serious imprecision	none	29[7]	29[8]	-	MD = 5.00 higher (3.21 higher to 6.79 higher)*	MODERATE
Ankle range Dorsiflexion knee extension, degree (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[9]	29[10]	-	MD = 1.00 higher (1.29 lower to 3.29 higher)*	LOW
Dorsiflexion knee flexion, degrees (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[11]	29[12]	-	MD = 1.00 higher (1.58 lower to 3.58	LOW

										higher)*	
Velocity, m/s (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[13]	29[14]	-	MD = 0.03 higher (0.05 lower to 0.11 higher)*	LOW
Velocity ascent (time for distance stair 1 to stair 3)											
1 study (Sienko-Thomas 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2,15]	none	19[16]	19[17]	-	MD = 0.01 higher (0.03 lower to 0.06 higher)*	LOW
Velocity descent (time for distance stair 3 to stair 1)											
1 study (Sienko-Thomas 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2,15]	none	19[18]	19[19]	P = No significant difference (reported)	MD = 0.02 lower (0.07 lower to 0.04 higher)*	LOW

1 * Calculated by the NCC-WCH

2 1 All outcomes have serious limitations as although randomisation was performed, no details are given, blinding of assessors and caregivers was not carried out and the means presented are not
3 "mean changes from baseline" but are "mean values from observations made in a given treatment period".

4 2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and confidence intervals are wide

5 3 Mean final score ± SD reported as 3 ± 4

6 4 Mean final score ± SD reported as 2 ± 4

7 5 Mean final score ± SD reported as 16 ± 6

8 6 Mean final score ± SD reported as 11 ± 5

9 7 Mean final score ± SD reported as 16 ± 4

10 8 Mean final score ± SD reported as 11 ± 3

11 9 Mean final score ± SD reported as 7 ± 5

12 10 Mean final score ± SD reported as 6 ± 4

13 11 Mean final score ± SD reported as 14 ± 6

14 12 Mean final score ± SD reported as 13 ± 4

13 Mean final score ± SD reported as 1.14 ± 0.16
14 Mean final score ± SD reported as 1.11 ± 0.17
15 P = No significant difference (reported)
16 Mean final score ± SD reported as 0.281 ± 0.07
17 Mean final score ± SD reported as 0.270 ± 0.07
18 Mean final score ± SD reported as 0.280 ± 0.08
19 Mean final score ± SD reported as 0.296 ± 0.10

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Hinged ankle-foot orthosis (HAFO) Mean	Solid ankle-foot orthosis (SAFO) Mean	Relative (95% CI)	Absolute (95% CI)	Quality
Gross motor function measure (GMFM)Standing (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[3]	16[4]	-	MD = 0.30 lower (2.31 lower to 1.71 higher)*	LOW
GMFM Walking/Running/Jumping (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[5]	16[6]	-	MD = 0.40 higher (7.02 lower to 7.82 higher)*	LOW
Pediatric evaluation of disability inventory (PEDI) Mobility Functional skills (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[7]	16[8]	-	MD = 0.70 lower (2.78 lower to 1.38 higher)*	LOW

PEDI Mobility Caregiver assistance (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[9]	16[10]	-	MD = 0.10 higher (0.73 lower to 0.93 higher)*	LOW
Ascent PEDI Item 54 (proportion of children who keep up with peers) (Better indicated by higher values) (hemiplegia)											
1 study (Sienko-Thomas 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2,11]	none	12/19	9/19	1.33 (0.74 to 2.39)	RD = 0.16 higher (0.15 fewer to 0.47 higher)*	LOW
Descent PEDI Item 59 (proportion of children who keep up with peers) (Better indicated by higher values) (hemiplegia)											
1 study (Sienko-Thomas 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2,11]	none	10/19	7/19	1.43 (0.69 to 2.96)	RD = 0.16 higher (0.15 fewer to 0.47 higher)*	LOW

* Calculated by the NCC-WCH

1 All outcomes have serious limitations as although randomisation was performed, no details are given, blinding of assessors and caregivers was not carried out and the means presented are not "mean changes from baseline" but are "mean values from observations made in a given treatment period".

2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and confidence intervals are wide

3 Mean final score ± SD reported as 35.5 ± 3.0

4 Mean final score ± SD reported as 35.8 ± 2.8

5 Mean final score ± SD reported as 61.0 ± 10.9

6 Mean final score ± SD reported as 60.6 ± 10.5

7 Mean final score ± SD reported as 51.9 ± 2.8

8 Mean final score ± SD reported as 52.6 ± 3.2

9 Mean final score ± SD reported as 34.5 ± 1.1

10 Mean final score ± SD reported as 34.4 ± 1.3

11 P = No significant difference (reported)

Quality assessment	**Summary of findings**		
	No. of patients	**Effect**	**Quality**

No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Hinged ankle-foot orthosis (HAFO) Mean	Solid ankle-foot orthosis (SAFO) Mean	Relative (95% CI)	Absolute (95% CI)	
Gross motor function measure (GMFM) Standing (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[3]	29[4]	-	MD = 0.10 lower (0.61 lower to 0.41 higher)*	LOW
GMFM Walking/Running/Jumping (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[5]	29[6]	-	MD = 1.00 higher (0.79 lower to 2.79 higher)*	LOW
Pediatric evaluation of disability inventory (PEDI) Mobility Functional skills (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[7]	29[8]	-	MD = 0.10 lower (1.11 lower to 0.91 higher)*	LOW
Ascent PEDI Item 54 (proportion of children who keep up with peers) (Better indicated by higher values) (hemiplegia)											
1 study (Sienko-Thomas 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2,9]	none	12/19	9/19	1.33 (0.74 to 2.39)	RD = 0.16 higher (0.15 lower to 0.47 higher)*	LOW
Descent PEDI Item 59 (proportion of children who keep up with peers) (Better indicated by higher values) (hemiplegia)											
1 study (Sienko-Thomas 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2,9]	none	10/19	7/19	1.43 (0.69 to 2.96)	RD = 0.16 higher (0.15 lower to 0.47 higher)*	LOW

* Calculated by the NCC-WCH

1 All outcomes have serious limitations as although randomisation was performed, no details are given, blinding of assessors and caregivers was not carried out and the means presented are not "mean changes from baseline" but are "mean values from observations made in a given treatment period".

2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and confidence intervals are wide

3 Mean final score ± SD reported as 37.9 ± 1.0

4 Mean final score ± SD reported as 38.0 ± 1.0

5 Mean final score ± SD reported as 68.1 ± 3

6 Mean final score ± SD reported as 67.6 ± 4

7 Mean final score ± SD reported as 56.7 ± 2

8 Mean final score ± SD reported as 56.8 ± 2

9 P = No significant difference (reported)

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Posterior leaf spring ankle-foot orthosis (PLSAFO) Mean	Solid ankle-foot orthosis (SAFO) Mean	Relative (95% CI)	Absolute (95% CI)	Quality
Ankle dorsiflexion Initial contact (diplegia) (Better indicated by higher values)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[3]	16[4]	-	MD = 0.20 lower (3.35 lower to 2.95 higher)*	LOW
Peak dorsiflexion stance(diplegia) (Better indicated by higher values)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[5]	16[6]	-	MD = 2.30 higher (2.12 lower to	LOW

										6.72 higher)*	
Peak dorsiflexion time, % (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[7]	16[8]	-	MD = 2.00 higher (7.01 lower to 11.01 higher)*	LOW
Peak dorsiflexion swing (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[9]	16[10]	-	MD = 0.30 lower (3.85 lower to 3.25 higher)*	LOW
Range (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	16[11]	16[12]	-	MD = 4.00 higher (1.11 higher to 6.89 higher)*	MODERATE
Ankle range Dorsiflexion knee extension, degree (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[13]	16[14]	-	MD = 0.00 higher (3.83 lower to 3.83 higher)*	LOW
Dorsiflexion knee flexion, degrees (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[15]	16[16]	-	MD = 3.00 higher (2.30 lower to 8.30	LOW

										higher)*	
Velocity, m/s (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[17]	16[18]	-	MD = 0.07 higher (0.06 lower to 0.20 higher)*	LOW

1 * Calculated by the NCC-WCH
2 1 All outcomes have serious limitations as although randomisation was performed, no details are given, blinding of assessors and caregivers was not carried out and the means presented are not
3 "mean changes from baseline" but are "mean values from observations made in a given treatment period".
4 2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and confidence intervals are wide
5 3 Mean final score ± SD reported as 4.8 ± 4.6
6 4 Mean final score ± SD reported as 5.0 ± 4.5
7 5 Mean final score ± SD reported as 14.8 ± 7.3
8 6 Mean final score ± SD reported as 12.5 ± 5.3
9 7 Mean final score ± SD reported as 38 ± 13
10 8 Mean final score ± SD reported as 36 ± 13
11 9 Mean final score ± SD reported as 6.9 ± 4.6
12 10 Mean final score ± SD reported as 7.2 ± 5.6
13 11 Mean final score ± SD reported as 14.6 ± 4.5
14 12 Mean final score ± SD reported as 10.6 ± 3.8
15 13 Mean final score ± SD reported as 8 ± 6
16 14 Mean final score ± SD reported as 8 ± 5
17 15 Mean final score ± SD reported as 18 ± 9
18 16 Mean final score ± SD reported as 15 ± 6
19 17 Mean final score ± SD reported as 1.11 ± 0.19
20 18 Mean final score ± SD reported as 1.04 ± 0.18

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Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Posterior leaf spring**	**Solid ankle-foot**	**Relative (95%**	**Absolute (95% CI)**	**Quality**

							ankle-foot orthosis (PLSAFO) Mean	**orthosis (SAFO) Mean**	**CI)**		
Ankle dorsiflexion Initial contact (hemiplegia) (Better indicated by higher values)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[3]	29[4]		MD = 2.20 lower (4.49 lower to 0.09 higher)*	LOW
Peak dorsiflexion stance (hemiplegia) (Better indicated by higher values)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	29[5]	29[6]		MD = 5.00 higher (2.21 higher to 7.79 higher)*	MODERATE
Ankle dorsiflexion Dynamic Range (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	29[7]	29[8]		MD = 4.00 higher (2.21 higher to 5.79 higher)*	MODERATE
Ankle range Dorsiflexion knee extension, degree (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[9]	29[10]	-	MD = 1.00 higher (1.02 lower to 3.02 higher)*	LOW
Dorsiflexion knee flexion, degrees (Better indicated by higher values) (hemiplegia)											
1 study (Buckon	randomised	serious	no serious	no serious	serious[2]	none	29[11]	29[12]		MD = 1.00 higher (1.58	LOW

2001)	study	limitations[1]	inconsistency	indirectness						lower to 3.58 higher)*	
Velocity, m/s (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[13]	29[14]		MD = 0.07 higher (0.02 lower to 0.16 higher)*	LOW
Velocity ascent (time for distance stair 1 to stair 3)											
1 study (Sienko-Thomas 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2,15]	none	19[16]	19[17]		MD = 0.03 higher (0.01 lower to 0.08 higher)*	LOW
Velocity descent (time for distance stair 3 to stair 1)											
1 study (Sienko-Thomas 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2,15]	none	19[18]	19[19]		MD = 0.03 higher (0.04 lower to 0.09 higher)*	LOW

* Calculated by the NCC-WCH

1 All outcomes have serious limitations as although randomisation was performed, no details are given, blinding of assessors and caregivers was not carried out and the means presented are not "mean changes from baseline" but are "mean values from observations made in a given treatment period".

2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and confidence intervals are wide

3 Mean final score ± SD reported as -0.2 ± 5

4 Mean final score ± SD reported as 2 ± 4

5 Mean final score ± SD reported as 16 ± 6

6 Mean final score ± SD reported as 11 ± 5

7 Mean final score ± SD reported as 15 ± 4

8 Mean final score ± SD reported as 11 ± 3

9 Mean final score ± SD reported as 7 ± 4

10 Mean final score ± SD reported as 6 ± 4

11 Mean final score ± SD reported as 14 ± 6
12 Mean final score ± SD reported as 13 ± 4
13 Mean final score ± SD reported as 1.18 ± 0.17
14 Mean final score ± SD reported as 1.11 ± 0.17
15 P = No significant difference (reported)
16 Mean final score ± SD reported as 0.304 ± 0.07
17 Mean final score ± SD reported as 0.270 ± 0.07
18 Mean final score ± SD reported as 0.323 ± 0.11
19 Mean final score ± SD reported as 0.296 ± 0.10

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Posterior leaf spring ankle-foot orthosis (PLSAFO) Mean	Solid ankle-foot orthosis (SAFO) Mean	Relative (95% CI)	Absolute (95% CI)	Quality
Gross motor function measure (GMFM) Standing (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[3]	16[4]	-	MD = 0.20 lower (2.25 lower to 1.85 higher)*	LOW
GMFM Walking/Running/Jumping (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[5]	16[6]	-	MD = 0.20 higher (7.01 lower to 7.41 higher)*	LOW
Pediatric evaluation of disability inventory (PEDI) Mobility Functional skills (Better indicated by higher values) (diplegia)											

1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[7]	16[8]	-	MD = 0.30 higher (1.72 lower to 2.32 higher)*	LOW
PEDI Mobility Caregiver assistance (Better indicated by higher values) (diplegia)											
1 study (Buckon 2004a)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16[9]	16[10]	-	MD = 0.10 lower (1.19 lower to 0.99 higher)*	LOW

* Calculated by the NCC-WCH

1 All outcomes have serious limitations as although randomisation was performed, no details are given, blinding of assessors and caregivers was not carried out and the means presented are not "mean changes from baseline" but are "mean values from observations made in a given treatment period".

2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and confidence intervals are wide

3 Mean final score ± SD reported as 35.6 ± 3.1

4 Mean final score ± SD reported as 35.8 ± 2.8

5 Mean final score ± SD reported as 60.8 ± 10.3

6 Mean final score ± SD reported as 60.6 ± 10.5

7 Mean final score ± SD reported as 52.9 ± 2.6

8 Mean final score ± SD reported as 52.6 ± 3.2

9 Mean final score ± SD reported as 34.3 ± 1.8

10 Mean final score ± SD reported as 34.4 ± 1.3

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Posterior leaf spring ankle-foot orthosis (PLSAFO) Mean**	**Solid ankle-foot orthosis (SAFO) Mean**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**

Gross motor function measure (GMFM) Standing (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[3]	29[4]	-	MD = 0.20 lower (0.71 lower to 0.31 higher)*	LOW
GMFM Walking/Running/Jumping (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[5]	29[6]	-	MD = 0.50 higher (1.29 lower to 2.29 higher)*	LOW
Pediatric evaluation of disability inventory (PEDI) Mobility Functional skills (Better indicated by higher values) (hemiplegia)											
1 study (Buckon 2001)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29[7]	29[8]	-	MD = 0.20 lower (1.21 lower to 0.81 higher)*	LOW
Ascent PEDI Item 54 (proportion of children who keep up with peers) (Better indicated by higher values) (hemiplegia)											
1 study (Sienko-Thomas 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2,9]	none	8/19	9/19	0.89 (0.44 to 1.81)	RD = 0.05 lower (0.37 lower to 0.26 higher) *	LOW
Descent PEDI Item 59 (proportion of children who keep up with peers) (Better indicated by higher values) (hemiplegia)											
1 study (Sienko-Thomas 2002)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2,9]	none	6/19	7/19	0.86 (0.35 to 2.08)	RD = 0.05 lower (0.35 lower to 0.25 higher) *	LOW

* Calculated by the NCC-WCH

1 All outcomes have serious limitations as although randomisation was performed, no details are given, blinding of assessors and caregivers was not carried out and the means presented are not "mean changes from baseline" but are "mean values from observations made in a given treatment period".

2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and confidence intervals are wide

3 Mean final score ± SD reported as 37.8 ± 1

4 Mean final score ± SD reported as 38.0 ± 1

5 Mean final score ± SD reported as 68.1 ± 3

6 Mean final score ± SD reported as 67.6 ± 4
7 Mean final score ± SD reported as 56.6 ± 2
8 Mean final score ± SD reported as 56.8 ± 2
9 P = No significant difference (reported)

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Supramalleolar orthosis (SMO) Mean	Solid ankle-foot orthosis (SAFO) Mean	Relative (95% CI)	Absolute (95% CI)	Quality
Velocity (m/s) - group mean (Better indicated by higher values)											
1 study (Carlson 1997)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2,3]	none	11[4]	11[5]	-	MD = 0.00 (0.16 lower to 0.16 higher)*	LOW
Ankle dorsiflexion angle at foot strike (degrees) - group mean (Better indicated by higher values)											
1 study (Carlson 1997)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision[6]	none	11[7]	11[8]	-	MD = 6.70 lower (12.15 lower to 1.25 lower)*	MODERATE

* Calculated by the NCC-WCH
1 All outcomes have serious limitations as although randomisation was performed, no details are given, blinding of assessors and caregivers was not carried out and the means presented are not "mean changes from baseline" but are "mean values from observations made in a given treatment period".

2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and confidence intervals are wide
3 P = No significant difference (reported)
4 Mean final score ± SD reported as 1.00 ± 0.20
5 Mean final score ± SD reported as 1.00 ± 0.19
6 P < 0.05 (reported)
7 Mean final score ± SD reported as 3.3 ± 7.0
8 Mean final score ± SD reported as 10.0 ± 6.0

Chapter 6 Oral drugs

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Diazepam	Placebo	Relative (95% CI)	Absolute	Quality
Mean reduction of muscle tone score (modified Ashworth scale) at 15 -20 days; bedtime half dose diazepam 0.5mg if <8.5kg, 1mg if >8.5kg bodyweight vs. placebo: (Better indicated by higher values)											
1 study (Mathew 2005b)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	59[2]	55[3]	-	MD = 8.00[4]	MODERATE
Mean reduction of muscle tone score (modified Ashworth scale) at 15 - 20 days : bedtime full dose diazepam 1mg if <8.5kg, 2mg >8.5kg bodyweight vs. placebo: (Better indicated by higher values)											
1 study (Mathew 2005b)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	59[5]	55[6]	-	MD = 12.79[7]	MODERATE

1 Total population less than 400, confidence intervals not calculable
2 Mean change reported as 8.53
3 Mean change reported as 0.53
4 Reported p<0.001 (one way ANOVA)

5 Mean change reported as 13.32
6 Mean change reported as 0.53
7 Reported p<0.001 (one way ANOVA)

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Diazepam	Placebo	Relative (95% CI)	Absolute	Quality
Daytime drowsiness assessed by caregivers at 15 -20 days: bedtime dose diazepam											
1 study (Mathew 2005a)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	0/59 (0%)	0/55 (0%)	-	-	MODERATE

[1] Total number of events less than 300, no reports of drowsiness in either group

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Diazepam	Placebo	Relative (95% CI)	Absolute	Quality
Child's disposition during activities of daily living at 15 - 20 days: bedtime dose diazepam (Better indicated by higher values)											
1 study (Mathew	randomised trials	no serious limitations	no serious inconsistency	serious[1]	no serious imprecision[2]	none	59[3]	55[4]	-	MD 5.93 higher (5.41 to 6.45	MODERATE

2005a)										higher)	
Burden of caring for the child on the family at 15 - 20 days: bedtime dose diazepam (Better indicated by higher values)											
1 study (Mathew 2005a)	randomised trials	no serious limitations	no serious inconsistency	serious[1]	no serious imprecision[2]	none	59[5]	55[6]	-	MD 7.31 higher (6.78 to 7.84 higher)	MODERATE
Child's behavioural profile at 15 - 20 days: bedtime dose diazepam (Better indicated by higher values)											
1 study (Mathew 2005a)	randomised trials	no serious limitations	no serious inconsistency	serious[1]	no serious imprecision[2]	none	59[7]	55[8]	-	MD 7.35 higher (6.74 to 7.96 higher)	MODERATE

1 * Calculated by the NCC-WCH
2 1 Outcomes are reported clearly but tools are not validated
3 2 Total population less than 400, 95% confidence intervals do not include no effect and are not wide
4 3 Mean change in score 6.31 SD 1.94
5 4 Mean change in score 0.38 SD 0.62
6 5 Mean change in score 7.75 SD 1.98
7 6 Mean change in score 0.44 SD 0.66
8 7 Mean change in score 8.17 SD 2.14
9 8 Mean change in score 0.82 SD 1.07

10

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Baclofen**	**Placebo**	**Relative (95% CI)**	**Absolute**	**Quality**
Improvement of spasticity (by 1 level of Ashworth scale) at day 28 of treatment											

1 study (Milla 1977)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious [2]	none	9/20[3]	2/20[4]	RR 4.50 (1.11 to 18.27)*	35 more per 100 (from 1 more to 173 more)*	LOW
Improvement of spasticity (by more than 1 level of Ashworth scale) at day 28 of treatment											
1 study (Milla 1977)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[5]	none	5/20[6]	0/20[6]	RR 11 (0.65 to 186.62)*	-	LOW
Reduced muscle tone (Ashworth scale) reported by investigators											
1 study (McKinlay 1980)	randomised trials	serious[7]	no serious inconsistency	no serious indirectness	serious[2]	none	-	-	-[8]	-	LOW
Reduced muscle tone or better movement reported by physiotherapist											
1 study (McKinlay 1980)	randomised trials	serious[6]	no serious inconsistency	no serious indirectness	no serious imprecision	none	14/20[9]	5/20[9]	RR 2.8 (1.26 to 6.22)*	45 more per 100 (from 6 more to 130 more)*	MODERATE
Mean Tardieu score at wk12 of treatment (Better indicated by lower values)											
1 study (Scheinberg 2006)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[10]	none	15[11]	15[12]	-	4.4 lower[13]	MODERATE

* Calculated by the NCC-WCH

1 No washout period, allocation concealment unclear

2 Total number of events less than 300, the 95% confidence interval is wide

3 Reported Sign test p<0.001

4 Reported Sign test p=0.25. The 2 patients who improved received placebo before baclofen.

5 Total number of events less than 300, the 95% confidence interval includes no effect and is wide

6 Significance level was not reported. Using data from the first period only and analysing as a parallel trial, (3/10 in baclofen group versus 0/10 placebo group improved) RR = 7.00 (0.41 to 120.16) p=0.18

7 Allocation concealment unclear

8 Data not presented. Statement in report: “No significant changes between baclofen and placebo were observed in muscle tone”

9 Reduced muscle tone or better movement was reported by physiotherapists in 14 children taking baclofen (70%), five children taking placebo (25%), p=0.064 reported, method used not reported. One child showed no change throughout. N=20.

10 Total population less than 400, the 95% confidence interval includes no effect and is wide

11 Baseline Mean Tardieu score 20.9 (15.7 to 26.2). Final score 25.6 (19.4 – 25.8).

12 Baseline Mean Tardieu score 20.9 (15.7 to 26.2). Final score 27.1 (21.0 - 33.3)

13 No significant treatment, carry over or period effects found. Reported in paper as mean change = -4.4 (-10.8 to 2.0)

Quality assessment							Summary of findings				
							No. of patients		Effect		Quality
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Baclofen	Placebo	Relative (95% CI)	Absolute	
Mean Pediatric evaluation of disability inventory (PEDI) self care score at wk12 of treatment: (Better indicated by higher values)											
1 study (Scheinberg 2006)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	15[2]	15[3]	-	1.5 lower[4]	MODERATE
Mean PEDI mobility at wk12 of treatment: (Better indicated by higher values)											
1 study (Scheinberg 2006)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	15[5]	15[6]	-	1.5 lower[7]	MODERATE
Mean PEDI social function at wk12 of treatment: (Better indicated by higher values)											
1 study (Scheinberg 2006)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	15[8]	15[9]	-	0.2 lower[10]	MODERATE
Mean Goal assessment T score (GAS T) at wk12 of treatment: (Better indicated by higher values)											
1 study	randomised	serious[11]	no serious	no serious	no serious	none	15[12]	15[13]	-	6.6 higher[14]	MODERATE

(Scheinberg 2006)	trials		inconsistency	indirectness	imprecision						
Gait assessment performance improved (interstep distance and angle of the foot to the direction of walking)[15]											
1 study (McKinlay 1980)	randomised trials	serious[16]	no serious inconsistency	no serious indirectness	serious[17]	none	8/20	4/20	RR = 2.00 (0.72 to 5.59)*[18]	20 more per 100 (from 6 fewer to 92 more)*	LOW

* Calculated by the NCC-WCH

1 Total population less than 400, the 95% confidence interval includes no effect and is wide

2 Baseline mean PEDI self care score: 15.2 (6.5 to 23.8). Final score 19.1 (8.8 to 29.4)

3 Baseline mean PEDI self care score: 15.2 (6.5 to 23.8). Final score 20.5 (9.8 to 31.3)

4 Reported in paper as mean change = -1.5 (-3.5 to 0.6). No significant treatment, carry over or period effects found.

5 Baseline mean PEDI mobility score: 17.5 (7.3 to 27.8). Final score 17.3 (6.9 to 27.7)

6 Baseline mean PEDI mobility score: 17.5 (7.3 to 27.8). Final score 18.7 (8.1 to 29.4)

7 Reported in paper as mean change = -1.5 (-3.1 to 0.2). No significant treatment, carry over or period effects found.

8 Baseline mean PEDI social function score: 31.8 (18.0 to 45.6). Final score 32.7 (19.8 to 45.6)

9 Baseline mean PEDI social function score: 31.8 (18.0 to 45.6). Final score 32.9 (19.3 to 46.5)

10 Reported in paper as mean change = -0.2 (-3.0 to 2.6) No significant treatment, carry over or period effects found.

11 A significant treatment effect was reported F (1.13) = 4.5, p=0.05. No significant carry over or period effects found.

12 Baseline mean GAS T score was set at 35.0. Final score 51.3 (47.4 to 55.1)

13 Baseline mean GAS T score was set at 35.0. Final score 44.7 (39.3 to 50.0)

14 Reported in paper as mean change = 6.6 (1.0 higher to 12.3).

15 Physiotherapy staff asked children to walk along a roll of wallpaper on the floor after standing in black paint.

16 Allocation concealment unclear

17 Total number of events less than 300, the 95% confidence interval includes no effect and is wide

18 The investigators report that performance was unchanged throughout for 8/20 children.

20

Quality assessment	**Summary of findings**		
	No. of patients	**Effect**	**Quality**

No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Baclofen	Placebo	Relative (95% CI)	Absolute	
Adverse effects											
1 study (Milla 1977)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	5/20[3]	0/20	RR = 11 (0.65 to 186.62)*	-	LOW
Adverse effects (parental reports)											
1 study (McKinlay 1980)	randomised trials	serious[4]	no serious inconsistency	no serious indirectness	serious[5]	none	8/20	1/20	RR = 8 (1.1 to 58.19)*	35 more per 100 (from 1 more to 100 more)*	LOW
Drowsiness (therapist and teacher reports)											
1 study (McKinlay 1980)	randomised trials	serious[4]	no serious inconsistency	no serious indirectness	serious[5]	none	12/20[6]	0/20	RR = 25 (1.58 to 395.48)*[7]	-	LOW
Adverse effects											
1 study (Scheinberg 2006)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	6/15[8]	4/15[9]	RR = 1.5 (0.53 to 4.26)*	13 more per 100 (from 13 fewer to 87 more)*	MODERATE

* Calculated by the NCC-WCH

1 No washout period, allocation concealment unclear

2 Total number of events less than 300, the 95% confidence interval includes no effect and is wide

3 Children experienced adverse effects associated with baclofen during the initial dose finding period. 4/5 children were younger than 7 years and weighed less than 19 kg and in all five children symptoms disappeared a few days after stopping treatment. One child experienced hypotonia alone, two children experienced sedation alone, and two children experienced both adverse effects. No adverse reports were reported with stepped re-introduction of baclofen from a starting dose of 10mg/day, in all but one child, who had athetosis (sedation and hypotonia experienced at 20mg/day, but child continued in study on a 10mg/day dose).

4 Allocation concealment unclear

5 Total number of events less than 300, the 95% confidence interval is wide

6 Side effects were reported by the parents of 9/20 children. One of these reports pertained to the placebo period and the remaining 8 to the baclofen treatment period. In 4 of the 8 children reduction of dose of baclofen relieved side effects. Overall, drowsiness (5), sickness (2), dizziness (2), nocturnal enuresis (2), absence states, query epileptiform (2) slurred speech (2) and weakness (1) were reported, although the side effects are not listed by treatment period.

7 The investigators report this as a statistically significant difference (p<0.001).

8 Adverse effects reported as lethargy (1), constipation (2), seizures (2), poor appetite (1), drowsiness (1)

9 Adverse effects reported as lethargy (1), constipation (2), seizures (1), hypotonia (1), difficulty passing urine (1)

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Baclofen	Placebo	Relative (95% CI)	Absolute	Quality
Wish to continue child's treatment (parental report)											
1 study (McKinlay 1980)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	-	-	-	-[3]	LOW
Willingness to continue with the medication their child was on (parental report)											
1 study (Sheinberg 2006)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[4]	none	6/155	4/156	RR = 1.5 (0.53 to 4.26)*	13 more per 100 (from 13 fewer to 87 more)*	MODERATE
Positive effects (parental report)											
1 study (Scheinberg 2006)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[4]	none	6/157	7/158	RR = 0.86 (0.38 to 1.95)*	7 fewer per 100 (from 28 fewer to 44 more)*	MODERATE

* Calculated by the NCC-WCH

1 Allocation concealment unclear

2 Total number of events less than 300, confidence interval not calculable

3 One parent out of 20 said that they would continue with treatment (should their guess about active treatment be correct).

4 Total number of events less than 300, the 95% confidence interval includes no effect and is wide

5 Six parents said they would continue on baclofen therapy compared to 8 who would discontinue treatment and 1 who was unsure

6 Four parents said they would continue with placebo compared to 10 who would not continue.

7 Six parents reported positive effects in their children whilst taking baclofen [sleeps better (3), more vocal (1), easier to dress (1), less spasms (1)]

8 Seven parents reported positive effects when their children were taking placebo [sleeps better (2), more vocal (1), more relaxed/settled (3), less drooling (1)].

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Dantrolene	Placebo	Relative (95% CI)	Absolute	Quality
Motor tone assessment											
1 study (Haslam 1974)	randomised trials	no serious limitations	no serious inconsistency	serious[1]	serious[2]	none	59[3]	55[3]	-	0.609 higher[4]	LOW
Scissoring											
1 study (Haslam 1974)	randomised trials	no serious limitations	no serious inconsistency	serious[5]	serious[2]	none	59[3]	55[3]	-	0.381 higher[6]	LOW
Incidence of spasms (child and parental reports of improvement)											
1 study (Joynt 1980)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[7]	none	3/11	0/9	*RR = 5.83 (0.34 to 100.03)[8]	-	MODERATE
Passive range of motion (PROM)											

1 study (Haslam 1974)	randomised trials	no serious limitations	no serious inconsistency	serious[9]	serious[2]	none	59[3]	55[3]	-	0.565 higher[10]	LOW
Spontaneous range of motion (ROM)											
1 study (Haslam 1974)	randomised trials	no serious limitations	no serious inconsistency	serious[11]	serious[2]	none	59[3]	55[3]	-	0.522 higher[12]	LOW

1 * Calculated by the NCC-WCH
2 1 Assessments made using an eight point quantitative score (ranging from hypotonia -1 to hypertonia - 8) rather than a validated scoring system
3 2 Total population less than 400, 95% confidence interval not calculable.
4 3 No baseline or final values of assessment reported
5 4 Mean difference between dantrolene and placebo periods reported as p>0.05 (T-test for mean ΔD-ΔP)
6 5 Assessments made using an four point quantitative score (ranging from no scissoring -1 to marked - 4) rather than a validated scoring system
7 6 Mean difference between dantrolene and placebo periods reported as p<0.05 (T-test for mean ΔD-ΔP)
8 7 Total event rate less than 300, 95% confidence interval not calculable
9 8 p=0.089 reported
10 9 Assessments made using a seven point quantitative score (ranging from no restriction -1 to marked - 7) rather than a validated scoring system
11 10 Mean difference between dantrolene and placebo periods reported as p>0.05 (T-test for mean ΔD-ΔP)
12 11 Assessments made using a seven point quantitative score (ranging from no restriction -1 to marked - 7) rather than a validated scoring system
13 12 Mean difference between dantrolene and placebo periods reported as p>0.05 (T-test for mean ΔD-ΔP)

14

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Dantrolene**	**Placebo**	**Relative (95% CI)**	**Absolute**	**Quality**
Improvement in motor functioning											
1 study (Denhoff 1975)	randomised trials	no serious limitations	no serious inconsistency	serious[1]	serious[2]	none	10/26[3]	8/26[3]	-[4]	-	LOW

Improvement in activities of daily living and behaviour – staff assessment											
1 study (Denhoff 1975)	randomised trials	serious[5]	no serious inconsistency	serious[1]	serious[2]	none	11/20[6]	2/20[6]	-[7]	-	VERY LOW
Improvement in activities of daily living and behaviour – parent's assessment											
1 study (Denhoff 1975)	randomised trials	no serious limitations	no serious inconsistency	serious[1]	serious[2]	none	12/28[8]	2/28[8]	-[9]	-	LOW
Overall assessments (neurological, orthopaedic, motor, activities of daily living and behaviour)											
1 study (Denhoff 1975)	randomised trials	no serious limitations	serious inconsistency	serious[1]	serious[2]	none	28	28	-	-[10]	LOW
Activities of daily living using multiple performance tests at 9 weeks (e.g. as time taken to screw and unscrew two halves of barrels of three sizes and time taken to button and unbutton buttons of three different sizes)											
1 study (Joynt 1980)	randomised trials	no serious limitations	no serious inconsistency	serious[11]	serious[2]	none	11	9	-	-[12]	LOW

* Calculated by the NCC-WCH

1 treatment difference scores derived for each child using an unvalidated scoring system to indicate the comparative degree of improvement in functioning experienced in each treatment period, described as marked, moderate or marginal.

2 Total event rate less than 300, 95% confidence interval not calculable.

3 10 children showed improvement with dantrolene (5 moderate and 5 marginal), 8 children showed improvement with placebo (2 marked, 4 moderate and 2 marginal) and 8 children showed no changes throughout the study

4 The investigators report that this was not a statistically significant result (determined by binomial distribution)

5 Results for 6 of 28 children not included (> 20% attrition rate)

6 11 children showed improvement with dantrolene (4 marked, 4 moderate and 3 marginal), 2 children showed improvement with placebo (2 marginal) and 8 children showed no changes throughout the study

7 The investigators report that this was a statistically significant result ($p<0.02$ determined by binomial distribution).

8 12 children showed improvement with dantrolene (5 marked, 4 moderate and 3 marginal), 3 children showed improvement with placebo (1 marked, 2 moderate) and 13 children showed no changes throughout the study

9 The investigators report that this was a statistically significant result ($p<0.03$ determined by binomial distribution).

10 The investigators note that only a few children showed marked differences in assessments (neurological, orthopaedic, motor, activities of daily living and behaviour) between the drug and the placebo periods: more showed moderate differences and most showed marginal differences. For between eight and 13 of the 28 children, no discernible differences in functioning could be found between the drug and placebo treatment periods.

11 Assessments used unvalidated scoring system

12 The investigators report that no statistically significant differences between the treatment and placebo groups were observed for these tests

1

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Dantrolene	Placebo	Relative (95% CI)	Absolute	Quality
Daytime drowsiness assessed by caregivers at 15 - 20 days: bedtime dose diazepam											
1 study (Denhoff 1975)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	16/28[2]	7/28[2]	-[3]	-	MODERATE

2 1 Total event rate less than 300.

3 2 Side effects were generally transient. These were seen in 23/28 children and included irritability, lethargy, drowsiness and general malaise.16 children experienced these during dantrolene
4 treatment periods and 7 during placebo treatment periods. Irritability was more commonly reported during placebo periods than during dantrolene periods

5 3 The investigators report that this was a statistically significant result (p<0.03 reported).

6

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Trihexyphenidyl (THP)	Placebo	Relative (95% CI)	Absolute	Quality
Mean Barry-Albright Dystonia Scale (BAD) score: (Better indicated by lower values)											
1 study (Rice 2008)	randomised trials	no serious limitations	no serious inconsistency	serious[1]	serious[2]	none	16[3]	16[4]	-	-[5]	LOW

1 1 11/16 participants had dystonia and spasticity. 5/16 had dystonia alone
2 2 Total population is less than 400, 95% confidence interval includes no effect
3 3 Baseline mean BAD score: 18.4 (15.5 to 21.2). Final score 18.3 (14.8 to 21.8)
4 4 Baseline mean BAD score: 18.4 (15.5 to 21.2). Final score 16.9 (13.4 to 20.4)
5 5 Reported mean difference = 0.9 (-2.2 to 3.9)

6

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Trihexyphenidyl (THP)	Placebo	Relative (95% CI)	Absolute	Quality
Mean Quality of upper extremity skills test (QUEST) score (Better indicated by higher values)											
1 study (Rice 2008)	randomised trials	no serious limitations	no serious inconsistency	serious[1]	serious[2]	none	16[3]	16[4]	-	-[5]	LOW
Mean Goal assessment scale (GAS) score (Better indicated by higher values)											
1 study (Rice 2008)	randomised trials	serious[6]	no serious inconsistency	serious[1]	serious[2]	none	16[7]	16[8]	-	-[9]	VERY LOW
Mean Canadian occupational performance measure (COPM) score (performance) (Better indicated by higher values)											
1 study (Rice 2008)	randomised trials	serious[10]	no serious inconsistency	serious[1]	serious[2]	none	16[11]	16[12]	-	-[13]	VERY LOW

7 1 11/16 participants had dystonia and spasticity. 5/16 had dystonia alone
8 2 Total population is less than 400, 95% confidence interval includes no effect
9 3 Baseline mean QUEST score: 15.3 (-0.1 to 30.7). Final score 13.5 (1.4 to 25.5)
10 4 Baseline mean QUEST score: 15.3 (-0.1 to 30.7). Final score 15.1 (2.8 to 27.4)

5 Reported mean difference = -1.6 (-6.3 to 3.1)
6 Evidence of statistically significant order effect: F (1, 11) = 10.2, p= 0.009
7 Baseline mean GAS score: 20.0. Final score 39.3 (31.8 to 46.8)
8 Baseline mean GAS score: 20.0. Final score 33.3 (27.4 to 39.1)
9 Reported mean difference = 6.8 (-3.7 to 17.5)
10 Evidence of statistically significant order effect: F (1, 12) =4.7, p=0.05
11 Baseline mean COPM score (performance): 2.6 (2.2 to 3.0). Final score 4.4 (3.6 to 5.3)
12 Baseline mean COPM score (performance): 2.6 (2.2 to 3.0). Final score 3.8 (3.0 to 4.7)
13 Reported mean difference = 0.8 (-0.5 to 2.0)

Quality assessment							Summary of findings				
							No. of patients		Effect		Quality
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Trihexyphenidyl (THP)	Placebo	Relative (95% CI)	Absolute	
Adverse effects											
1 study (Rice 2008)	randomised trials	no serious limitations	no serious inconsistency	serious[1]	serious[2]	none	16/163	6/164	-	-	LOW

1 11/16 participants had dystonia and spasticity. 5/16 had dystonia alone
2 Total population is less than 400
3 Adverse effects symptoms during the active medication phase included agitation (distressed without reason or other odd behaviour), constipation, dry mouth and poor sleep. One child developed multiple adverse effects related to trihexyphenidyl (including dry mouth, confusion, agitation, inability to sleep, tachycardia, hallucinations, and urinary incontinence) requiring brief admission to hospital after the initial dose and had to withdraw from the trial.
4 Six of the sixteen participants (38%) experienced side effects during the placebo phase.

Quality assessment	Summary of findings

							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Trihexyphenidyl (THP)	Placebo	Relative (95% CI)	Absolute	Quality
Mean Canadian occupational performance measure (COPM) score (satisfaction) (Better indicated by higher values)											
1 study (Rice 2008)	randomised trials	no serious limitations	no serious inconsistency	serious[1]	serious[2]	none	16[3]	16[4]	-	-[5]	LOW

1 11/16 participants had dystonia and spasticity. 5/16 had dystonia alone

2 Total population is less than 400, 95% confidence interval includes no effect

3 Baseline mean COPM score (satisfaction): 2.3 (1.8 to 2.7). Final score 4.7 (3.5 to 5.9)

4 Baseline mean COPM score (satisfaction): 2.3 (1.8 to 2.7). Final score 3.8 (2.8 to 4.8)

5 Reported mean difference = 0.7 (-0.3 to 1.8)

Chapter 7 Botulinum toxin

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Botulinum neurotoxin A (BoNT A)/ Occupational therapy (OT)	OT only all outcomes	Relative (95% CI)	Absolute	Quality
Modified Ashworth scale - shoulder adductors - 4 months											
1 study (Greaves 2004)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	9	9	OR 0.20 (0.03, 1.15) †	-	LOW

Modified Ashworth scale - elbow flexors - 3 months											
2 studies (Russo 2007; Wallen 2007)	randomised trials	serious[3]	no serious inconsistency	no serious indirectness	no serious imprecision	none	41	39	OR 0.16 (0.06 to 0.43) †	-	MODERATE
Modified Ashworth scale - elbow flexors - 6 months											
2 studies (Russo 2007; Wallen 2007)	randomised trials	serious[3]	serious[4]	no serious indirectness	serious[5]	none	41	39	OR 0.33 (0.13 to 0.86) †	-	LOW
Modified Tardieu scale - elbow flexors (change from baseline R2-R1) - 4 months (Better indicated by lower values)											
1 study (Greaves 2004)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[6]	none	9	9	-	MD 43.89 lower (92.99 lower to 5.21 higher) †	LOW
Modified Tardieu scale - elbow flexors - Four months (cycle 1) final score (Better indicated by lower values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[6]	none	11[7]	11[8]	-	MD 34.3 lower (70.67 lower to 2.07 higher)*	MODERATE
Modified Tardieu elbow flexors cycle 2 final score (Better indicated by lower values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[9]	none	11[10]	11[11]	-	MD 36 lower (71.3 to 0.7 lower)	MODERATE

										*	
Modified Tardieu elbow flexors cycle 3 final score (Better indicated by lower values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[6]	none	11[12]	11[13]	-	MD 42.8 lower (86.48 lower to 0.88 higher)*	MODERATE
Elbow extension passive range of motion (PROM) (change from baseline) - 3 months (Better indicated by higher values)											
2 studies (Fehlings 2000; Wallen 2007)	randomised trials	serious[3,14]	no serious inconsistency	no serious indirectness	serious[6]	none	34	31	-	MD 0.11 higher (2.96 lower to 3.19 higher) †	LOW
Elbow extension PROM (change from baseline) - 6 months (Better indicated by higher values)											
2 studies (Fehlings 2000; Wallen 2007)	randomised trials	serious[3]	no serious inconsistency	no serious indirectness	serious[6]	none	34	32	-	MD 0.15 lower (3.38 lower to 3.07 higher †)	LOW
Modified Ashworth scale - pronators - 3 Months											
1 study (Wallen 2007)	randomised trials	serious[3]	no serious inconsistency	no serious indirectness	serious[2]	none	20	17	OR 1.58 (0.45 to 5.52) †	-	MODERATE
Modified Ashworth scale - pronators - 4 Months											
1 study (Greaves 2004)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[6]	none	9	9	OR 0.13 (0.02 to 0.97) †	-	LOW
Modified Ashworth scale - pronators - 6 Months											

1 study (Wallen 2007)	randomised trials	serious[3]	no serious inconsistency	no serious indirectness	serious[6]	none	20	17	OR 1.5 (0.22 to 10.16) †	-	LOW
Modified Tardieu scale - forearm pronators - 4 months (cycle 1) mean change (Better indicated by lower values)											
1 study (Olesch 2010)	randomised trials	serious[15]	no serious inconsistency	no serious indirectness	serious[16]	none	11[17]	11[18]	-	MD 4 higher*	LOW
Modified Tardieu forearm pronators Cycle 2 mean change (Better indicated by lower values)											
1 study (Olesch 2010)	no methodology chosen	serious[14]	no serious inconsistency	no serious indirectness	serious[15]	none	11[19]	11[20]	-	MD 5.8 lower*	LOW
Modified Tardieu Forearm pronators cycle 3 mean change (Better indicated by lower values)											
1 study (Olesch 2010)	no methodology chosen	serious[14]	no serious inconsistency	no serious indirectness	serious[15]	none	11[21]	11[22]	-	MD 18.5 lower*	LOW
Supination active range of motion (AROM) (change from baseline) - 3 months (Better indicated by higher values)											
1 study (Speth 2005)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[6]	none	10	10	-	MD 16.3 lower (33.01 lower to 0.41 higher) †	MODERATE
Supination AROM (change from baseline) - 6 months (Better indicated by higher values)											
1 study (Speth 2005)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[6]	none	10	10	-	MD 8.4 lower (36.74 lower to 19.94 higher) †	MODERATE
Forearm supination PROM (change from baseline) - 3 months (Better indicated by higher values)											
2 studies (Fehlings 2000,	randomised trials	serious[3,14]	no serious inconsistency	no serious indirectness	serious[6]	none	34	31	-	MD 3.64 higher (0.92 lower to 8.2	LOW

Wallen 2007)										higher) †	
Forearm supination PROM (change from baseline) - 6 months (Better indicated by higher values)											
2 studies (Fehlings 2000, Wallen 2007)	randomised trials	serious[3,14]	no serious inconsistency	no serious indirectness	serious[6]	none	34	32	-	MD 0.97 higher (4.45 lower to 6.39 higher) †	LOW
Modified Ashworth scale - wrist flexors - 3 Months											
2 studies (Russo 2007, Wallen 2007)	randomised trials	serious[3]	serious[23]	no serious indirectness	no serious imprecision	none	0/0 (0%)	0/0 (0%)	OR 0.1 (0.03 to 0.29) †	-	MODERATE
Modified Ashworth scale - wrist flexors - 4 Months											
1 study (Greaves 2004)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[6]	none	0/0 (0%)	0/0 (0%)	OR 0.36 (0.07 to 1.87) †	-	LOW
Modified Ashworth scale - wrist flexors - 6 Months											
2 studies (Russo 2007, Wallen 2007)	randomised trials	serious[3]	serious[24]	no serious indirectness	no serious imprecision	none	0/0 (0%)	0/0 (0%)	OR 0.2 (0.08 to 0.51) †	-	LOW
Modified Tardieu scale - wrist flexors (change from baseline R2-R1) - Four months (Better indicated by lower values)											
1 study (Greaves 2004)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[6]	none	10	10	-	MD 10.56 lower (30.83 lower to 9.71 higher) †	LOW

Modified Tardieu scale - wrist flexors - 4 months (cycle 1) final score (Better indicated by lower values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[6]	none	11[25]	11[26]	-	MD 18.5 lower (37.78 lower to 0.78 higher)*	MODERATE
Modified Tardieu (final score comparison) Wrist flexors Cycle 2 (Better indicated by lower values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[6]	none	11[27]	11[28]	-	MD 18.5 lower (37.78 lower to 0.78 higher)*	MODERATE
Modified Tardieu(final score comparison) Wrist flexors Cycle 3 (Better indicated by lower values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	11[29]	11[30]	-	MD 20.9 lower (38.27 to 3.53 lower)*	HIGH
Wrist extension AROM (change from baseline) - 3 months (Better indicated by higher values)											
1 study (Speth 2005)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[6]	none	10	10	-	MD 14.7 higher (7.92 lower to 37.32 higher) †	MODERATE
Wrist extension AROM (change from baseline) - 6 months (Better indicated by higher values)											
1 study (Speth 2005)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[6]	none	10	10	-	MD 15.6 higher (6.36 lower to 37.56 higher) †	MODERATE
Wrist extension PROM (change from baseline) - 3 months (Better indicated by higher values)											
1 study	randomised	serious[14]	no serious	no serious	serious[6]	none	14	15	-	MD 3.31	LOW

(Fehlgins 2000)	trials		inconsistency	indirectness						higher (4.7 lower to 11.32 higher †)	
Wrist extension PROM (change from baseline) - 6 months (Better indicated by higher values)											
1 study (Fehlings 2000)	randomised trials	serious[14]	no serious inconsistency	no serious indirectness	serious[6]	none	14	15	-	MD 0.07 lower (9.85 lower to 9.71 higher) †	LOW
Palmar thumb abduction PROM (change from baseline) - 3 months (Better indicated by higher values)											
1 study (Fehlings 2000)	randomised trials	serious[14]	no serious inconsistency	no serious indirectness	serious[6]	none	14	15	-	MD 2.06 higher (4.69 lower to 8.81 higher) †	LOW
Palmar thumb abduction PROM (change from baseline) - 6 months (Better indicated by higher values)											
1 study (Fehlings 2000)	randomised trials	serious[14]	no serious inconsistency	no serious indirectness	serious[6]	none	14	15	-	MD 1.56 higher (3.96 lower to 7.08 higher) †	LOW

* Calculated by the NCC-WCH

† Data from Hoare 2010 Cochrane systematic review

1 Therapists and outcome assessors not blinded to treatment allocation

2 Total number of events less than 300, the 95% confidence interval includes no effect and is wide

3 Therapists not blinded to treatment allocation in Wallen 2007,

4 Heterogeneity: $Tau^2 = 2.30$; $Chi^2 = 5.80$, df = 1 (P = 0.02); $I^2 = 83\%$. Russo 2007 OR = 0.10 [0.03 to 0.39] and for Wallen 2007 OR = 1.06 [0.27 to 4.11]

5 Total number of events less than 300, 95% confidence interval for mean difference does not cross null hypothesis but is wide

6 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and are wide

7 Mean final score ± SD reported as 43.0 ± 45.7

8 Mean final score ± SD reported as 77.3 ± 39.3

9 Total population less than 400, 95% confidence interval for mean difference does not cross null hypothesis but is wide

10 Mean final score ± SD reported as 54.5 SD ± 44.1

11 Mean final score ± SD reported as 90.5 SD ± 40.3

12 Mean final score ± SD reported as 34.5 SD ± 48.0
13 Mean final score ± SD reported as 77.3 SD ± 56.2
14 No allocation concealment in Fehlings 2000
15 Treatment groups have significantly different baseline mean scores ± SD: BoNT + therapy group 50.5 ± 27.4, therapy only group = 82.0 ± 26.3
16 Mean difference in change scores estimated because of significantly different baseline mean scores in treatment groups. Total number of events less than 300, 95% confidence interval not calculable
17 Mean final score ± SD reported as 48.5 ± 37.2
18 Mean final score ± SD reported as 75.5 ± 31.7
19 Mean final score ± SD reported as 39.5 ± 40.6
20 Mean final score ± SD reported as 77.3 ± 22.8
21 Mean final score ± SD reported as 22.7 ± 33.2
22 Mean final score ± SD reported as 72.7 ± 28.7
23 Heterogeneity: Chi² = 7.52, df = 1 (P = 0.006); I² = 87%. Russo 2007 OR = 0.01 [0.00 to 0.07] and for Wallen 2007 OR = 0.26 [0.07 to 0.96]
24 Heterogeneity: Chi² = 6.77, df = 1 (P = 0.009); I² = 85%. Russo 2007 OR = 0.05 [0.01 to 0.20] and for Wallen 2007 OR = 0.57 [0.17 to 1.91]
25 Mean final score ± SD reported as 11.0 ± 17.4
26 Mean final score ± SD reported as 29.5 ± 27.6
27 Mean final score ± SD reported as 7.3 ± 9.3
28 Mean final score ± SD reported as 25.0 ± 30.7
29 Mean final score ± SD reported as 3.2 ± 7.2
30 Mean final score ± SD reported as 24.1 ± 28.5

Quality assessment							**Summary of findings**				
							No of patients/Mean±SD		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Botulinum neurotoxin (BoNT) + physical therapy**	**Physical therapy only**	**Relative**	**Absolute**	**Quality**
Modified Ashworth score (MAS) Plantar flexor spasticity (reduction in spasticity) mean change 3 months Better indicated by higher values)											
1 study (Kay 2004)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious [2]	none	16 limbs[3]	20 limbs[4]	-	MD 0.2 higher (0.52 lower to 0.92	LOW

										higher)*	
MAS Plantar flexor spasticity (reduction in spasticity)mean change 6 months (Better indicated by higher values)											
1 study (Kay 2004)	randomised trials	serious[5]	no serious inconsistency	no serious indirectness	serious[6]	none	16 limbs[7]	20 limbs[8]	-	MD 0.94 higher (0.14 to 1.74 higher)*	LOW
Ashworth score at ankle (reduction in spasticity) – mean change 3 months (Better indicated by higher values)											
1 study (Ackman 2005)	randomised trials	serious[9]	no serious inconsistency	no serious indirectness	serious[10]	none	12[11]	13[12]	-	MD 0.3 higher	LOW
Ashworth score at ankle (reduction in spasticity) – mean change 6 months (Better indicated by higher values)											
1 study (Ackman 2005)	randomised trials	serious[9]	no serious inconsistency	no serious indirectness	serious[10]	none	12[13]	13[14]	-	MD 0.0 lower/higher	LOW
Active dorsiflexion at ankle – mean change at 3 months (Better indicated by higher values)											
1 study (Ackman 2005)	randomised trials	serious[9]	no serious inconsistency	no serious indirectness	serious[10]	none	12[15]	13[16]	-	MD 2 more	LOW
Active dorsiflexion at ankle – mean change at 6 months (as reported, read from graph) (Better indicated by higher values)											
1 study (Ackman 2005)	randomised trials	serious[9]	no serious inconsistency	no serious indirectness	serious[10]	none	12[17]	13[18]	-	MD 3 higher	LOW
Ankle dorsiflexion (knee flexion) passive range of motion (PROM) at 3 months (mean change from baseline) (Better indicated by higher values)											
1 study (Ackman 2005)	randomised trials	serious[9]	no serious inconsistency	no serious indirectness	serious[10]	none	12[19]	13[20]	-	MD 0.5 lower	LOW

Ankle dorsiflexion (knee flexion) PROM at 6 months (mean change from baseline) (Better indicated by higher values)											
1 study (Ackman 2005)	randomised trials	serious[9]	no serious inconsistency	no serious indirectness	serious[10]	none	12[21]	13[22]	-	MD 1.5 higher	LOW
Ankle dorsiflexion (knee extension) PROM at 3 months (mean change from baseline) (Better indicated by higher values)											
1 study (Ackman 2005)	randomised trials	serious[9]	no serious inconsistency	no serious indirectness	serious[10]	none	12[23]	13[24]	-	MD 1 higher	LOW
Ankle dorsiflexion (knee extension) PROM at 6 months (mean change from baseline) (Better indicated by higher values)											
1 study (Ackman 2005)	randomised trials	serious[9]	no serious inconsistency	no serious indirectness	serious[10]	none	12[25]	13[26]	-	MD 1.5 higher*	LOW
Ankle dorsiflexion PROM at 3 months (mean change from baseline) (Better indicated by higher values)											
1 study (Kay 2004)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[27]	none	16[28]	20[29]	-	MD 4.5 higher (3.22 lower to 12.22 higher)*	LOW
Ankle dorsiflexion PROM at 6 months (mean change from baseline) read from graph (Better indicated by higher values)											
1 study (Kay 2004)	randomised trials	serious[5]	no serious inconsistency	no serious indirectness	serious[10]	none	16[30]	20[31]	-	MD 1.5 lower	LOW
Right ankle dorsiflexion (knee extension) PROM at 3 months (mean change from baseline) (Better indicated by higher values)											
1 study Reddishough 2002)	randomised trials	serious[32]	no serious inconsistency	no serious indirectness	no serious imprecision	selective outcome reporting[33]	11[34]	11[35]	-	MD 8.63 higher (2.23 to 15.03 higher)*	LOW
Right ankle dorsiflexion (knee flexion) PROM at 6 months (mean change from baseline) (Better indicated by higher values)											

1 study Reddishough 2002)	randomised trials	serious[32]	no serious inconsistency	no serious indirectness	serious[27]	selective outcome reporting[33]	34[36]	34[37]	-	MD 8.53 higher (0.27 lower to 17.33 higher)*	VERY LOW
MAS Left calf mean change 6 months (Better indicated by lower values)											
1 study Reddishough 2002)	randomised trials	serious[32]	no serious inconsistency	no serious indirectness	serious[38]	selective outcome reporting[33]	35[39]	35[40]	-	0.52 lower (0.89 to 0.15 lower)*	VERY LOW
MAS Left adductor mean change 6 months (Better indicated by higher values)											
1 study Reddishough 2002)	randomised trials	serious[32]	no serious inconsistency	no serious indirectness	serious[38]	selective outcome reporting[33]	8[41]	8[42]	-	1.63 lower (2.53 to 0.71 lower)*	VERY LOW
MAS Right adductor mean change 6 months (Better indicated by lower values)											
1 study Reddishough 2002)	randomised trials	serious[32]	no serious inconsistency	no serious indirectness	serious[43]	selective outcome reporting[33]	N=?[44]	N=?[45]	-	-	MODERATE
MAS Total score mean change 3 months (Better indicated by higher values)											
1 study Reddishough 2002)	randomised trials	serious[32]	no serious inconsistency	no serious indirectness	serious[46]	none	18[47]	18[48]	-	2.51 lower (3.22 to 1.8 lower)	MODERATE

* Calculated by the NCC-WCH

1 Outcome assessors not blinded to treatment allocation.

2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and is wide. p=0.7061 reported

3 Mean change from baseline ± SD = 0.9 ± 1.0

4 Mean change from baseline ± SD = 1.1 ± 1.2

5 Outcome assessors not blinded to treatment allocation. Results estimated from graphs

6 Total population less than 400, 95% confidence interval for mean difference does not cross null hypothesis but is wide p<0.03 reported

7 Mean change from baseline ± SD = 0.26 ± 1.14
8 Mean change from baseline ± SD =1.2 ± 1.3
9 No analysis or results across groups provided, results estimated from graphs
10 Total population less than 400, 95% confidence interval of mean difference of change not calculable,
11 Estimated baseline = 2.6±0.9, estimated final score 2.4±0.5
12 Estimated baseline = 2.6±1.0, estimated final score 2.1±0.8
13 Estimated baseline = 2.6±0.9, estimated final score 2.2±0.6
14 Estimated baseline = 2.6±1.0, estimated final score 2.2±0.7
15 Estimated baseline = -18°±16, estimated final score -15°±20
16 Estimated baseline = -12°±14, estimated final score -11°±20
17 Estimated baseline = -18°±16, estimated final score -11°±14
18 Estimated baseline = -12°±14, estimated final score -8°±13
19 Estimated change from baseline = 3.5
20 Estimated change from baseline = 4
21 Estimated change from baseline = 4.5
22 Estimated change from baseline = 3
23 Estimated change from baseline = 3.5
24 Estimated change from baseline = 2.5
25 Estimated change from baseline = 4.5
26 Estimated change from baseline = 3
27 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and is wide.
28 Mean change from baseline reported as 18.4 ± 11.7
29 Mean change from baseline reported as 13.9 ± 11.8
30 Estimated change from baseline = 10.5 ± 10.5
31 Estimated change from baseline = 12 ± 12
32 No allocation concealment. Serious attrition for many outcomes. 49 participants recruited
33 Only statistically significant results reported p<0.05
34 Mean change from baseline ± SD = 1.36 ± 7.45
35 Mean change from baseline ± SD = -7.27 ± 7.86
36 Mean change from baseline reported as -0.09 ± 0.78
37 Mean change from baseline reported as 13.9 ± 11.8
38 Total population less than 400, 95% confidence interval for mean difference does not cross null hypothesis but is wide. p <0.05 reported
39 Mean change from baseline ± SD = -0.09 ± 0.78
40 Mean change from baseline ± SD = 0.43 ± 0.81
41 Mean change from baseline ± SD = -0.63 ± 1.06
42 Mean change from baseline ± SD = 1 ± 0.76
43 Total population less than 400, 95% confidence interval of mean difference of change not calculable, p <0.05 reported

44 Worsening of approx 0.5-1 MAS reported
45 Improvement of approx 1 MAS point reported
46 Total population less than 400, 95% confidence interval of mean difference of change not calculable, p = no significant difference reported
47 Mean change from baseline ± SD = -1.13 ± 0.83
48 Mean change from baseline ± SD = 1.38 ± 1.30
Total population less than 400, 95% confidence interval for mean difference does not cross null hypothesis but is wide. p = no significant difference reported

Quality assessment							Summary of findings				
							No of patients		Effect		
No of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Botulinum neurotoxin A (BoNT A)/ Occupational therapy (OT)	OT only all outcomes	Relative (95% CI)	Absolute	Quality
Goal Attainment Scaling (GAS) (change from baseline) - Parent - Three months (Better indicated by higher values)											
4 studies (Boyd 2004; Lowe 2006; Russo 2007; Wallen 2007)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	77	75	-	MD 8.52 higher (4.42 to 12.62 higher) †	HIGH
GAS (change from baseline) - Parent - Four months (Better indicated by higher values)											
1 study (Greaves 2004)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	10	10	-	MD 9.21 higher (1.06 to 17.36 higher) †	LOW

GAS (change from baseline) - Parent - Six months (Better indicated by higher values)											
3 studies (Lowe 2006; Russo 2007; Wallen 2007)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[3]	none	62	60	-	MD 5.04 higher (0.75 lower to 10.83 higher) †	MODERATE
GAS-T score (final score comparison) Cycle 1 (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[3]	none	11[4]	11[5]	-	MD 6,0 higher (2.32 lower to 14.32 higher)*	MODERATE
GAS-T score (final score comparison) Cycle 2 (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[3]	none	11[6]	11[7]	-	MD 7.7 higher (1.16 lower to 16.56 higher)*	MODERATE
GAS - T score(final score comparison) Cycle 3 (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[3]	none	11[8]	11[9]	-	MD 4.9 higher (2.11 lower to 11.91 higher)*	MODERATE
GAS-T score over whole year (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	11[10]	11[11]	-	MD 7 higher (0.59 to 13.41 higher)*	MODERATE

Canadian occupational performance measure (COPM) performance (change from baseline) - Three months (Better indicated by higher values)											
3 studies (Boyd 2004; Lowe 2006; Wallen 2007)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	56	53	-	MD 0.77 higher (0.23 to 1.31 higher) †	MODERATE
COPM Performance (change from baseline) - Four months (Better indicated by higher values)											
1 study (Greaves 2004)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[3]	none	10	10	-	MD 0.6 higher (0.68 lower to 1.88 higher) †	LOW
COPM Performance (change from baseline) - Four months (cycle 1) change score (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[3]	none	11[12]	11[13]	-	MD 0.7 higher (0.32 lower to 1.72 higher) *	MODERATE
COPM Performance(change from baseline) Cycle 2 (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	11[14]	11[15]	-	MD 0.9 higher (0.1 to 1.7 higher)*	MODERATE
COPM Performance (change from baseline) Cycle 3 (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	11[16]	11[17]	-	MD 1.4 higher (0.35 to 2.45 higher)*	MODERATE
COPM Performance(change from baseline) over whole year (Better indicated by higher values)											
1 study (Olesch	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[3]	none	11[18]	11[19]	-	MD 0.8 higher (0.04 lower to	MODERATE

2010)										1.64 higher)*	
COPM Performance (change from baseline) - Six months (Better indicated by higher values)											
2 studies (Lowe 2006; Wallen 2007)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[3]	none	41	38	-	MD 0.4 higher (0.3 lower to 1.09 higher) †	MODERATE
Paediatric evaluation of disability inventory (PEDI) scaled score - Functional Skills (change from baseline) - Three months (Better indicated by higher values)											
3 studies Boyd 2004; Fehlings; Wallen 2007)	randomised trials	serious[20]	no serious inconsistency	no serious indirectness	serious[3]	none	49	47	-	MD 0.6 higher (1.44 lower to 2.63 higher) †	LOW
PEDI scaled score - Functional Skills (change from baseline) - Six months (Better indicated by higher values)											
2 studies (Fehlings 200; Wallen 2007)	randomised trials	serious[20]	no serious inconsistency	no serious indirectness	serious[3]	none	34	32	-	MD 1.09 higher (1.7 lower to 3.88 higher) †	LOW
PEDI scaled score - Caregiver assistance (change from baseline) - Three months (Better indicated by higher values)											
1 study (Wallen 2007)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[3]	none	20	17	-	MD 6.3 lower (14.68 lower to 2.08 higher) †	MODERATE
PEDI scaled score - Caregiver assistance (change from baseline) - Six months (Better indicated by higher values)											
1 study (Wallen	randomised trials	no serious	no serious	no serious	serious[3]	none	20	17	-	MD 4.4 lower	MODERATE

2007)		limitations	inconsistency	indirectness						(13.38 lower to 4.58 higher) †	
Quality of Upper Extremity Skills Test (QUEST) (change from baseline) - Parent - Three months (Better indicated by higher values)											
3 studies (Fehlings 2000; Lowe 2006; Wallen 2007)	randomised trials	serious[20]	no serious inconsistency	no serious indirectness	no serious imprecision	none	42	42	-	MD 9.19 higher (4.84 to 13.54 higher) †	MODERATE
QUEST (change from baseline) - Parent - Four months (Better indicated by higher values)											
1 study (Greaves 2004)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[3]	none	10	10	-	MD 4,42 lower (9.98 lower to 1.14 higher) †	LOW
QUEST (change from baseline) - Parent - Six months (Better indicated by higher values)											
3 studies (Fehlings 2000; Lowe 2006; Wallen 2007)	randomised trials	serious[20]	no serious inconsistency	no serious indirectness	serious[3]	none	42	42	-	MD 2.93 higher (1.58 lower to 7.45 higher) †	LOW
QUEST Total score (final score comparison) Cycle 1 (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[3]	none	11[21]	11[22]	-	MD 5.50 higher (5.37 lower to 16.37	MODERATE

										higher)*	
QUEST Total score (final score comparison) Cycle 2 (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[3]	none	11[23]	11[24]	-	MD 7.60 higher (2.42 lower to 17.62 higher)*	MODERATE
QUEST Total score (final score comparison) Cycle 3 (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[3]	none	11[25]	11[26]	-	MD 6.70 higher (1.58 lower to 14.98 higher)*	MODERATE

* Calculated by the NCC-WCH

† Data from Hoare 2010 Cochrane systematic review

1 Therapists and outcome assessors not blinded to treatment allocation

2 Total population less than 400, 95% confidence interval for mean difference does not cross null hypothesis but is wide

3 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and is wide.

4 Mean final score ± SD reported as 54.1 ± 9.8

5 Mean final score ± SD reported as 48.1 ± 10.1

6 Mean final score ± SD reported as 55.0 ± 4.3

7 Mean final score ± SD reported as 47.3 ± 11.6

8 Mean final score ± SD reported as 54.9 ± 9.5

9 Mean final score ± SD reported as 50.0 ± 7.1

10 Mean final score ± SD reported as 55.8 ± 6.6

11 Mean final score ± SD reported as 48.8 ± 8.6

12 Mean change from baseline ± SD = 2.4 ± 1.0

13 Mean change from baseline ± SD = 1.7 ± 1.4

14 Mean change from baseline ± SD = 2.7 ± 0.9

15 Mean change from baseline ± SD = 1.8 ± 1.0

16 Mean change from baseline ± SD = 3.0 ± 1.3

17 Mean change from baseline ± SD = 1.6 ± 1.2

18 Mean change from baseline ± SD = 2.5 ± 1

19 Mean change from baseline ± SD = 1.7 ± 0.6

20 No allocation concealment in Fehlings 2000
21 Mean final score ± SD reported as 76.3 ± 13.2
22 Mean final score ± SD reported as 70.8 ± 12.8
23 Mean final score ± SD reported as 76.9 ± 10.4
24 Mean final score ± SD reported as 69.3 ± 13.4
25 Mean final score ± SD reported as 79.6 ± 8.0
26 Mean final score ± SD reported as 72.9 ± 11.5

Quality assessment							Summary of findings				
							Mean ± SD		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Botulinum neurotoxin (BoNT) + physical therapy	Physical therapy only	Relative (95% CI)	Absolute	Quality
Gross Motor Function Measure (GMFM) –C, D, E. Percent score mean change 3 months (Better indicated by higher values)											
1 study (Kay 2004)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	16 limbs[3]	20 limbs[4]		MD 3.8 higher (0.5 lower to 8.1 higher)*	LOW
GMFM –C, D, E. Percent score mean change 6 months (Better indicated by higher values)											
1 study (Kay 2004)	randomised trials	serious[5]	no serious inconsistency	no serious indirectness	serious[2]	none	16 limbs[6]	20 limbs[7]		MD 1.01 higher (1.13 lower to 3.15 higher)*	LOW
GMFM Total score mean change 3 months (Better indicated by higher values)											
1 study (Reddishough 2002)	randomised trials	serious[8]	no serious inconsistency	no serious indirectness	serious[2]	none	19[9]	19[10]		MD 1.33 lower (5.12 lower to 2.46 higher)*	LOW

GMFM Total score mean change 6 months (Better indicated by higher values)											
1 study (Reddishough 2002)	randomised trials	serious[8]	no serious inconsistency	no serious indirectness	serious[2]	none	19[11]	19[12]		MD 0.16 higher (4.37 lower to 4.69 higher)*	LOW
GMFM Total score with aids mean change 3 months (Better indicated by higher values)											
1 study (Reddishough 2002)	randomised trials	serious[8]	no serious inconsistency	no serious indirectness	serious[2]	none	7[13]	7[14]		MD 3.72 higher (7.56 lower to 15 higher)	LOW
GMFM Total score with aids mean change 6 months (Better indicated by higher values)											
1 study (Reddishough 2002)	randomised trials	serious[8]	no serious inconsistency	no serious indirectness	serious[2]	none	24[15]	24[16]		MD 7.19 lower (13.64 to 0.74 lower)	LOW
Velocity (m/s) mean change 3 months (as reported, read from graph) (Better indicated by higher values)											
1 study (Ackman 2005)	randomised trials	serious[17]	no serious inconsistency	no serious indirectness	serious[18]	none	12[19]	13[20]		MD 0.2 higher*	LOW
Velocity (m/s) mean change 6 months (as reported, read from graph) (Better indicated by higher values)											
1 study (Ackman 2005)	randomised trials	serious[17]	no serious inconsistency	no serious indirectness	serious[18]	none	12[21]	13[22]		MD 0.05 higher*	LOW

* Calculated by the NCC-WCH

1 Outcome assessors not blinded to treatment allocation.

2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and is wide. p= no statistically significant difference reported

3 Mean change from baseline ± SD = 2.5 ± 7.5

4 Mean change from baseline ± SD = -1.3 ± 5.1

5 Outcome assessors not blinded to treatment allocation. Results estimated from graphs

6 Mean change from baseline ± SD = 2.84 ± 3.33

7 Mean change from baseline ± SD = 1.83±3.17
8 No allocation concealment. Serious attrition
9 Mean change from baseline ± SD = 2.70 ± 4.62
10 Mean change from baseline ± SD = 4.03 ± 7.05
11 Mean change from baseline ± SD = 3.60 ± 7.44
12 Mean change from baseline ± SD = 3.44 ± 6.79
13 Mean change from baseline ± SD = 6.52 ± 4.95
14 Mean change from baseline ± SD = 2.80 ± 14.40
15 Mean change from baseline ± SD = 3.94 ± 11.60
16 Mean change from baseline ± SD = 11.13 ± 11.18
17 No analysis or results across groups provided, results estimated from graphs
18 Total population less than 400, 95% confidence interval of mean difference of change not calculable
19 Mean change from baseline = 0.15 no SD reported
20 Mean change from baseline = -0.05 no SD reported
21 Mean change from baseline = 0.1 no SD reported
22 Mean change from baseline = 0.05 no SD reported

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Botulinum neurotoxin A (BoNT A)/ Occupational therapy (OT)	OT only all outcomes	Relative (95% CI)	Absolute	Quality
Child health questionnaire (CHQ) - physical functioning - 3 months (Better indicated by higher values)											
3 studies (Boyd 2004; Russo 2007; Wallen 2007)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	56	54	-	MD 3.88 lower (15.48 lower to 7.72 higher)*	MODERATE

CHQ - physical functioning - 6 months (Better indicated by higher values)											
2 studies (Russo 2007; Wallen 2007)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	41	39	-	MD 0.28 higher (12.2 lower to 12.75 higher)*	MODERATE
CHQ - role emotional - 3 months (Better indicated by higher values)											
3 studies (Boyd 2004; Russo 2007; Wallen 2007)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	56	54	-	MD 12.98 higher (1.37 to 24.60 higher)*	MODERATE
CHQ - role emotional - 6 months (Better indicated by higher values)											
2 studies (Russo 2007; Wallen 2007)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	41	39	-	MD 7.28 higher (7.73 lower to 22.29 higher)	MODERATE
CHQ - role physical - 3 months (Better indicated by higher values)											
3 studies (Boyd 2004; Russo 2007; Wallen 2007)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	56	54	-	MD 8.76 higher (3.08 lower to 20.61 higher)	MODERATE
CHQ - role physical - 6 months (Better indicated by higher values)											
2 studies (Russo	randomised	no serious	no serious	no serious	serious[1]	none	41	39	-	MD 2.02 higher (13.98	MODERATE

2007; Wallen 2007)	trials	limitations	inconsistency	indirectness						lower to 18.02 higher)	

1 * Calculated by the NCC-WCH from data in Hoare 2010 Cochrane systematic review

2 1 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and is wide.

3 2 Total population less than 400, 95% confidence interval for mean difference does not cross null hypothesis but is wide

4

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Botulinum neurotoxin A (BoNT A)/ Occupational therapy (OT)**	**OT only all outcomes**	**Relative (95% CI)**	**Absolute**	**Quality**
Canadian occupational performance measure (COPM)Satisfaction (change from baseline) Three months (Better indicated by higher values)											
3 studies (Boyd 2004; Lowe 2006; Wallen 2007)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	56	63	-	MD 0.81 higher (0.17 to 1.46 higher) †	MODERATE
COPM Satisfaction (change from baseline) Four months (Better indicated by higher values)											
1 study (Greaves 2004)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	10	10	-	MD 0.76 higher (0.92 lower to 2.44 higher) †	MODERATE
COPM Satisfaction (change from baseline) Six months (Better indicated by higher values)											
2 studies (Lowe	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	41	38	-	MD 0.35 higher (0.39 lower to	MODERATE

2006; Wallen 2007)										1.08 higher) †	
COPM Satisfaction (change from baseline) Cycle 1 (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	11	11	-	MD 1.2 higher (0.15 to 2.25 higher)*	MODERATE
COPM Satisfaction (change from baseline) Cycle 2 (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	11	11	-	MD 1.2 higher (0.15 to 2.25 higher)*	MODERATE
COPM Satisfaction (change from baseline) Cycle 3 (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	11	11	-	MD 1.4 higher (0.35 to 2.45 higher)*	MODERATE
COPM Satisfaction(change from baseline) over whole year (Better indicated by higher values)											
1 study (Olesch 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	11	11	-	MD 0.8 higher (0.11 to 1.49 higher)*	MODERATE

* Calculated by the NCC-WCH

† Data from Hoare 2010 Cochrane systematic review

1 Total population less than 400, 95% confidence interval for mean difference does not cross null hypothesis but is wide

2 Total population less than 400, 95% confidence interval for mean difference crosses null hypothesis and is wide.

Quality assessment	**Summary of findings**		
	No. of patients	**Effect**	**Quality**

No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Botulinum neurotoxin A (BoNT A)/ Occupational therapy (OT)	OT only all outcomes	Relative (95% CI)	Absolute	
Parental perception "did the parent feel that the BoNT injection had been of benefit to the child?" Three months											
1 study (Reddishough 2002)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	-	-	-	-	LOW
Parental perception "did the parent feel that the BoNT injection had been of benefit to the child?" Six months											
1 study (Reddishough 2002)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[3]	none	-	-	-	-	LOW

1 No allocation concealment.

2 statistically significantly more positive responses to the question at 3 months ($\chi 2 = 12.0$, $p<0.05$) 95% confidence interval not calculable. 36 of 47 parents rated the benefit as good, very good or excellent. Of 33 parents who noticed a benefit with BoNT treatment, 26 reported the maximum benefit occurring within 6 weeks of the injection. The remainder (7 parents) reported the maximum benefit occurring 6-12 weeks post-injection

3 statistically significantly more positive responses to the question at 6 months ($\chi 2 = 7.16$, $p<0.05$) 95% confidence interval not calculable. 35 of 43 parents at 6 months rated the benefit as good, very good or excellent. Of 35 parents who noticed a benefit with BoNT treatment, 23 reported the maximum benefit occurring within 1-2months of the injection, 5 reported maximum benefit at 2 to 3 months and the remainder (7 parents) reported the maximum benefit occurring 3 to 6 months post-injection

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Botulinum neurotoxin A (BoNT A)/ Occupational therapy (OT)	OT only all outcomes	Relative (95% CI)	Absolute	Quality
Adverse effects											

1 study (Hoare 2010)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	-	-	-	-	LOW
1 study (Olesch 2010)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	11	11	-	-	LOW

1 95% confidence interval not calculable. No adverse effects were reported in 2 studies (Greaves 2005: Speth 2005). No major adverse events reported in Boyd 2004 although three children were noted to have decreased extension of the index finger that resolved by 6 weeks. There were 31 adverse events reported by 15 participants and no between-group difference in Lowe 2006. There were 29 adverse events reported by 20 participants over six months in Russo 2007. Three of these events involved hospitalisation for seizures in known epileptic children, and one child had 3 hospitalisations for medical reasons. Excessive weakness in the injected limb (reported as a minor adverse effect) was reported in 5 children and was prolonged in 2 children. In the Wallen 2007 RCT, there 5 adverse events reported in the BoNT and therapy group and four adverse events in the therapy only group.

2 Three adverse events were reported in BoNT/OT group of the Olesch 2010 trial - One child with a maculopapular rash (immunological test to consider if response to BoNT inconclusive), one child with weakness in index finger after BoNT administration into adductor pollicis. Both these adverse events resolved spontaneously and the children continued with treatment. One child with prolonged weakness in the finger flexors did not receive any further BoNT injections at this site, but completed the study with respect to other muscle groups.

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Botulinum neurotoxin A (BoNT A)/ Occupational therapy (OT)**	**OT only all outcomes**	**Relative (95% CI)**	**Absolute**	**Quality**
Parental response "did the child experience some form of complication or side effect from the BoNT?" Three months											
1 study (Reddishough 2002)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	-	-	-	-	LOW
Parental response "did the child experience some form of complication or side effect from the BoNT?" Six months											
1 study (Reddishough	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[3]	none	-	-	-	-	LOW

2002)											
Parental response "did the child experience any pain in their legs following injection?" Three months											
1 study (Reddishough 2002)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[4]	none	-	-	-	-	LOW
Parental response "did the child experience any pain in their legs following injection?" Six months											
1 study (Reddishough 2002)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[5]	none	-	-	-	-	LOW
Adverse effects: reported by parent											
1 study (Ackman 2005)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[6]	none	1/12	0/13	-	-	LOW

1 No allocation concealment. Serious attrition for many outcomes. 49 participants recruited

2 95% confidence interval not calculable.4 of 21 parents agreed that their child had experienced a complication/side effect. Those reported were some level of incontinence, short term muscle weakness and less specific complaints of the child being "out of sorts" and "a little sick and sore"

3 95% confidence interval not calculable.6 of 23 parents at 6 months agreed that their child had experienced a complication/side effect. Those reported were some level of incontinence, short term muscle weakness and less specific complaints of the child being "out of sorts" and "a little sick and sore".

4 95% confidence interval not calculable 7 of 23 parents at 3 months recalled their child having experienced pain

5 95% confidence interval not calculable 4 of 23 parents at 6 months recalled their child having experienced pain

6 95% confidence interval not calculable. One family whose child was in the BoNT and physical therapy group reported that their child fell more often immediately after treatment, although this resolved within 1 to 2 weeks. There were no pressure sores or injuries associated with the casts or their removal in either group and no casts were removed early.

Quality assessment	**Summary of findings**		
	No. of patients	**Effect**	**Quality**

No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Botulinum neurotoxin (BoNT) / Occupational therapy (OT) every 4 months	BoNT /OT every 12 months	Relative (95% CI)	Absolute	
Worse leg ankle dorsiflexion (knee extension) PROM at 12 months (mean change from baseline) (Better indicated by lower values)											
1 study (Kanovsky 2009)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious [2]	none	110[3]	104[4]	-	MD 2 higher*	LOW
Worse leg ankle dorsiflexion (knee extension) PROM at 28 months (mean change from baseline) (Better indicated by lower values)											
1 study (Kanovsky 2009)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	110[5]	104[6]	-	MD 2.5 higher*	LOW

* Calculated by the NCC-WCH

1 ITT analysis performed. Data imputed for 17% children on each treatment arm who did not complete study. It is unclear when these children left the study and how much data was imputed. Results as reported in narrative. No data extracted from graph.

2 Total population less than 400, 95% confidence interval of mean difference of change not calculable

3 Mean change from baseline = -1

4 Mean change from baseline = -3

5 Mean change from baseline = -1.5

6 Mean change from baseline = -4

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Botulinum neurotoxin (BoNT) 4 months	BoNT yearly	Relative (95% CI)	Absolute	Quality

Gross motor function measure (GMFM)Overall score - Median change from baseline at month 28 (Better indicated by higher score)											
1 study (Kanovsky 2009)	randomised trials	serious limitations[1]	no serious inconsistency	no serious indirectness	serious imprecision[2]		110[3]	104[4]		2.7 higher	LOW
GMFM Goal total score - Median change from baseline at month 28 (Better indicated by higher score)											
1 study (Kanovsky 2009)	randomised trials	serious limitations[1]	no serious inconsistency	no serious indirectness	serious imprecision[2]		110[5]	104[6]		2.4 higher	LOW

1 Intention to treat (ITT) analysis performed. Data inputted for 17% children on each treatment arm who did not complete study. It is unclear when these children left the study and how much data was imputed. Results as reported in narrative. No data extracted from graph.

2 Total population less than 400, 95% confidence interval of mean difference of change not calculable. p=NS reported

3 Median change from baseline = 8.6

4 Mean change from baseline = 5.9

5 Mean change from baseline = -12.3

6 Mean change from baseline = 9

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Botulinum neurotoxin (BoNT) 4 months**	**BoNT yearly**	**Relative (95% CI)**	**Absolute**	**Quality**
Proportion of children experiencing adverse effects at month 28											
1 study (Kanovsky 2009)	randomised trials	serious [1]	no serious inconsistency	no serious indirectness	serious[2]		89/110 (81%)	88/104 (85%)	-	3 fewer per 100 (from 14 fewer to 6 more)*	LOW

Proportion of children experiencing infection at month 28											
1 study (Kanovsky 2009)	randomised trials	serious [1]	no serious inconsistency	no serious indirectness	serious[2]		17/110 (15%)	18/104 (17%)	-	2 fewer per 100 (from 12 fewer to 8 more)*	LOW
Proportion of children experiencing weakness at month 28											
1 study (Kanovsky 2009)	randomised trials	serious [1]	no serious inconsistency	no serious indirectness	serious[2]		15/110 (14%)	15/104 (14%)	-	1 fewer per 100 (from 10 fewer to 9 more)*	LOW
Proportion of children experiencing increased cough at month 28											
1 study (Kanovsky 2009)	randomised trials	serious [1]	no serious inconsistency	no serious indirectness	serious[2]		15/110 (14%)	11/104 (11%)	-	3 more per 100 (from 6 fewer to 12 more) *	LOW
Proportion of children experiencing convulsions at month 28											
1 study (Kanovsky 2009)	randomised trials	serious [3]	no serious inconsistency	no serious indirectness	serious[4]		6/110 (5%)	14/104 (13%)	-	8 fewer per 100 (from 16 fewer to 0 more)*	MODERATE
Proportion of children developing neutralising antibodies at month 28											
1 study (Kanovsky 2009)	randomised trials	serious [1]	no serious inconsistency	no serious indirectness	serious[2]		4/109 (3.7%)[5]	1/103 (1%)[5]	-	3 more per 100 *	LOW

Proportion of children experiencing pain at month 28											
1 study (Kanovsky 2009)	randomised trials	serious [1]	no serious inconsistency	no serious indirectness	serious[2]		19/110 (17%)	22/104 (21%)	-	4 fewer per 100*	LOW

1 1 Intention to treat (ITT) analysis performed. Data inputted for 17% children on each treatment arm who did not complete study. It is unclear when these children left the study and how much data
2 was imputed.
3 2 Total population less than 400, 95% confidence interval crosses null hypothesis and is wide. p= no statistically significant difference
4 3 ITT analysis performed. Data inputted for 17% children on each treatment arm who did not complete study. It is unclear when these children left the study and how much data was inputted.4/6
5 participants in the 4 monthly group and 10/14 participants in the yearly group had a history of epilepsy, epileptic syndrome, partial epilepsy or febrile convulsions at baseline
6 4 Total population less than 400, 95% confidence interval crosses null hypothesis and is wide. p = 0.044
7 5 Neutralising antibodies: Two patients were noted to have neutralising antibodies at entry to the study. A further 5 patients (2%) in total developed neutralising antibodies over the 2 year study
8 period (4 monthly group = 4/110 and annual group = 1/104). In six patients the levels of antibodies were low or low-intermediate. In one patient 4 monthly group) the levels of antibodies were high
9 although no contractures developed during the 28 month follow up and global assessments of efficacy (as subjectively assessed by physician and parent/guardian) indicated improvement.

10

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Electrical stimulation (ES) and physiotherapy**	**Palpation and physiotherapy**	**Relative (95% CI)**	**Absolute**	**Quality**
Change in Modified Ashworth Scale at 3 months from baseline (Better indicated by lower values)											
1 study (Xu 2009)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	23[2]	22[3]	-	MD = 0.5 (0.74 to 0.26) lower*	MODERATE
Change in passive range of movement at 3 months from baseline, degrees (Better indicated by higher values)											
1 study	randomised	no serious	no serious	no serious	serious[1]	none	23[4]	22[5]	-	MD = 3.8 (0.79 to	MODERATE

(Xu 2009)	trials	limitations	inconsistency	indirectness						6.81) higher*	

* Calculated by the NCC-WCH

1 Total population less than 400, 95% confidence interval for mean difference does not cross null hypothesis but is wide

2 Mean change ± SD = -1.9 ± 0.3

3 Mean change ± SD = -1.4 ± 0.5

4 Mean change ± SD = 20.0 ± 5.2

5 Mean change ± SD = 16.2 ± 5.1

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Electrical stimulation (ES) and physiotherapy**	**Palpation and physiotherapy**	**Relative (95% CI)**	**Absolute**	**Quality**
Change in Gross Motor Function Measure (D and E) at 3 months from baseline (Better indicated by higher values)											
1 study (Xu 2009)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	23[1]	22[2]	-	MD = 7.3 (5.5 to 9.10) higher*	HIGH
Change in walking velocity at 3 months from baseline, m/s (Better indicated by higher values)											
1 study (Xu 2009)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	23[3]	22[4]	-	MD = 0.07 (0.04 to 0.10) higher*	HIGH

* Calculated by the NCC-WCH

1 Mean change ± SD = 8.6 ± 4.0

2 Mean change ± SD = 11.3 ± 1.8

3 Mean change ± SD = 0.15 ± 0.06

4 Mean change ± SD = 0.08 ± 0.04

Quality assessment							Summary of findings				
							No. of patients		Effect		Quality
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Ultrasound (US) group	Electrical simulation (ES) group	Relative (95% CI)	Absolute	
Change in Modified Ashworth Scale (with knee extended) at 3 months from baseline (Better indicated by lower values)											
1 study (Kwon 2010)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	14[3]	16[3]	-	-	LOW
Change in Modified Ashworth Scale (with knee flexed) at 3 months from baseline (Better indicated by lower values)											
1 study (Kwon 2010)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[4]	none	14[3]	16[3]	-	-	LOW

1 Inadequate randomisation - alternate patient allocation to treatment

2 Total population less than 400, 95% confidence interval not calculable, no significant difference between groups reported by authors p = 0.68

3 Mean change scores not reported

4 Total population less than 400, 95% confidence interval not calculable, no significant difference between groups reported by authors p = 0.98 reported

Quality assessment							Summary of findings				
							No. of patients		Effect		Quality
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Ultrasound (US) group	Electrical simulation (ES) group	Relative (95% CI)	Absolute	
Change in physician's rating scale (speed of gait) at 3 months from baseline, m/s (Better indicated by higher values)											
1 study (Kwon	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	14[3]	16[3]	-	-	LOW

2010)											

1 Inadequate randomisation - alternate patient allocation to treatment

2 Total population less than 400, 95% confidence interval not calculable, significant difference between groups reported by authors p = 0.02

3 Mean change scores not reported

Chapter 8 Intrathecal baclofen

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Intrathecal baclofen testing (ITB-T)	Placebo	Relative (95% CI)	Absolute (95% CI)	Quality
Ashworth scores 2, 4, and 6 hours after start of test treatment (Better indicated by lower values)											
1 study (Hoving 2007)	randomised trials	serious[1]	no serious inconsistency	serious[2]	serious[3]	none	17[4]	17[4]	-[5]	-[5]	VERY LOW
Ashworth scores 12 months after continuous pump-administered intrathecal baclofen (CITB) pump implantation (Better indicated by lower values)											
1 study (Hoving 2009b)	observational study	serious[1]	no serious inconsistency	serious[2]	serious[3]	none	17[6]	0	-[5]	-[5]	VERY LOW
Ashworth scores when receiving test treatment with baclofen 50 µg dose (Better indicated by lower values)											
1 study (Gilmartin 2000)	randomised trials	no serious limitations	no serious inconsistency	serious[7]	serious[3]	none	5[1]	5[1]	-	-[8]	LOW
Ashworth scores when receiving test treatment with baclofen 75 µg dose											
1 study (Gilmartin 2000)	randomised trials	serious[1]	no serious inconsistency	serious[7]	serious[3]	none	10[9]	0	-[5]	-[5]	VERY LOW

Ashworth scores 6 months after CITB pump implantation											
1 study (Gilmartin 2000)	randomised trials	serious[10]	no serious inconsistency	serious[7]	serious[3]	none	42[11]	0	-[5]	-[5]	VERY LOW
Ashworth scores 12 months after CITB pump implantation											
1 study (Gilmartin 2000)	randomised trials	serious[10]	no serious inconsistency	serious[7]	serious[3]	none	40[12]	0	-[5]	-[5]	VERY LOW
Ashworth scores 24 months after CITB pump implantation											
1 study (Gilmartin 2000)	randomised trials	serious[13]	no serious inconsistency	serious[7]	serious[3]	none	33[14]	0	-[5]	-[5]	VERY LOW

1 Pre-post treatment data

2 Ashworth scores were derived from bilateral assessment in seven lower-extremity muscle groups - hip adductors, flexors and extensors; knee flexors and extensors; and ankle plantarflexors and dorsiflexors. Assessments and scores made every day before bolus administration (baseline) of random dose of baclofen 25µg-100 µg or placebo and 2, 4, and 6 hours afterward by the same experienced paediatric physiotherapist.

3 Total population less than 400, 95% confidence interval not calculable

4 After ITB administration the Ashworth scores, significantly decreased in comparison with baseline for all muscle groups ($0.001 \leq p \leq 0.040$), except for the left hip flexors 2 hours ($p=0.080$). Ashworth scores after placebo did not change significantly in any muscle group at any test point ($0.083 \leq p \leq 1.000$) (MODERATE).

5 No statistical comparison was given across groups

6 At 12 months after CITB pump implantation (Hoving 2009b). The Ashworth score decreased significantly in 9/14 lower-extremity muscle groups ($0.002 \leq p \leq 0.046$).

7 Ashworth scores were derived from bilateral assessment in 4 lower-extremity muscle groups - hip abductors, knee flexors and extensors; and foot dorsiflexors) 4 hours after a single dose of 50µg ITB/placebo bolus was delivered.

8 When receiving 50µg baclofen patients had a statistically significant reduction in the mean Ashworth scores as compared to when they received placebo (mean, SD; SE; range) (n=51): baclofen: 2.14 (0.85); 0.12 (1.00 to 4.75) vs. placebo: 3.11 (0.69); 0.14 (1.75 to 5.00); $p<0.001$).

9 When receiving 75 µg baclofen patients had a statistically significant reduction in the mean Ashworth scores as compared to baseline (baclofen: 2.04 (0.67); 0.21 (1.37 to 3.50) vs. baseline: 3.31 (0.60);0.19 (2.00 to 4.00); $p<0.001$).

10 Pre- post treatment data. Of the 51 patients who took part in testing, 44 proceeded with pump placement. Baseline data were assessed (as above) within 2 weeks of implantation. 7/44 subsequently withdrew for the following reasons: 2 infection in the pump site (n=2); "family issues" (n=2); wished to become pregnant (n=1); died in motor vehicle accident (n-1); died from pneumonia (n=1).

11 When receiving CITB baclofen patients had a statistically significant reduction in the mean Ashworth scores as compared to baseline at 6 months (n=42): 2.33 (0.64); (1.0 to 3.8)

12 When receiving CITB baclofen patients had a statistically significant reduction in the mean Ashworth scores as compared to baseline at 12 months (n=40): 2.15 (0.60); (1.1 to 3.3);

13 Pre post treatment data of the 51 patients who took part in testing, 44 proceeded with pump placement. Baseline data were assessed (as above) within 2 weeks of implantation. Results for 11/44 (25% attrition) patients are missing.

14 When receiving CITB baclofen patients had a statistically significant reduction in the mean Ashworth scores as compared to baseline at 24 months (n=33): 2.21 (0.75); (1.0 to 3.5)

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Intrathecal baclofen testing (ITB-T)	Placebo	Relative (95% CI)	Absolute (95% CI)	Quality
Ashworth scores when receiving test treatment with baclofen 50 µg dose (Better indicated by lower values)											
1 study (Gilmartin 2000)	randomised trials	serious [1]	no serious inconsistency	serious[2]	serious[3]	none	5[1]	0	-[5]	-[5]	VERY LOW
Ashworth scores 6 months after continuous pump-administered intrathecal baclofen CITB pump implantation											
1 study (Gilmartin 2000)	randomised trials	serious[6]	no serious inconsistency	serious	serious	none	42[7]	0	-[5]	-[5]	VERY LOW
Ashworth scores 12 months after CITB pump implantation											
1 study (Gilmartin 2000)	randomised trials	serious[6]	no serious inconsistency	serious	serious	none	40[8]	0	-[5]	-[5]	VERY LOW
Ashworth scores 24 months after CITB pump implantation											
1 study (Gilmartin 2000)	randomised trials	serious[9]	no serious inconsistency	serious	serious	none	33[10]	0	-[5]	-[5]	VERY LOW

1 Pre-post treatment data. Ashworth scores are not reported for the placebo phase.

2 Unvalidated outcome assessment. Ashworth scores were assessed bilaterally in the upper extremities (specific muscles not described) 4 hours after a single dose of 50µg ITB/placebo bolus was delivered.

3 Total population less than 400, 95% confidence interval not calculable

4 After ITB the Ashworth scores, significantly decreased in comparison with baseline ((mean, SD; range) (n=51): baclofen: 1.92 (0.80); (1.0 to 4.4) vs. baseline: 2.21 (0.80); (1.0 to 4.5); p<0.001).

5 No statistical comparison was given across groups

6 Pre-post treatment data. Of the 51 patients who took part in testing, 44 proceeded with pump placement. Baseline data were assessed (as above) within 2 weeks of implantation. 7/44 subsequently withdrew for the following reasons: 2 infection in the pump site (n=2); "family issues" (n=2); wished to become pregnant (n=1); died in motor vehicle accident (n-1); died from pneumonia (n=1).

7 When receiving CITB baclofen patients had a statistically significant reduction in the mean Ashworth scores as compared to baseline at 6 months after implantation (n=41): 1.80 (0.72); (1.0 to 3.8)

8 When receiving CITB baclofen patients had a statistically significant reduction in the mean Ashworth scores as compared to baseline at 12 months after implantation(n=40): 1.73 (0.66); (1.0 to 4.1)

9 Pre post treatment data Of the 51 patients who took part in testing, 44 proceeded with pump placement. Baseline data were assessed (as above) within 2 weeks of implantation. Results for 12/44 patients (27% attrition) at 24 months follow up are missing.

10 When receiving CITB baclofen patients had a statistically significant reduction in the mean Ashworth scores as compared to baseline at 24 months after implantation(n=32): 1.72 (0.69); (1.0 to 3.1)

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Intrathecal baclofen testing (ITB-T)	Placebo	Relative (95% CI)	Absolute (95% CI)	Quality
Ashworth scores when receiving test treatment with baclofen 50 µg dose (Better indicated by lower values)											
1 study (Awaad 2003)	observational study	serious [1]	no serious inconsistency	serious[2]	serious[3]	none	28[4]	0	-[5]	-[5]	VERY LOW
Ashworth scores 12 months after CITB pump implantation											
1 study (Awaad 2003)	observational study	serious[6]	no serious inconsistency	serious[2]	serious[3]	none	7	0	-[5]	-[5]	VERY LOW

1 Pre-post treatment data

2 Unvalidated outcome assessment. Ashworth scores for seven lower-extremity muscle groups (hip adductors, abductors, and flexors; knee flexors and extensors; and ankle dorsiflexors and plantarflexors) and four upper extremity muscle groups (wrist and elbow flexors and extensors) were averaged as one combined score every 2 hours after the injection (total number of scores not stated). Scores were assessed by physical and occupational therapists.

3 Total population less than 400, 95% confidence interval not calculable

4 After ITB-T, the Ashworth scores significantly decreased in comparison with baseline before ITB-T (n=28) (mean, SD) before trial: 3.19 (0.56), after trial: 1.34 (0.50), change: -1.85 (0.51); P<0.001).

5 No statistical comparison was given across groups

6 Pre-post treatment data. It is not possible to determine exactly how many children were included in the pre and post treatment samples.

7 When receiving CITB baclofen, patients had a statistically significant reduction in the mean Ashworth scores at 12 months after implantation as compared to baseline at 12 months after implantation (mean (SD): Ashworth score: 1.76 (0.64), change: -1.49 (0.69); P<0.001).

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Intrathecal baclofen testing (ITB-T)	Placebo	Relative (95% CI)	Absolute (95% CI)	Quality
Ease of care: Mean Visual Analogue Scale (VAS) rated once before the test treatment started (baseline) and at the end of each test day (better indicated by higher values)											
1 study (Hoving 2007)	randomised trial	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	14[1]	13[2]	-	MD 4.20 (2.68 higher to 5.72 higher)*	HIGH
Ease of care: Mean Visual Analogue Scale (VAS) at 6 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[3]	no serious inconsistency	no serious indirectness	serious[4]	none	17[5]	0	-[6]	-[6]	VERY LOW
Ease of care: Mean Visual Analogue Scale (VAS) at 12 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[3]	no serious inconsistency	no serious indirectness	serious[4]	none	17[7]	0	-[6]	-[6]	VERY LOW

* Calculated by the NCC-WCH

1 Mean 5.1 SD (2.1) p=0.001 compared to baseline.

2 Mean 0.9 SD (1.7) p=0.093 compared to baseline.

3 Pre-post treatment data. Baseline data for n=17 Mean change data for n=16

4 Total population less than 400, 95% confidence interval not calculable

5 Mean 4.4 SD (2.1) p=0.000

6 No statistical comparison was given across groups

7 Mean 5.2 SD (2.1) p=0.000

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Intrathecal baclofen testing (ITB-T)	Placebo	Relative (95% CI)	Absolute (95% CI)	Quality
Mean Visual Analogue Scale (VAS) at 6 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	17[3]	0	-[4]	-[4]	VERY LOW
Mean Visual Analogue Scale (VAS) at 12 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	17[5]	0	-[4]	-[4]	VERY LOW

1 Pre-post treatment data

2 Total population less than 400, 95% confidence interval not calculable

3 Mean 4.1 SD (2.1) p=0.000 compared to baseline.

4 No statistical comparison was given across groups

5 Mean 4.7 SD (2.0) p=0.000 compared to baseline.

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Intrathecal baclofen testing (ITB-T)	Placebo	Relative (95% CI)	Absolute (95% CI)	Quality

Mean Visual Analogue Scale (VAS) rated once before the test treatment started (baseline) and at the end of each test day (better indicated by higher values)											
1 study (Hoving 2007)	randomised trial	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	11[3]	10[4]	-	MD 2.2 (0.72 lower to 5.12 higher)*	LOW
Mean Visual Analogue Scale (VAS) at 6 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[2]	none	17[6]	0	-[7]	-[7]	VERY LOW
Mean Visual Analogue Scale (VAS) at 12 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[8]	no serious inconsistency	no serious indirectness	serious[2]	none	17[9]	0	-[7]	-[7]	VERY LOW

* Calculated by the NCC-WCH

1 At least 41% patients with no available outcome data (low CSF pressure)

2 Total population less than 400, 95% confidence interval not calculable

3 Mean change 3.3 SD (2.9) p=0.010 compared to baseline

4 Mean change 1.1 SD (3.5) p=0.262 compared to baseline (not statistically significant)

5 Pre-post treatment data. Baseline data for n=17 Mean change data for n=16

6 Mean 4.5 SD (2.6) p=0.002

7 No statistical comparison was given across groups

8 Pre-post treatment data. Baseline data for n=17 Mean change data for n=12 (29% patients with no available outcome data)

9 Mean 5.4 SD (2.7) p=0.002

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Intrathecal baclofen testing (ITB-T)**	**Placebo**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**
Drug related adverse effects during ITB-T											

1 study (Hoving 2007)	randomised trial	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	8/17[2]	0/17[3]	-	-	MODERATE
Procedure related adverse effects during ITB-T											
1 study (Hoving 2007)	randomised trial	serious[4]	no serious inconsistency	no serious indirectness	serious[1]	none	-[5]	-	-	-	LOW
Adverse events during ITB-T											
1 study (Gilmartin 2000)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	-[6]	-[7]	-	-	VERY LOW
1 study (Awaad 2003)	observational study	serious[8]	no serious inconsistency	no serious indirectness	serious[2]	none	-	-	-	-[8]	VERY LOW

1 Total population less than 400, 95% confidence interval not calculable

2 Eight children experienced nine adverse effects associated with intrathecal baclofen during the testing (see Table M.1 - note e).

3 No adverse effects were noted with placebo

4 Descriptive data from all children within the group

5 Sixteen children were affected by a total number of nineteen complications related to the procedure (see Table M.1 note g). None of these symptoms were observed in three children in whom the neurosurgeon had tunnelled the catheter subcutaneously for a few centimetres.

6 During the testing phase of the American study (Gilmartin 2000) reported twenty nine adverse effects, affecting eighteen patients (the respective numbers of children and adults is unclear) (see Table M.1 - note f). Twenty two adverse effects occurred during the intrathecal baclofen period and affected fourteen patients.

7 Seven adverse effects occurred during the placebo period and affected four patients.

8 No adverse effects reported during the ITB testing phase; but it is not clear that this was recorded, so it cannot be assumed that no adverse effects occurred.

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Continuous pump-adminstered intrathecal**	**Standard treatment**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**

							baclofen therapy (CITB) and standard treatment				
Ashworth scores 6 months after CITB pump implantation (better indicated by lower values)											
1 study (Hoving 2009a)	randomised trials	no serious limitations	no serious inconsistency	serious[1]	serious[2]	none	9[3]	8[3]	-	-	LOW
Ashworth scores 12 months after CITB pump implantation (better indicated by lower values)											
1 study (Hoving 2009b)	observational study	serious[4]	no serious inconsistency	serious[1]	serious[2]	none	17[5]	0	-[6]	-[6]	VERY LOW
Ashworth scores 6 months after CITB pump implantation											
1 study (Gilmartin 2000)	randomised trials	serious[7]	no serious inconsistency	serious[8]	serious[2]	none	42[9]	0	-[6]	-[6]	VERY LOW
Ashworth scores 12 months after CITB pump implantation											
1 study (Gilmartin 2000)	randomised trials	serious[10]	no serious inconsistency	serious[8]	serious[2]	none	40[10]	0	-[6]	-[6]	VERY LOW
Ashworth scores 24 months after CITB pump implantation											
1 study (Gilmartin 2000)	randomised trials	serious[11]	no serious inconsistency	serious[8]	serious[2]	none	33[12]	0	-[6]	-[6]	VERY LOW

1 1 After 6 months Ashworth scores were assessed bilaterally in 7 lower-extremity muscle groups (hip adductors, flexors and extensors; knee flexors and extensors; and ankle plantarflexors and
2 dorsiflexors). Scores of the total 14 muscles were separately analysed. Scores were determined by an experienced paediatric physiotherapist, and for each individual the scores were rated on every
3 occasion by the same physiotherapist.
4 2 Total population less than 400, 95% confidence interval not calculable
5 3 The 6-month score change score differed significantly in favour of the CITB group for the left hip adductors (p=0.0025) and for both hip flexors (right p=0.022; left p=0.043) but there were no
6 significant differences for any of the other muscle groups.

4 Pre and post treatment data
5 At 12 months after CITB pump implantation (Hoving 2009b). The Ashworth score decreased significantly in 9/14 lower-extremity muscle groups ($0.002 \leq p \leq 0.046$). The actual scores were not reported.
6 No statistical comparison was given across groups
7 Pre-post treatment data. Of the 51 patients who took part in testing, 44 proceeded with pump placement. Baseline data were assessed (as above) within 2 weeks of implantation. 7/44 subsequently withdrew for the following reasons: 2 infection in the pump site (n=2); "family issues" (n=2); wished to become pregnant (n=1); died in motor vehicle accident (n-1); died from pneumonia (n=1).
8 Ashworth scores were derived from bilateral assessment in 4 lower-extremity muscle groups - hip abductors, knee flexors and extensors; and foot dorsiflexors)
9 When receiving CITB baclofen patients had a reduction in the mean Ashworth scores as compared to baseline (n=44) (mean, SD; range) 3.64 (0.57); (3.0 to 5.0) at 6 months (n=42): (mean, SD; range) 2.33 (0.64); (1.0 to 3.8)
10 When receiving CITB baclofen patients had a significant reduction in the mean Ashworth scores as compared to baseline (n=44) (mean, SD; range) 3.64 (0.57); (3.0 to 5.0) at 12 months (n=40): (mean, SD; range) 2.15 (0.60); (1.1 to 3.3);
11 Pre post treatment data of the 51 patients who took part in testing, 44 proceeded with pump placement. Baseline data were assessed (as above) within 2 weeks of implantation. Results for 11/44 (25% attrition) patients are missing.
12 When receiving CITB baclofen patients had a significant reduction in the mean Ashworth scores as compared to baseline (n=44) (mean, SD; range) 3.64 (0.57); (3.0 to 5.0) at 24 months (n=33): (mean, SD; range) 2.21 (0.75); (1.0 to 3.5)

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Continuous pump-adminstered intrathecal baclofen therapy (CITB)**	**Placebo**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**
Ashworth scores 6 months after CITB pump implantation (Better indicated by lower values)											
1 study (Hoving 2009a)	randomised trials	serious[1]	no serious inconsistency	serious[2]	serious[3]	none	9	8	-[4]	-[4]	VERY LOW
Ashworth scores 12 months after CITB pump implantation (Better indicated by lower values)											
1 study	observational	serious[5]	no serious	serious[2]	serious[3]	none	17[6]	0	-[7]	-[7]	VERY

(Hoving 2009b)	study		inconsistency								LOW
Ashworth scores 6 months after CITB pump implantation											
1 study (Gilmartin 2000)	randomised trials	serious[5]	no serious inconsistency	serious[2]	serious[3]	none	41[8]	0	-[7]	-[7]	VERY LOW
Ashworth scores 12 months after CITB pump implantation											
1 study (Gilmartin 2000)	randomised trials	serious[5]	no serious inconsistency	serious[2]	serious[3]	none	40[9]	0	-[7]	-[7]	VERY LOW
Ashworth scores 24 months after CITB pump implantation											
1 study (Gilmartin 2000)	randomised trials	serious[10]	no serious inconsistency	serious[2]	serious[3]	none	32[11]	0	-[7]	-[7]	VERY LOW

1 Pre and post treatment data. Ashworth scores are not reported for the placebo phase.

2 Ashworth scores were bilaterally assessed in 4 upper extremity muscle groups (elbow and wrist flexors and extensors). Scores of the total 8 muscles were separately analysed. Scores were assessed by an experienced paediatric physiotherapist. For each child scores were always rated by the same physiotherapist.

3 Total population less than 400, 95% confidence interval not calculable

4 The 6-month-change score between both groups significantly differed in favour of the CITB group for the right wrist flexors (p=0.038). There were no significant differences for other muscle groups.

5 Pre and post treatment data.

6 The Ashworth score decreased significantly in 5/8 upper extremity muscle groups ($0.008 \leq p \leq 0.046$).

7 No statistical comparison was given across groups

8 When receiving CITB baclofen patients had a statistically significant reduction in the mean Ashworth scores as compared to baseline at 6 months after implantation (n=41): 1.80 (0.72); (1.0 to 3.8)

9 When receiving CITB baclofen patients had a statistically significant reduction in the mean Ashworth scores as compared to baseline at 12 months after implantation(n=40): 1.73 (0.66); (1.0 to 4.1)

10 Pre and post treatment data. Of the 51 patients who took part in testing, 44 proceeded with pump placement. Baseline data were assessed (as above) within 2 weeks of implantation. Results for 12/44 patients (27% attrition) at 24 months follow up are missing.

11 When receiving CITB baclofen patients had a statistically significant reduction in the mean Ashworth scores as compared to baseline at 24 months after implantation(n=32): 1.72 (0.69); (1.0 to 3.1)

Quality assessment	**Summary of findings**

							No. of patients		Effect		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Intrathecal baclofen therapy (CITB)**	**Placebo**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**
Ashworth scores 12 months after CITB pump implantation											
1 study (Awaad 2003)	observational study	serious [1]	no serious inconsistency	serious[2]	serious[3]	none	-[4]	0	-[5]	-[5]	VERY LOW

1 1 Pre-post treatment data. It is not possible to determine exactly how many children were included in the pre and post treatment samples.

2 2 Unvalidated outcome assessment. Ashworth scores for seven lower-extremity muscle groups (hip adductors, abductors, and flexors; knee flexors and extensors; and ankle dorsiflexors and

3 plantarflexors) and four upper extremity muscle groups (wrist and elbow flexors and extensors) were averaged as one combined score. Assessors were physician, nurse and/or physical therapist.

4 3 Total population less than 400, 95% confidence interval not calculable

5 4 When receiving CITB baclofen, patients had a statistically significant reduction in the mean Ashworth scores at 12 months after implantation as compared to baseline at 12 months after

6 implantation (mean, SD) : Ashworth score: 1.76 (0.64), change: -1.49 (0.69); P<0.001).

7 5 No statistical comparison was given across groups.

8

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Continuous pump-adminstered intrathecal baclofen therapy (CITB)**	**Placebo**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**
Overall Barry-Albright dsytonia scale (BAD) scores 12 months after CITB pump implantation (Better indicated by lower values)											
1 study (Motta 2008)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	19[3]		-[4]	-[4]	VERY LOW

Overall Burke-Fahn-Marsden scores 12 months after CITB pump implantation (Better indicated by lower values)											
1 study (Motta 2008)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	19[5]	0	-[4]	-[4]	VERY LOW

1 Pre and post treatment data

2 Total population less than 400, 95% confidence interval not calculable

3 Assessment was conducted pre-implant and at 12 months post-implant by the same team of 2 rehabilitation therapists and same orthopaedic physician. Overall BAD scores (mean, SD) significantly improved at 12 months when compared to baseline ((mean, SD) 12 months: 17.79 ± 3.3 vs. baseline: 23.84 ± 4.11; P<0.001). Individual BAD scores were not reported for each region, only p values for change. Dystonia significantly improved at 12 months when compared to baseline in all body regions assessed (eyes: <0.05; mouth: <0.01, neck: <0.001, upper limb R: <0.001, upper limb L: <0.001, trunk: <0.001, lower limb R: <0.01, lower limb L: <0.01).

4 No statistical comparison was given across groups

5 Overall BFM scores-movement components significantly improved at 12 months when compared to baseline ((mean, SD): 12 months: 77.60 ± 20.56 vs. baseline: 98.57 ± 13.07; p<0.001). Individual BFM scores- movement components were not reported for each region, only p values for change. Dystonia significantly improved at 12 months when compared to baseline in all body regions assessed except in the eyes and the language swallowing area (eyes: NS, mouth: <0.05, language-swallowing: NS, neck: <0.05, upper limb R: <0.05, upper limb L: <0.05, trunk: <0.001, lower limb R: <0.001, lower limb L: <0.001)

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Continuous pump-adminstered intrathecal baclofen therapy (CITB)	Usual care	Relative (95% CI)	Absolute (95% CI)	Quality
Mean Visual Analogue Scale (VAS) at 6 months after pump implantation (better indicated by higher values)											
1 study Hoving 2009a)	randomised trial	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	9[2]	8[3]	-[4]	-[4]	MODERATE
Mean Visual Analogue Scale (VAS) at 12 months after pump implantation (better indicated by higher values)											
1 study	observational	serious[1]	no serious	no serious	serious[2]	none	17[5]	0	-[6]	-[6]	VERY LOW

(Hoving 2009b)	study		inconsistency	indirectness							

1 Total population less than 400, 95% confidence interval not calculable
2 Mean 4.0 SD (1.7) p=0.001 compared to baseline.
3 Mean -0.2 SD (1.3) p=not stated compared to baseline
4 No statistical comparison was given across groups
5 Pre-post treatment data
6 Mean 4.7 SD (2.0)) p=0.000 compared to baseline.

7

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Continuous pump-adminstered intrathecal baclofen therapy (CITB)**	**Usual care**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**
Gross motor function measure (GMFM)-66 overall at 6 months (better indicated by higher values)											
1 study (Hoving 2009a)	randomised trial	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	7[2]	5[3]	-[4]	-[4]	MODERATE
GMFM-66 total score at 6 months (Ramstad 2010) (better indicated by higher values)											
1 study (Ramstad 2010)	observational study	serious [5]	no serious inconsistency	no serious indirectness	serious[1]	none	32[6]	0	-[4]	-[4]	VERY LOW
GMFM-66 general score at 12 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	12[7]	0	-[4]	-[4]	VERY LOW

GMFM-66 total score at 18 months (better indicated by higher values)											
1 study (Ramstad 2010)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	31[8]	0	-[4]	-[4]	VERY LOW
GMFM-88 (lying and rolling) at 6 months (better indicated by higher values)											
1 study (Hoving 2009a)	randomised trial	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	7[9]	5[10]	-	-[11]	MODERATE
GMFM 88 (lying and rolling) at 12 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	12[12]	0	-[4]	-[4]	VERY LOW
GMFM-88 (sitting) at 6 months (better indicated by higher values)											
1 study (Hoving 2009a)	randomised trial	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	7[13]	5[14]	-[4]	-[15]	MODERATE
GMFM 88 (sitting) at 12 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	12[16]	0	-[4]	-[4]	VERY LOW
GMFM-88 (goal dimension) at 6 months (better indicated by higher values)											
1 study (Hoving 2009a)	randomised trial	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	5[17]	4[18]	-[4]	-[19]	MODERATE
GMFM 88 (goal dimension) at 12 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	9[20]	0	-[4]	-[4]	VERY LOW
Paediatric evaluation of disability inventory (PEDI) functional skills (overall score) at 6 months (better indicated by higher values)											

1 study (Hoving 2009a)	randomised trial	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	9[21]	8[22]	-[4]	-[23]	MODERATE
PEDI functional skills (overall score) at 12 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	17[24]	0	-[4]	-[4]	VERY LOW
PEDI Functional Skills (self care score) at 6 months (better indicated by higher values)											
1 study (Ramstad 2010)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	28[25]	0	-[4]	-[4]	VERY LOW
PEDI Functional Skills (self care score) at 12 months after pump implantation (better indicated by higher values)											
1 study (Awaad 2003)	observational study	serious [5]	no serious inconsistency	no serious indirectness	serious[1]	none	28[26]	0	-[4]	-[4]	VERY LOW
PEDI Functional Skills (self care score) at 18 months (better indicated by higher values)											
1 study (Ramstad 2010)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	27[27]	0	-[4]	-[4]	VERY LOW
PEDI Functional Skills (mobility) at 6 months (better indicated by higher values)											
1 study (Ramstad 2010)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	27[28]	0	-[4]	-[4]	VERY LOW
PEDI Functional Skills (mobility) at 12 months after pump implantation (better indicated by higher values)											
1 study (Awaad 2003)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	28[29]	0	-[4]	-[4]	VERY LOW
PEDI Functional Skills (mobility) at 18 months (better indicated by higher values)											
1 study	observational	serious[5]	no serious	no serious	serious[1]	none	27[30]	0	-[4]	-[4]	VERY LOW

(Ramstad 2010)	study		inconsistency	indirectness							
PEDI Functional Skills (social function) at 6 months (better indicated by higher values)											
1 study (Ramstad 2010)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	27[31]	0	-[4]	-[4]	VERY LOW
PEDI Functional Skills (social function) at 12 months after pump implantation (better indicated by higher values											
1 study (Awaad 2003)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	28[32]	0	-[4]	-[4]	VERY LOW
PEDI Functional Skills (social function) at 18 months (better indicated by higher values)											
1 study (Ramstad 2010)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	27[33]	0	-[4]	-[4]	VERY LOW
PEDI caregiver assistance (overall score) at 6 months (better indicated by higher values)											
1 study (Hoving 2009a)	randomised trial	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	9[34]	8[35]	-[4]	-[36]	MODERATE
PEDI caregiver assistance (overall score) at 12 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	17[37]	0	-[4]	-[4]	VERY LOW
PEDI Caregiver assistance (self-care score) at 6 months (better indicated by higher values)											
1 study (Ramstad 2010)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	28[38]	0	-[4]	-[4]	VERY LOW
PEDI (caregiver assistance (self care score) at 12 months after pump implantation (better indicated by higher values)											
1 study (Awaad	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	28[39]	0	-[4]	-[4]	VERY LOW

2003)											
PEDI Caregiver assistance (self-care score) at 18 months (better indicated by higher values)											
1 study (Ramstad 2010)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	27[40]	0	-[4]	-[4]	VERY LOW
PEDI Caregiver assistance (mobility score) at 6 months (better indicated by higher values)											
1 study (Ramstad 2010)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	28[41]	0	-[4]	-[4]	VERY LOW
PEDI caregiver assistance (mobility score) at 12 months after pump implantation (better indicated by higher values)											
1 study (Awaad 2003)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	28[42]	0	-[4]	-[4]	VERY LOW
PEDI Caregiver assistance (mobility score) at 18 months (better indicated by higher values)											
1 study (Ramstad 2010)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	27[43]	0	-[4]	-[4]	VERY LOW
PEDI Caregiver assistance (social function score) at 6 months (better indicated by higher values)											
1 study (Ramstad 2010)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	28[44]	0	-[4]	-[4]	VERY LOW
PEDI caregiver assistance (social function score) at 12 months after pump implantation (better indicated by higher values)											
1 study (Awaad 2003)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	28[45]	0	-[4]	-[4]	VERY LOW
PEDI Caregiver assistance (social function score) at 18 months (better indicated by higher values)											
1 study (Ramstad 2010)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	26[46]	0	-[4]	-[4]	VERY LOW

1 Total population less than 400, 95% confidence interval not calculable
2 Mean 1.2 SD (2.3) p-value not stated compared to baseline
3 Mean -1.6 SD (3.0) p=0.028 compared to baseline
4 No statistical comparison was given across groups
5 Pre-post treatment data
6 Baseline median (range) = 22.7 (0-48.3) n=35, at 6 months = 22.0 (0.0 – 45.9) n=32, p=0.032 reported
7 Mean 1.6 SD (3.1) p=0.110 compared to baseline
8 Baseline median (range) = 22.7 (0-48.3) n=35, at 18 months = 24.0 (0.0 – 47.1) n=31, p=0.005 reported
9 Median 3.9 Range (-12.0 to 10.0) compared to baseline
10 Median 0.0 Range (-10.0 to 0.0) compared to baseline
11 p=0.512 (NS)
12 Median -1.0 Range (-25.0 to 11.0). No significant difference reported compared to baseline
13 Median 3.3 Range (0.0 to 10.0). p value not reported compared to baseline
14 Median 0.0 Range (-7.0 to 7.0) p value not reported compared to baseline
15 p=0.022
16 Median 3.3 Range (-4.0 to 22.0) p=0.022 compared to baseline
17 Median 3.0 Range (2.0 to 10.0) p value not reported compared to baseline
18 Median 1.3 Range (-6.0 to 6.0) p value not reported compared to baseline
19 p=NS reported
20 Median 4.0 Range (0.0 to 26.0) p=0.007
21 Median 0.0 Range (-7.4 to 5.7) p value not reported compared to baseline
22 22Median 0.0 Range (-5.4 to 2.1) p value not reported compared to baseline
23 p=NS reported
24 Median 0.0 Range (-15.0 to 15.8) No significant difference reported compared to baseline
25 Baseline median (range) = 33.6 (0-58.6) n=32, at 6 months = 33.0 (0.0 – 61.8) n=28, p=0.246 reported
26 Mean 6.36 SD (7.99) p=0.005
27 Baseline median (range) = 33.6 (0-58.6) n=32, at 18 months = 36.0 (0.0 – 73.6) n=28, p=0.027 reported
28 Baseline median (range) = 23.2 (0-53.1) n=32, at 6 months = 20.9 (0.0 – 48.8) n=27, p=0.285 reported
29 26 Mean 2.88 SD (8.08) No significant difference reported compared to baseline
30 Baseline median (range) = 23.2 (0-53.1) n=32, at 18 months = 35.9 (0.0 – 54.8) n=27, p=0.017 reported
31 Baseline median (range) = 57.9 (0-96.3) n=31, at 6 months = 59.2 (0.0 – 96.3) n=27, p=0.041 reported
32 27 Mean 5.96 SD (10.35) No significant difference reported compared to baseline
33 Baseline median (range) = 57.9 (0-96.3) n=31, at 18 months = 64.1 (0.0 – 100.0) n=27, p=0.002 reported
34 28 Median 0.0 Range (-11.7 to 4.1 p-value not reported compared to baseline
35 29 35 Median 0.0 Range (-16.0 to 16.0) 1 p value not reported compared to baseline
36 30 36 p= NS reported
37 31 37 Median 0.0 Range (-16.0 to 26.3) No significant difference reported compared to baseline

38 Baseline median (range) = 15.9 (0-57.9) n=32, at 6 months = 11.6 (0.0 – 63.4) n=28, p=1.000 reported
39 32 Mean 7.78 SD (21.43) No significant difference reported compared to baseline
40 Baseline median (range) = 15.9 (0-57.9) n=32, at 18 months = 11.6 (0.0 – 76.7) n=28, p=0.272 reported
41 Baseline median (range) = 11.7 (0-70.5) n=32, at 6 months = 29.0 (0.0 – 58.8) n=28, p=0.066 reported
33 42 Mean 11.52 SD (19.62) p=0.028 compared to baseline
34 43 Baseline median (range) = 11.7 (0-70.5) n=32, at 18 months = 36.9 (0.0 – 72.7) n=28, p=0.008 reported
44 Baseline median (range) = 58.3 (0-100) n=30, at 6 months = 66.9 (0.0 – 100) n=28, p=0.035 reported
45 Mean 7.86 SD (19.50) No significant difference reported compared to baseline
46 Baseline median (range) = 58.3 (0-100) n=30, at 18 months = 65.9 (0.0 – 100) n=26, p=0.004 reported

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Continuous pump-adminstered intrathecal baclofen therapy (CITB)	Usual care	Relative (95% CI)	Absolute (95% CI)	Quality
Ease of care Mean Visual Analogue Scale (VAS) at 6 months (better indicated by higher values)											
1 study (Hoving 2009a)	randomised trial	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	9[2]	7[3]	-[4]	-[4]	MODERATE
Ease of care Mean Visual Analogue Scale (VAS) at 6 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	16[6]	0	-[7]	-[7]	VERY LOW
Mean Visual Analogue Scale (VAS) at 12 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious[5]	no serious inconsistency	no serious indirectness	serious[1]	none	16[8]	0	-[7]	-[7]	VERY LOW

1 Total population less than 400, 95% confidence interval not calculable
2 Mean 3.9 SD (2.2) p value not reported compared to baseline
3 Mean 0.1 SD (1.6) p value not reported compared to baseline
4 p=0.008
5 Pre-post treatment data
6 Mean 4.4 SD (2.1) p=0.000 compared to baseline
7 No statistical comparison was given across groups
8 Mean 5.2 SD (2.1) p=0.000 compared to baseline

9

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Continuous pump-adminstered intrathecal baclofen therapy (CITB)	Usual care	Relative (95% CI)	Absolute (95% CI)	Quality
Pain Mean Visual Analogue Scale (VAS) at 6 months (better indicated by higher values)											
1 study (Hoving 2009a)	randomised trial	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	6[3]	6[4]	-[5]	-[5]	LOW
Pain Mean Visual Analogue Scale (VAS) at 12 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious [1,6]	no serious inconsistency	no serious indirectness	serious[2]	none	12[7]	0	-[8]	-[8]	VERY LOW
Sleeping assessed using a non-validated questionnaire											
1 study (Motta 2008)	observational study	serious [6]	no serious inconsistency	serious[9]	serious[2]	none	19[10]	0	-[8]	-[8]	VERY LOW

Pain assessed using a non-validated questionnaire											
1 study (Motta 2008)	observational study	serious [1,6]	no serious inconsistency	serious[9]	serious[2]	none	19[9]	0	-[8]	-[8]	VERY LOW
Average frequency of awakenings during night in previous 4wks at 6 months after pump implantation (better indicated by lower values)											
1 study (Ramstad 2010)	observational study	serious [6]	no serious inconsistency	no serious indirectness	serious[2]	none	29[12]	0	-[8]	-[8]	VERY LOW
Average frequency of awakenings during night in previous 4wks at 12 months after pump implantation (better indicated by lower values)											
1 study (Ramstad 2010)	observational study	serious [6]	no serious inconsistency	no serious indirectness	serious[2]	none	30[13]	0	-[8]	-[8]	VERY LOW
Pain frequency when not sleeping in previous 4wks at 6 months after pump implantation (better indicated by lower values)											
1 study (Ramstad 2010)	observational study	serious [6]	no serious inconsistency	no serious indirectness	serious[2]	none	31[14]	0	-[8]	-[8]	VERY LOW
Pain frequency when not sleeping in previous 4wks at 12 months after pump implantation (better indicated by lower values)											
1 study (Ramstad 2010)	observational study	serious [6]	no serious inconsistency	no serious indirectness	serious[2]	none	31[15]	0	-[8]	-[8]	VERY LOW
Pain severity (using a scale 0-4) in previous 4wks at 6 months after pump implantation (better indicated by lower values)											
1 study (Ramstad 2010)	observational study	serious [6]	no serious inconsistency	no serious indirectness	serious[2]	none	31[16]	0	-[8]	-[8]	VERY LOW
Pain severity (using a scale 0-4) in previous 4wks at 12 months after pump implantation (better indicated by lower values)											
1 study (Ramstad 2010)	observational study	serious [6]	no serious inconsistency	no serious indirectness	serious[2]	none	31[17]	0	-[8]	-[8]	VERY LOW

1 1 29% of participants had no available outcome data

2 Total population less than 400, 95% confidence interval not calculable
3 Mean 4.2 SD (2.9) compared to baseline
4 Mean -1.3 SD (2.4) compared to baseline
5 p=0.016
6 Pre-post treatment data
7 Mean 5.4 SD (2.7) p=0.002 compared to baseline
8 No statistical comparison was given across groups
9 Unvalidated questionnaire
10 53% of patients/caregivers indicated improved sleep
11 53% of patients/caregivers indicated decreased pain.
12 Baseline median (range) = 1.0 (0-25) n=32, at 6 months = 0.0 (0-10) n=29, p=0.005 reported
13 Baseline median (range) = 1.0 (0-25) n=32, at 12 months = 0.0 (0-10) n=30, p=0.006 reported
14 Baseline median (range) = 2.0 (0-3) n=35, at 6 months = 1.0 (0-3) n=31, p=0.000 reported
15 Baseline median (range) = 2.0 (0-3) n=35, at 12 months = 1.0 (0-3) n=31, p=0.005 reported
16 Baseline median (range) = 2.0 (0-3) n=35, at 6 months = 1.0 (0-3) n=31, p=0.005 reported
17 Baseline median (range) = 2.0 (0-3) n=35, at 12 months = 1.0 (0-3) n=31, p=0.011 reported% of participants had no available outcome data

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Continuous pump-adminstered intrathecal baclofen therapy (CITB)**	**Placebo**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**
Satisfaction with treatment assessed using a non-validated questionnaire											
1 study (Motta 2008)	observational study	serious [1]	no serious inconsistency	serious[2]	serious[3]	none	19[4]	0	-[5]	-[5]	LOW
Acceptability and tolerability assessed at least 12 months post implantation											
1 study	observational	serious [1]	no serious	no serious	serious[1]	none	17[6]	0	-[4]	-[4]	LOW

(Hoving 2009b)	study		inconsistency	indirectness							

1 Pre and post treatment data, no comparison with other treatment options

2 Unvalidated questionnaire

3 Total population less than 400, 95% confidence interval not calculable

4 15 parents or children were satisfied with the implant, 13 said they would do it again, 3 were not totally satisfied, 3 were uncertain of whether to do it again, 1 was dissatisfied and 1 said he/she would not do it again and chose to explant the pump 4 years after implant.

5 No statistical comparison was given across groups

6 Children and/or their parents were asked if they would participate in the test treatment and implantation procedures again. 15/17 children and/or their parents stated that they would participate in all procedures again. Two parents were not sure in spite of the achieved individual treatment goals for their children. The doubts in one case were based on both new onset seizures and the child's stress during pump refills and in another case were based on a worsened trunk and head balance.

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Continuous pump-adminstered intrathecal baclofen therapy (CITB)**	**Usual care**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**
Child-Health Questionnaire-Parent Form (CHQ-PF50, physical summary) at 6 months (better indicated by higher values)											
1 study (Hoving 2009a)	randomised trial	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	8[2]	8[3]	-[4]	-[4]	MODERATE
Child-Health Questionnaire-Parent Form (CHQ-PF50, psychosocial summary) at 6 months (better indicated by higher values)											
1 study (Hoving 2009a)	randomised trial	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	8[5]	8[6]	-[7]	-[7]	MODERATE
Child-Health Questionnaire-Parent Form (CHQ-PF50, physical summary) at 12 months after pump implantation (better indicated by higher values)											

1 study (Hoving 2009b)	observational study	serious [8]	no serious inconsistency	no serious indirectness	serious[1]	none	16[9]	0	-[10]	-[10]	VERY LOW
Child-health questionnaire-parent form (CHQ-PF50, psychosocial summary) at 12 months after pump implantation (better indicated by higher values)											
1 study (Hoving 2009b)	observational study	serious [8]	no serious inconsistency	no serious indirectness	serious[1]	none	16[11]	0	-[10]	-[10]	VERY LOW

1 Total population less than 400, 95% confidence interval not calculable
2 Mean 2.1 SD (10.3) compared to baseline
3 Mean -7.5 SD (6.9) compared to baseline
4 p=0.074
5 Mean 3.4 SD (7.9)
6 Mean - 5.7 SD (8.8)
7 p=0.027
8 Pre-post treatment data
9 Mean 4.6 SD (10.7) No significant difference reported compared to baseline
10 No statistical comparison was given across groups
11 Mean 5.4 SD (9.0) No significant difference reported compared to baseline

12

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Continuous pump-adminstered intrathecal baclofen therapy (CITB)**	**Usual care**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**
Absolute migration percentage at 12 months in children under 8 years old (better indicated by lower values)											
1 study (Krach	observational study	serious [1,2]	no serious inconsistency	no serious indirectness	serious[3]	none	11 (22 hips)[4]	0	-[5]	-[5]	VERY LOW

2004)											
Absolute migration percentage at 12 months in children 8 to 18 years old (better indicated by lower values)											
1 study (Krach 2004)	observational study	serious [1,2]	no serious inconsistency	no serious indirectness	serious[3]	none	17 (34 hips)[6]	0	-[5]	-[5]	VERY LOW

1 1 Pre-post treatment data
2 2 The pharmaceutical company providing the pump and the drug baclofen also provided some support for data collection and analysis, including assisting with statistical analysis and reviewing the
3 manuscript
4 3 Total population less than 400, 95% confidence interval not calculable
5 4 Mean 0.0 SD (8.4) p<0.05 compared to baseline
6 5 No statistical comparison was given across groups
7 6 Mean 1.2 SD (12.8) p<0.05 compared to baseline

8

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Continuous pump-adminstered intrathecal baclofen therapy (CITB)**	**Usual care**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**
Final Cobb angles (degrees) at approximately 3 years after pump insertion (better indicated by lower values)											
1 study (Shilt 2008)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	50[3]	50[4]	-[5]	-[5]	VERY LOW
Final Cobb angles (degrees) at approximately 3 years after pump insertion (better indicated by lower values)											
1 study (Senaran 2007)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	26[6]	25[7]	-[8]	-[8]	VERY LOW

Mean annual progression of Cobb angles (degrees) (better indicated by lower values)											
1 study (Shilt 2008)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	50[9]	50[10]	-[11]	-[11]	VERY LOW

1 Nothing was reported on the characteristics of the outcomes assessors
2 Total population less than 400, 95% confidence interval not calculable
3 Mean 28 SD (20)
4 Mean 27 SD (21)
5 MD 1 higher (7.14 lower to 9.14 higher) p=NS
6 Mean 65.19 SD (24.74)
7 Mean 73 SD (21.81)
8 MD 7.8 lower (20.95 lower to 5.33 higher) p=NS
9 Mean 6.6 SD (11.3)
10 Mean 5.0 SD (6.1)
11 MD 1.6 lower (2 lower to 5.2 higher) p=NS

Chapter 9 Orthopaedic surgery

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Soft tissue surgery	No intervention	Relative (95% CI)	Absolute (95% CI)	Quality
Mean change hip migration percentage over at least 18months (Better indicated by lower values)											
1 study (Yang 2008)	observational study	no serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	60[2]	69[3]	-	MD 8.00 lower (10.88 lower to 5.12 lower) 4*	LOW
Mean change hip migration percentage per year (Better indicated by lower values)											

1 study (Yang 2008)	observational study	no serious limitations[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	60[5]	69[6]	-	MD 6 lower (8.89 to 3.11 lower) 4*	LOW

1 1 Retrospective study
2 2 Change from baseline Mean (SD) = -3.3 (6.1)
3 3 Change from baseline Mean (SD) = 4.7 (10.3) p<0.05 from baseline
4 4 p<0.05 reported by authors
5 5 Mean change (SD) -1.6 (4.4)
6 6 Mean change (SD) 4.4 (11.3)

7

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Soft tissue surgery – gross motor function classification system (GMFCS) I and II**	**Soft tissue surgery – (GMFCS) III and IV**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**
Mean change hip migration percentage per year (Better indicated by lower values) – sub group analysis by functional ability											
1 study (Yang 2008)	observational study	no serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	28 legs	72 legs	-	MD 2.4 lower	VERY LOW

8 * Calculated by the NCC-WCH
9 1 Retrospective study
10 2 Total population less than 400, 95% confidence interval for mean difference of change not calculable,
11 3 Mean change (SD) -3.4 (4.8)
12 4 Mean change (SD) -1.0 (4.1)
13 5 p<0.05 reported by authors

Quality assessment							Summary of findings				
							No. of patients		Effect		Quality
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Bony and/or soft tissue	Standard care	Relative (95% CI)	Absolute (95% CI)	
Velocity m/s at 1 year (indicated by higher values)											
1 study (Gorton 2009)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	75[2]	75[3]	-	MD 1. 6 higher*[4]	VERY LOW
Gross motor function measure (GMFM) - D at 1 year (Better indicated by higher values)											
1 study (Gorton 2009)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	75[5]	75[6]	-	MD 2.4 lower*	VERY LOW
GMFM - E at 1 year (Better indicated by higher values)											
1 study (Gorton 2009)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	75[7]	75[8]	-	MD 2.8 lower*[4]	VERY LOW
GMFM – 66 at 1 year (Better indicated by higher values)											
1 study (Gorton 2009)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	75[9]	75[10]	-	MD 1.8 lower*[4]	VERY LOW

* Calculated by the NCC-WCH

1 Total population less than 400, 95% confidence interval is not calculable

2 Mean change from baseline at 1 year = 1.3

3 Mean change from baseline at 1 year = - 0.3

4 No statistically significant difference (p > 0.05) by analysis of covariance (ANCOVA) with baseline means adjusted for Parent PODCI transfers and Basic Mobility, GGI, velocity< earlier BoNT injection, earlier surgical procedure and study site (as a proxy for surgeon).

5 Mean change from baseline at 1 year = 0.0

6 Mean change from baseline at 1 year = 2.4

7 Mean change from baseline at 1 year = -0.7
8 Mean change from baseline at 1 year = 2.1
9 Mean change from baseline at 1 year = 0.0
10 Mean change from baseline at 1 year = 1.8

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Early bony and/or soft tissue	No intervention	Relative (95% CI)	Absolute (95% CI)	Quality
Pediatric quality of life inventory (Peds QL) Physical Functioning at 1 year (indicated by higher values)											
1 study (Gorton 2009)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	75[2]	75[3]	-	MD 9 higher*[4]	VERY LOW
Peds QL Emotional Functioning at 1 year (indicated by higher values)											
1 study (Gorton 2009)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	75[5]	75[6]	-	MD 3.4 higher*[7]	VERY LOW
Peds QL Social Functioning at 1 year (indicated by higher values)											
1 study (Gorton 2009)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	75[8]	75[9]	-	MD 5.4 higher*[7]	VERY LOW
Peds QL School Functioning at 1 year (indicated by higher values)											
1 study (Gorton 2009)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	75[10]	75[11]	-	MD 0.6 lower*[7]	VERY LOW

* Calculated by the NCC-WCH
1 Total population less than 400, 95% confidence interval not calculable

2 Mean change from baseline at 1 year = 4.7
3 Mean change from baseline at 1 year = -4.3
4 P= 0.039 by ANCOVA 5 Mean change from baseline at 1 year = 1.2
6 Mean change from baseline at 1 year = -2.2
7 No statistically significant difference (p>0.05) by ANCOVA with baseline means adjusted for Parent PODCI transfers and Basic Mobility, GGI, velocity< earlier BoNT injection, earlier surgical procedure and study site (as a proxy for surgeon).
8 Mean change from baseline = 4.3
9 Mean change from baseline = -1.1
10 Mean change from baseline = 2.2
11 Mean change from baseline = 2.8

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Soft tissue surgery	Botulinum neurotoxin (BoNT)	Relative (95% CI)	Absolute (95% CI)	Quality
Mean change hip migration percentage at least at 18 months (Better indicated by lower values)											
1 study (Yang 2008)	observational study	no serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	60[3]	65[4]	-	MD 1.7 lower (4.26 lower to 0.86 higher)*[5]	VERY LOW
Mean change hip migration percentage per year - all children (Better indicated by lower values)											
1 study (Yang 2008)	observational study	no serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	60[6]	65[7]	-	MD 0.9 lower (2.83 lower to 1.03 higher)*[5]	VERY LOW
Mean change hip migration percentage per year - High functioning children gross motor function classification system (GMFCS) levels 1 and 2 (Better indicated by lower values)											
1 study	observational	no serious	no serious	no serious	serious[2]	none	28 legs[8]	40 legs[9]	-	MD 1 lower	VERY

(Yang 2008)	study	limitations[1]	inconsistency	indirectness						(3.4 lower to 1.4 higher)*[10]	LOW
Mean change hip migration percentage per year - Low functioning children GMFCS levels 3 and 4 (Better indicated by lower values)											
1 study (Yang 2008)	observational study	no serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	72 legs[11]	90 legs[12]	-	MD 1 lower (2.71 lower to 0.71 higher)*[10]	VERY LOW

1 * Calculated by the NCC-WCH
2 1 Retrospective study
3 2 Total population is less than 400, 95% confidence interval crosses null effect and is wide
4 3 Change from baseline Mean (SD) = -3.3 (6.1)
5 4 Change from baseline Mean (SD) = -1.6 (8.4)
6 5 p=NS reported
7 6 Change from baseline Mean (SD) = -1.6 (4.4)
8 7 Change from baseline Mean (SD) = -0.7 (6.5)
9 8 Change from baseline Mean (SD) = -3.4 (4.8)
10 9 Change from baseline Mean (SD) = -2.4 (5.2)
11 10 Significance test not reported
12 11 Change from baseline Mean (SD) = -1.0 (4.1)
13 12 Change from baseline Mean (SD) = 0.0 (6.9)

14

Quality assessment							**Summary of findings**				
							No. of patients		**Effect**		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Single event multi-level surgery (SEMLS) and therapy**	**Therapy alone**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**

Gross motor function measure (GMFM)-66 at 12 months(Better indicated by higher values)											
1 study (Thomason 2011)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	11[3]	8[4]	-	MD 1.3 higher*	LOW
GMFM-66 at 24 months(Better indicated by higher values)											
1 study (Thomason 2011)	randomised study	very serious limitations[1,5]	no serious inconsistency	no serious indirectness	serious[6]	none	11[7]	0	-	MD 4.9 (0.98 higher to 8.7 higher)*	VERY LOW
Gillette Gait Index at 12 months (Better indicated by lower values)											
1 study (Thomason 2011)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	11[8]	8[9]	-	MD 211 lower*	LOW
Gillette Gait Index at 24 months (Better indicated by lower values)											
1 study (Thomason 2011)	randomised study	very serious limitations[1,5]	no serious inconsistency	no serious indirectness	no serious imprecision[10]	none	11[11]	0	-	MD 213 lower (327 lower to 100 lower)*	LOW

* Calculated by the NCC-WCH

1 No blinding used.

2 Total population less than 400, 95% confidence interval for mean difference of change not calculable,

3 Baseline mean (SD) = 65.3 (11.1), Score at 12 months mean (SD) = 66.1 (8.9)

4 Baseline mean (SD) = 70.3 (11.3), Score at 12 months mean (SD) = 69.8 (11.4)

5 Pre-post treatment outcome assessed at 24 months in the surgery and therapy group only. No comparison to therapy only group

6 Total population less than 400, 95% confidence interval does not cross null hypothesis but confidence intervals are wide

7 Baseline mean (SD) = 65.3 (11.1), Score at 24 months mean (SD) = 70.2 (10.1) Difference (95% CI): reported as $p<0.05$

8 Baseline mean (SD) = 353 (211), Score at 12 months mean (SD) = 153 (81)

9 Baseline mean (SD) = 370 (194), Score at 12 months mean (SD) = 381 (196)

10 Total population less than 400, 95% confidence interval does not cross null hypothesis

11 Baseline mean (SD) = 353 (211), Score at 24 months mean (SD) = 139 (80) Difference (95% CI): reported as $p<0.05$

Quality assessment							**Summary of findings**				

							No. of patients		Effect		
No. of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Single event multi-level surgery (SEMLS) and therapy**	**Therapy alone**	**Relative (95% CI)**	**Absolute (95% CI)**	**Quality**
Child health questionnaire (CHQ)-PF50 physical function at 12 months(Better indicated by higher values)											
1 study (Thomason 2011)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	11[3]	8[4]	-	MD 3 lower	LOW
CHQ-PF50 physical function at 24 months(Better indicated by higher values)											
1 study (Thomason 2011)	randomised study	very serious limitations[5]	no serious inconsistency	no serious indirectness	serious[6]	none	11[7]	0	-	MD 22 (from 4 higher to 39 higher)	VERY LOW
CHQ-PF50 social/emotional function at 12 months (Better indicated by higher values)											
1 study (Thomason 2011)	randomised study	serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	11[8]	8[9]	-	MD 12 lower	LOW
CHQ-PF50 family cohesion at 12 months (Better indicated by higher values)											
1 study (Thomason 2011)	randomised study	serious limitations[10]	no serious inconsistency	no serious indirectness	serious[2]	none	11[11]	8[12]	-	MD 11 higher	LOW

* Calculated by the NCC-WCH

1 No blinding used. Baseline score is lower in the surgery and therapy group compared to the therapy group, the authors do not clarify whether the difference is significant

2 Total population less than 400, 95% confidence interval for mean difference of change not calculable,

3 Baseline mean (SD) = 47 (26), Score at 12 months mean (SD) = 58 (26)

4 Baseline mean (SD) = 62 (35), Score at 12 months mean (SD) = 76 (25)

5 Pre-post treatment outcome assessed at 24 months in the surgery and therapy group only. No comparison to therapy only group

6 Total population less than 400, 95% confidence interval does not cross null hypothesis but confidence intervals are wide

7 Baseline mean (SD) = 47 (26), Score at 24 months mean (SD) = 69 (18) Difference (95% CI): reported as p<0.05
8 Baseline mean (SD) = 69 (34), Score at 12 months mean (SD) = 65 (36)
9 Baseline mean (SD) = 89 (21) Score at 12 months mean (SD) = 97 (8)
10 No blinding used.
11 Baseline mean (SD) = 72 (20), Score at 12 months mean (SD) =83 (13)
12 Baseline mean (SD) = 69 (20), Score at 12 months mean (SD) = 69 (20)

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Single event multi-level surgery (SEMLS)	Botulinum neurotoxin (BoNT)	Relative (95% CI)	Absolute (95% CI)	Quality
Walking velocity (m/s) (Better indicated by lower values)											
1 study (Molenaers 2001)	observational study	no serious limitations[1]	no serious inconsistency	no serious indirectness	serious[2]	none	43 limbs[3]	43 limbs[4]	-	MD 0.07 lower*[5]	VERY LOW

* Calculated by the NCC-WCH
1 Retrospective study
2 Total population less than 400, 95% confidence interval not calculable
3 Mean change from baseline -0.1, p = NS reported
4 Mean change from baseline -0.03, p = NS reported
5 No comparison across treatment groups given

Chapter 10 Selective dorsal rhizotomy

Quality assessment	Summary of findings		
	No. of patients	Effect	Quality

No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Selective dorsal rhizotomy (SDR) and Therapy	Therapy only	Relative (95% CI)	Absolute (95% CI)	
Mean change in active range of motion trunk rotation at 8m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[2]	36[3]	-	MD = 4 lower*	VERY LOW
Mean change in active range of motion trunk rotation at 20m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[4]	36[5]	-	MD = 3 lower*	VERY LOW
Mean change in active range of motion pelvis rotation at 8m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[6]	36[7]	-	MD = 1 lower*	VERY LOW
Mean change in active range of motion pelvis rotation at 20m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[8]	36[9]	-	MD = 2 lower*	VERY LOW
Mean change in active range of motion pelvic tilt at 8m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[10]	36[11]	-	MD = 2 lower*	VERY LOW
Mean change in active range of motion pelvic tilt at 20m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[12]	none	29[13]	36[14]	-	MD = 2 lower*	VERY LOW

Mean change modified Ashworth hip adductors at 9m (Better indicated by lower values)											
1 study (Steinbok 1997)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[15]	none	14	14	-	MD 1.1 lower (1.54 to 0.66 lower)*	MODERATE
Mean change in active range of motion (ROM) hip extension at 6m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[16]	12[17]	-	MD = 19.6 lower*	MODERATE
Mean change in active range of motion hip flexion/extension at 8m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[18]	36[19]	-	MD = 3 higher*	VERY LOW
Mean change in range of motion hip extension at 9m (Better indicated by higher values)											
1 study (Steinbok 1997)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	14	14	-	MD 19.1 higher (11.95 to 26.25 higher)*	HIGH
Mean change in active ROM hip extension at 12m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[20]	12[21]	-	MD = 3.7 lower*	MODERATE
Mean change in active range of motion hip flexion/extension at 20m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[12]	none	29[22]	36[23]	-	MD = 3 higher*	VERY LOW
Mean change in passive ROM hip extension at 6m (Better indicated by higher values)											

1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[24]	12[25]	-	MD = 5.5 higher*	MODERATE
Mean change in passive ROM hip extension at 12m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[26]	12[27]	-	MD = 0*	MODERATE
Mean change modified Ashworth score at knee at 6m (Better indicated by lower values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious [28]	none	12[29]	12[30]	-	MD = 1 lower*	MODERATE
Mean change modified Ashworth at knee at 9m (Better indicated by lower values)											
1 study (Steinbok 1997)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[15]	none	14	14	-	MD 1 lower (1.45 to 0.55 lower)*	MODERATE
Mean modified Ashworth score at knee at 12m (Better indicated by lower values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious [28]	none	12[29]	12[30]	-	MD = 1 lower*	MODERATE
Mean change in active ROM knee extension at 6m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[31]	12[32]	-	MD = 23.6 higher*	MODERATE
Mean change in active range of motion knee flexion/extension at 8m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[33]	36[34]	-	MD = 4 higher*	VERY LOW

Mean change range of motion at knee at 9m (Better indicated by higher values)											
1 study (Steinbok 1997)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	14	14	-	MD 17.7 higher (7.73 to 27.67 higher)*	HIGH
Mean change in active ROM knee extension at 12m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	Mean change =19.5 n=12[35]	Mean change = -7.5 n=12[36]	-	MD = 27 higher*	MODERATE
Mean change in active range of motion knee flexion/extension at 20m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[37]	36[38]	-	MD = 4 higher*	VERY LOW
Mean change in active range of motion knee flexion at initial contact at 8m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[39]	36[40]	-	MD = 3 lower*	VERY LOW
Mean change in active range of motion knee flexion at initial contact at 20m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[41]	36[42]	-	MD = 5 lower*	VERY LOW
Mean change in passive ROM knee extension at 6m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[43]	12[44]	-	MD = 7.5 lower*	MODERATE
Mean change in passive ROM knee extension at 12m (Better indicated by higher values)											
1 study	randomised	no serious	no serious	no serious	serious[1]	none	12[45]	12[46]	-	MD = 3	MODERAT

(Wright 1998)	trials	limitations	inconsistency	indirectness						higher*	E
Mean change in passive ROM popliteal angle at 6 m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[47]	12[48]	-	MD = 8.4 lower*	MODERATE
Mean change in passive ROM popliteal angle at 12m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[49]	12[50]	-	MD = 4.7 lower*	MODERATE
Mean modified Ashworth score at ankle at 6m (Better indicated by lower values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious [28]	none	12[51]	12[52]	-	MD = 1 lower*	MODERATE
Mean change modified Ashworth at ankle at 9m (Better indicated by lower values)											
1 study (Steinbok 1997)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	none	14	14	-	MD 1.5 lower (2.02 to 0.98 lower)*	HIGH
Mean change modified Ashworth score at ankle at 12m (Better indicated by lower values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious [28]	none	12[53]	12[54]	-	MD = 0.5 lower*	MODERATE
Mean change in active ROM at ankle dorsiflexion 6m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious [28]	none	12[55]	12[56]	-	MD = 16.7 higher*	MODERATE
Mean change in active range of motion ankle dorsiflexion/plantarflexion at 8m (Better indicated by higher values)											

1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[57]	36[58]	-	MD = 1 higher*	VERY LOW
Mean change range of motion at ankle at 9m (Better indicated by higher values)											
1 study (Steinbok 1997)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	14	14	-	MD 0.5 higher (7.51 lower to 8.51 higher)*	MODERATE
Mean change in active ROM ankle dorsiflexion 12m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious [28]	none	12[59]	12[60]	-	MD = 27 higher*	MODERATE
Mean change in active range of motion ankle dorsiflexion/plantarflexion at 20m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[61]	36[62]	-	MD = 1 lower*	VERY LOW
Mean change in active range of motion ankle dorsiflexion/plantarflexion at initial contact at 8m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[63]	36[64]	-	MD = 1 higher*	VERY LOW
Mean change in active range of motion ankle dorsiflexion/plantarflexion at initial contact at 20m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[65]	36[66]	-	MD = 0*	VERY LOW
Mean change in extension foot progression angle at 8m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[67]	36[68]	-	MD = 3 lower*	VERY LOW

Mean change in extension foot progression angle at 20m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[12]	none	29[69]	36[70]	-	MD = 6 lower*	VERY LOW
Mean change in passive ROM ankle dorsiflexion (KE) at 6m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious [28]	none	12[71]	12[72]	-	MD = 9.7 higher*	MODERATE
Mean change in passive ROM ankle dorsiflexion (KE) at 12m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious [28]	none	12[73]	12[74]	-	MD = 11.2 higher*	MODERATE
Mean change total modified Ashworth score at 6m (read from graph) (Better indicated by lower values)											
1 study (McLaughlin 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	21[75]	17[76]	-	MD = 0.85 lower*	MODERATE
Mean change total modified Ashworth score at 12m (Better indicated by lower values)											
1 study (McLaughlin 1998)	randomised trials	serious[77]	no serious inconsistency	no serious indirectness	serious [28]	none	21[78]	17[79]	-	MD = 0.55 lower*	LOW
Mean change total modified Ashworth score at 24m (Better indicated by lower values)											
1 study (McLaughlin 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious [28]	none	Mean change = -0.88 n=21[80]	Mean change = 0 n=17[81]	-	MD = 0.88 lower*	MODERATE

* Calculated by the NCC-WCH

1 Total population less than 400, 95% confidence interval for mean difference not calculable, no significant differences between groups reported by authors

2 Baseline mean (SD) = 15 ± 9, Score at 8 months mean (SD) = 11 ± 5

3 Baseline mean (SD) = 12 ± 6, Score at 8 months mean (SD) = 12 ± 6

4 Baseline mean (SD) = 15 ± 9, Score at 20 months mean (SD) = 12 ± 7

5 Baseline mean (SD) = 12 ± 6, Score at 20 months mean (SD) = 12 ± 6
6 Baseline mean (SD) = 19 ± 7, Score at 8 months mean (SD) = 17 ± 6
7 Baseline mean (SD) = 17 ± 7, Score at 8 months mean (SD) = 18 ± 7
8 Baseline mean (SD) = 19 ± 7,, Score at 20 months mean (SD) = 18 ± 4 reported as significant difference to baseline
9 Baseline mean (SD) = 17 ± 7, Score at 20 months mean (SD) = 18 ± 7
10 Baseline mean (SD) = 8 ± 3, Score at 8 months mean (SD) = 7 ± 3
11 Baseline mean (SD) = 7 ± 3, Score at 8 months mean (SD) = 8 ± 3
12 Total population less than 400, 95% confidence interval not calculable, significant difference between groups reported by authors
13 Baseline mean (SD) = 8 ± 3, Score at 20 months mean (SD) = 6 ± 3
14 Baseline mean (SD) = 7 ± 3, Score at 20 months mean (SD) = 7 ± 3
15 Total population less than 400, 95% confidence interval does not cross null effect but is wide
16 Mean change from baseline =-4
17 Mean change from baseline =15.6
18 Baseline mean (SD) = 43 ± 7, Score at 8 months mean (SD) = 46 ± 7
19 Baseline mean (SD) = 43 ± 7, Score at 8 months mean (SD) = 43 ± 7
20 Mean change from baseline =2.2
21 Mean change from baseline =5.9
22 Baseline mean (SD) = 43 ± 7, Score at 8 months mean (SD) = 46 ± 8
23 Baseline mean (SD) = 43 ± 7, Score at 8 months mean (SD) = 43 ± 7
24 Mean change from baseline =7.3
25 Mean change from baseline=1.8
26 Mean change from baseline =7.5
27 Mean change from baseline= = 7.5
28 Total population less than 400, 95% confidence interval not calculable, significant difference between groups reported by authors p<0.001
29 Mean change from baseline = -1
30 Mean change from baseline = 0
31 Mean change from baseline = 15.4
32 Mean change from baseline = -8.2
33 Baseline mean (SD) = 44 ± 13, Score at 8 months mean (SD) = 49 ± 12
34 Baseline mean (SD) = 45 ± 12, Score at 8 months mean (SD) = 46 ± 13
35 Mean change from baseline = 19.5
36 Mean change from baseline = -7.5
37 Baseline mean (SD) = 44 ± 13, Score at 20 months mean (SD) = 52 ± 13 reported as significant difference compared to baseline
38 Baseline mean (SD) = 45 ± 12, Score at 20 months mean (SD) = 47 ± 13
39 Baseline mean (SD) = 32 ± 12, Score at 8 months mean (SD) = 28 ± 11
40 Baseline mean (SD) = 29 ± 8, Score at 8 months mean (SD) = 28 ± 9
41 Baseline mean (SD) = 32 ± 12, Score at 20 months mean (SD) = 28 ± 12

42 Baseline mean (SD) = 29 ± 8, Score at 20 months mean (SD) = 30 ± 8
43 Mean change from baseline = 4.5
44 Mean change from baseline = 12
45 Mean change from baseline = 6.4
46 Mean change from baseline = 3.4
47 Mean change from baseline = -4.6
48 Mean change from baseline = 3.8
49 Mean change from baseline = -4.6
50 Mean change from baseline = 0.1
51 Mean change from baseline = -1
52 Mean change from baseline = 0
53 Mean change from baseline =-0.5
54 Mean change from baseline = 0
55 Mean change from baseline = 12.8
56 Mean change from baseline = -3.9
57 Baseline mean (SD) = 15 ± 8, Score at 8 months mean (SD) = 16 ± 6
58 Baseline mean (SD) = 17 ± 7, Score at 8 months mean (SD) = 17 ± 6
59 Mean change from baseline = 19.5
60 Mean change from baseline = -7.5
61 Baseline mean (SD) = 15 ± 8, Score at 20 months mean (SD) = 16 ± 4
62 Baseline mean (SD) = 17 ± 7, Score at 20 months mean (SD) = 19 ± 7
63 Baseline mean (SD) = −5 ± 7, Score at 8 months mean (SD) = −4 ± 6
64 Baseline mean (SD) = −3 ± 7, Score at 8 months mean (SD) = - 3 ± 7
65 Baseline mean (SD) = −5 ± 7, Score at 20 months mean (SD) = −4 ± 6
66 Baseline mean (SD) = −3 ± 7, Score at 20 months mean (SD) = −2 ± 6
67 Baseline mean (SD) = −3 ± 18, Score at 8 months mean (SD) = −7 ± 15
68 Baseline mean (SD) = −7 ± 13, Score at 8 months mean (SD) = −8 ± 12
69 Baseline mean (SD) = −3 ± 18, Score at 20 months mean (SD) = −9 ± 15
70 Baseline mean (SD) = −7 ± 13, Score at 20 months mean (SD) = −5 ± 11
71 Mean change from baseline = 11.9
72 Mean change from baseline = 2.2
73 Mean change from baseline = 8.8
74 Mean change from baseline = -2.4
75 Mean change from baseline = -1
76 Mean change from baseline = -0.15
77 SDR + therapy group received significantly more physiotherapy in months 7-12 than the therapy only group (42.9hrs versus 26.3 hrs)
78 Mean change from baseline = -0.88

79 Mean change from baseline = -0.13
80 Mean change from baseline = -0.88
81 Mean change from baseline = 0

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Selective dorsal rhizotomy (SDR) and Therapy	Therapy only - function	Relative (95% CI)	Absolute (95% CI)	Quality
Mean change Gross motor function measure (GMFM) 88 score lying and rolling at 6m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[2]	12[3]	-	MD = 3.1 lower*	MODERATE
Mean change GMFM score lying and rolling at 9m (Better indicated by higher values)											
1 study (Steinbok 1997)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	14[4]	14[5]	-	MD = -0.2*	MODERATE
Mean change GMFM 88 score lying and rolling at 12m (Better indicated by higher values)											
2 studies (McLaughlin 1998; Wright 1998)	randomised trials	serious[6]	no serious inconsistency[7]	no serious indirectness	serious[8]	none	21	17	-	MD 0.84 lower (3.14 lower to 1.46 higher)*	LOW
Mean change GMFM 88 score lying and rolling at 24m (Better indicated by higher values)											
1 study (McLaughli	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[8]	none	21	17	-	MD 0.1 lower	MODERATE

n 1998)										(2.25 lower to 2.05 higher)*	
Mean change GMFM 88 score sitting at 6m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[9]	12[10]	-	MD = 11.7 higher*	MODERATE
Mean change GMFM score sitting at 9m (Better indicated by higher values)											
1 study (Steinbok 1997)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	14[11]	14[12]	-	MD = 15 higher*	MODERATE
Mean change GMFM 88 score sitting at 12m (Better indicated by higher values)											
2 studies (McLaughlin 1998; Wright 1998)	randomised trials	serious[3]	no serious inconsistency[6]	no serious indirectness	serious8	none	21	17	-	MD 1.2 higher (5.58 lower to 7.98 higher)*	LOW
Mean change GMFM 88 score sitting at 24m (Better indicated by higher values)											
1 study (McLaughlin 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[8]	none	21	17	-	MD 1.6 lower (8.63 lower to 5.43 higher)*	MODERATE
Mean change GMFM 88 score crawl/kneel at 6m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[13]	12[14]	-	MD = 0.3 higher*	MODERATE
Mean change GMFM score crawl/kneel at 9m (Better indicated by higher values)											

1 study (Steinbok 1997)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[2]	none	14[15]	14[16]	-	MD = 7.7 higher*	MODERATE
Mean change GMFM 88 score crawl/kneel at 12m (Better indicated by higher values)											
2 studies (McLaughlin 1998; Wright 1998)	randomised trials	serious[6]	no serious inconsistency[17]	no serious indirectness	serious[8]	none	21	17	-	MD 0.1 lower (6.61 lower to 6.41 higher)*	LOW
Mean change GMFM 88 score crawl/kneel at 24m (Better indicated by higher values)											
1 study (McLaughlin 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[8]	none	21	17	-	MD 0.3 lower (6.57 lower to 5.97 higher)*	MODERATE
Mean change GMFM 88 score standing at 6m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision[18]	none	12[19]	12[20]	-	MD = 4.2 higher*	HIGH
Mean change GMFM score standing at 9m (Better indicated by higher values)											
1 study (Steinbok 1997)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	14[21]	14[22]	-	MD = 2.3 higher*	MODERATE
Mean change GMFM 88 score standing at 12m (Better indicated by higher values)											
2 studies (McLaughlin 1998; Wright 1998)	randomised trials	serious[6]	no serious inconsistency[11]	no serious indirectness	serious[8]	none	21	17	-	MD 2.6 higher (8.02 lower to 13.22	LOW

										higher)*	
Mean change GMFM 88 score standing at 24m (Better indicated by higher values)											
1 study (McLaughlin 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[8]	none	21	17	-	MD 3.4 lower (15.14 lower to 8.34 higher)*	MODERATE
Mean change GMFM 88 score walk/run/jump at 6m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[23]	12[24]	-	MD = 2.9 higher*	MODERATE
Mean change GMFM score walk/run/jump at 9m (Better indicated by higher values)											
1 study (Steinbok 1997)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	14[25]	14[26]	-	MD = 6.0 higher*	MODERATE
Mean change GMFM 88 score walk/run/jump at 12m (Better indicated by higher values)											
2 studies (McLaughlin 1998; Wright 1998)	randomised trials	serious[6]	no serious inconsistency[27]	no serious indirectness	serious[28]	none	21	17	-	MD 0.5 higher (5.74 lower to 6.74 higher)*	LOW
Mean change GMFM 88 score walk/run/jump at 24m (Better indicated by higher values)											
1 study (McLaughlin 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[8]	none	21	17	-	MD 1.6 higher (7.92 lower to 11.12 higher)*	MODERATE
Mean change total GMFM 88 score at 6m (Better indicated by higher values)											

1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[29]	12[30]	-	MD = 4.8 higher*	MODERATE
Mean change total GMFM score at 9m (Better indicated by higher values)											
1 study (Steinbok 1997)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[31]	none	14	14	-	MD 6.2 higher (2.26 to 10.14 higher)*	MODERATE
Mean change total GMFM 88 score at 12m (Better indicated by higher values)											
2 studies (McLaughlin 1998; Wright 1998)	randomised trials	serious[6]	serious[32]	no serious indirectness	serious[8]	none	33	29	-	MD 3.21 higher (0.09 lower to 6.5 higher)*	VERY LOW
Mean change total GMFM 88 score at 24m (Better indicated by higher values)											
1 study (McLaughlin 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[8]	none	21	17	-	MD 0.2 lower (7.28 lower to 6.88 higher)*	MODERATE
Mean change in GMFM score (%) at 8m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[33]	36[34]	-	MD = 0*	VERY LOW
Mean change in GMFM score (%) at 20m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[35]	36[36]	-	MD = 3 higher*	VERY LOW

Mean change in timed walk at 6mths (m/60secs) (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[37]	12[38]	-	MD = 3.1 lower*	MODERATE
Mean change in timed walk at 12mths (m/60secs) (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[39]	12[40]	-	MD = 19.4 higher*	MODERATE
Mean change in Gait speed (cm/sec) at 8m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	29[41]	36[42]	-	MD = 11 higher*	VERY LOW
Mean change velocity (m/s) gait analysis at 12m (Better indicated by higher values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[43]	12[44]	-	MD = 0.04 lower*	MODERATE
Mean change in Gait speed (cm/sec) at 20m (Better indicated by higher values)											
1 study (Engsberg 2006)	observational study	no serious limitations	no serious inconsistency	no serious indirectness	serious[18]	none	29[45]	36[46]	-	MD = 18 higher*	VERY LOW
Mean change in use of assistive device gait analysis at 12m (Better indicated by lower values)											
1 study (Wright 1998)	randomised trials	no serious limitations	no serious inconsistency	no serious indirectness	serious[1]	none	12[47]	12[48]	-	MD = 0.25 higher*	MODERATE

* Calculated by the NCC-WCH

1 Total population less than 400, 95% confidence interval for mean difference not calculable, no significant differences between groups reported by authors

2 Mean change from baseline = 1.6

3 Mean change from baseline = 4.7

4 Mean change from baseline = 4.1

5 Mean change from baseline = 4.3

6 McLaughlin 1998: SDR + therapy group received significantly more physiotherapy in months 7-12 than the therapy only group (42.9hrs versus 26.3 hrs)

7 Only the results from the McLaughlin 1998 study contributed to the mean difference. Mean change results from the Wright 1998 trial (Mean difference 0.9 higher, n=12 in each group, p=NS reported by authors) did not have associated SD preventing pooling of data

8 Total population less than 400, 95% confidence interval crosses null hypothesis and confidence intervals are wide

9 Mean change from baseline = 13.6

10 Mean change from baseline = 1.9

11 Mean change from baseline = 17.8

12 Mean change from baseline = 2.8

13 Mean change from baseline = 5.5

14 Mean change from baseline =5,2

15Mean change from baseline =12.1

16 Mean change from baseline = 4.4

17 Only the results from the McLaughlin 1998 study contributed to the mean difference. Mean change results from the Wright 1998 trial (Mean difference 8.6 higher, n=12 in each group, p=NS reported by authors) did not have associated SD preventing pooling of data

18 Total population less than 400, 95% confidence interval not calculable, significant difference between groups reported by authors $p<0.05$

19 Mean change from baseline = 8.3

20 Mean change from baseline = 4.1

21 Mean change from baseline = 12.1

22 Mean change from baseline = 9.8

23 Mean change from baseline = 4.2

24 Mean change from baseline =1.3

25 Mean change from baseline = 10.4

26 Mean change from baseline = 4.4

27 Only the results from the McLaughlin 1998 study contributed to the mean difference presented. Mean change results from the Wright 1998 trial (Mean difference 10.3 higher, n=12 in each group, $p<0.05$ reported by authors) did not have associated SD preventing pooling of data

28 Only the results from the McLaughlin 1998 study contributed to the mean difference. Mean change results from the Wright 1998 trial did not have SDs associated with them preventing the estimate of a mean difference and pooling of data. In Wright 1998, the authors state that there was a significant difference between the groups ($p<0.05$) favouring the SDR + therapy group over the therapy only group

29 Mean change from baseline = 6.8

30 Mean change from baseline = 2

31 Total population less than 400, 95% confidence interval does not cross null hypothesis but confidence intervals are wide

32 75% heterogeneity for the meta-analysis. The mean total change for the SDR + therapy group in the Wright 1998 study was considerably higher than that in the McLaughlin 1998 trial (7.7 higher versus 0.7 higher)

33 Baseline mean (SD) = 87 ± 10, Score at 8 months mean (SD) = 88 ± 9

34 Baseline mean (SD) = 89 ± 7, Score at 8 months mean (SD) = 90 ± 7

35 Baseline mean (SD) = 87 ± 10, Score at 20 months mean (SD) = 92 ± 8 reported as significantly different from baseline

36 Baseline mean (SD) = 89 ± 7, Score at 20 months mean (SD) = 91 ± 7 reported as significantly different from baseline

37 Mean change from baseline = 5

38 Mean change from baseline = 8.1
39 Mean change from baseline = 15.9
40 Mean change from baseline = -3.5
41 Baseline mean (SD) = 81 ± 22, Score at 8 months mean (SD) = 91 ± 25
42 Baseline mean (SD) = 91 ± 26, Score at 8 months mean (SD) = 90 ± 22
43 Mean change from baseline = 0.16
44 Mean change from baseline = 0.2
45 Baseline mean (SD) = 81 ± 22, Score at 20 months mean (SD) = 101 ± 24
46 Baseline mean (SD) = 91 ± 26, Score at 20 months mean (SD) = 93 ± 22
47 Mean change from baseline = 0.25 Four children in the SDR + therapy group changed to a less supportive device during 12 m follow up. Two children using walkers at baseline used two canes at 12m, one child who did not walk at baseline used a walker at 12m and one child using a walker at baseline walked independently at 12m
48 Mean change from baseline = 0

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Selective dorsal rhizotomy (SDR) and Therapy	Orthopaedic surgery	Relative (95% CI)	Absolute (95% CI)	Quality
Mean change paediatric evaluation of disability inventory (PEDI) Functional skills: self care at 6m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[3]	7[4]	-	MD 2.17 higher (1.93 lower to 6.27 higher)*	VERY LOW
Mean change PEDI Functional skills: self care at 12m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[5]	7[6]	-	MD 0.68 higher (4.36 lower to 5.72	VERY LOW

										higher)*	
Mean change PEDI Functional skills: self care at 24m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[7]	7[8]	-	MD 3.72 higher (1.90 lower to 9.34 higher)*	VERY LOW
Mean change PEDI Functional skills: mobility at 6m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[9]	7[10]	-	MD 2.91 higher (2.05 lower to 7.87 higher)*	VERY LOW
Mean change PEDI Functional skills: mobility at 12m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[11]	7[12]	-	MD 1.89 higher (3.75 lower to 7.53 higher)*	VERY LOW
Mean change PEDI Functional skills: mobility at 24m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[13]	7[14]	-	MD 0.17 higher (6.30 lower to 6.64 higher)*	VERY LOW
Mean change PEDI Functional skills: social at 6m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[15]	7[16]	-	MD 0.10 higher (10.31 lower to 10.51	VERY LOW

										higher)*	
Mean change PEDI Functional skills: social at 12m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[17]	7[18]	-	MD 0.12 higher (8.16 lower to 8.40 higher)*	VERY LOW
Mean change PEDI Functional skills: social at 24m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[19]	7[20]	-	MD 0.82 higher (7.41 lower to 9.05 higher)*	VERY LOW
Mean change PEDI Caregiver assistance – self care at 6m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[21]	7[22]	-	MD 1.72 higher (4.04 lower to 7.48 higher)*	VERY LOW
Mean change PEDI Caregiver assistance – self care at 12m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[23]	7[24]	-	MD 2.44 lower (8.75 lower to 3.87 higher)*	VERY LOW
Mean change PEDI Caregiver assistance – self care at 24m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[25]	7[26]	-	MD 2.36 higher (3.68 lower to 8.40 higher)*	VERY LOW

Mean change PEDI Caregiver assistance – mobility at 6m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[27]	7[28]	-	MD 2.28 higher (2.93 lower to 7.49 higher)*	VERY LOW
Mean change PEDI Caregiver assistance – mobility at 12m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[29]	7[30]	-	MD 6.17 higher (0.83 lower to 13.17 higher)*	VERY LOW
Mean change PEDI Caregiver assistance – mobility at 24m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[31]	7[32]	-	MD 7.75 higher (1.81 lower to 17.31 higher)*	VERY LOW
Mean change PEDI Caregiver assistance – social at 6m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[33]	7[34]	-	MD 0.32 lower (12.86 lower to 12.22 higher)*	VERY LOW
Mean change PEDI Caregiver assistance – social at 12m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[35]	7[36]	-	MD 6.21 higher (1.94 lower to 14.36 higher)*	VERY LOW

Mean change PEDI Caregiver assistance – social at 24m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[37]	7[38]	-	MD 4.47 higher (7.34 lower to 16.28 higher)*	VERY LOW

* Calculated by the NCC-WCH

1 Unequal size of treatment groups

2 Total population less than 400, 95% confidence interval crosses null hypothesis and confidence intervals are wide Comparison across groups not reported by authors

3 Mean change (SD) from baseline = 3.27 (4.37)

4 Mean change (SD) from baseline = 1.1 (4.82)

5 Mean change (SD) from baseline = 6.18 (6.91)

6 Mean change (SD) from baseline = 5.5 (5.27)

7 Mean change (SD) from baseline = 11.89 (6.81)

8 Mean change (SD) from baseline = 8.17 (6.29)

9 Mean change (SD) from baseline = 1.41 (3.8)

10 Mean change (SD) from baseline = -1.5 (6.26)

11 Mean change (SD) from baseline = 3.73 (7.94)

12 Mean change (SD) from baseline = 1.84 (5.79)

13 Mean change (SD) from baseline = 7.51 (7.11)

14 Mean change (SD) from baseline = 7.34 (7.52)

15 Mean change (SD) from baseline = 1.22 (5.95)

16 Mean change (SD) from baseline = 1.12 (13.56)

17 Mean change (SD) from baseline = 3.19 (6.56)

18 Mean change (SD) from baseline = 3.07 (10.4)

19 Mean change (SD) from baseline = 7.82 (6.63)

20 Mean change (SD) from baseline = 7.0 (10.31)

21 Mean change (SD) from baseline = 2.82 (9.77)

22 Mean change (SD) from baseline = 1.1 (4.82)

23 Mean change (SD) from baseline = 3.06 (10.73)

24 Mean change (SD) from baseline = 5.5 (5.27)

25 Mean change (SD) from baseline = 10.53 (8.33)

26 Mean change (SD) from baseline = 8.17 (6.29)

27 Mean change (SD) from baseline = 0.78 (5.15)

28 Mean change (SD) from baseline = -1.5 (6.26)

29 Mean change (SD) from baseline = 8.01 (11.97)

30 Mean change (SD) from baseline = 1.84 (5.79)
31 Mean change (SD) from baseline = 13.58 (13.76)
32 Mean change (SD) from baseline = 5.83 (9.64)
33 Mean change (SD) from baseline = 1.12 (13.56)
34 Mean change (SD) from baseline = 1.44 (14.67)
35 Mean change (SD) from baseline = 3.07 (10.4)
36 Mean change (SD) from baseline = -3.14 (8.89)
37 Mean change (SD) from baseline = 7.0 (10.31)
38 Mean change (SD) from baseline = 2.53 (14.59)

Quality assessment							Summary of findings				
							No. of patients		Effect		
No. of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Selective dorsal rhizotomy (SDR) and Therapy	Orthopaedic surgery	Relative (95% CI)	Absolute (95% CI)	Quality
Mean change gross motor function measure (GMFM) 88 score lying and rolling at 6m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[3]	7[3]	-	MD = 0	VERY LOW
Mean change GMFM 88 score lying and rolling at 12m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[3]	7[3]	-	MD = 0	VERY LOW
Mean change GMFM 88 score lying and rolling at 24m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[3]	7[3]	-	MD = 0	VERY LOW

Mean change GMFM 88 score sitting at 6m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[4]	7[5]	-	MD 0.57 higher (1.86 lower to 3.00 higher)*	VERY LOW
Mean change GMFM 88 score sitting at 12m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[6]	7[7]	-	MD 1.10 higher (1.55 lower to 3.75 higher)*	VERY LOW
Mean change GMFM 88 score sitting at 24m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[8]	7[9]	-	MD 0.72 higher (2.21 lower to 3.65 higher)*	VERY LOW
Mean change GMFM 88 score crawl/kneel at 6m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[10]	7[11]	-	MD 4.29 higher (0.15 lower to 8.73 higher)*	VERY LOW
Mean change GMFM 88 score crawl/kneel at 12m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[12]	7[13]	-	MD 2.68 higher (1.99 lower to 7.35 higher)*	VERY LOW
Mean change GMFM 88 score crawl/kneel at 24m (Better indicated by higher values)											

1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[14]	7[15]	-	MD 2.99 higher (0.52 lower to 6.50 higher)*	VERY LOW
Mean change GMFM 88 score standing at 6m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[16]	7[17]	-	MD 4.87 lower (15.15 lower to 5.41 higher)*	VERY LOW
Mean change GMFM 88 score standing at 12m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[18]	7[19]	-	MD 14.38 lower (29.07 lower to 0.31 higher)*	VERY LOW
Mean change GMFM 88 score standing at 24m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[20]	7[21]	-	MD 12.40 lower (30.68 lower to 5.88 higher)*	VERY LOW
Mean change GMFM 88 score walk/run/jump at 6m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[22]	7[23]	-	MD 5.10 higher (4.33 lower to 14.53 higher)*	VERY LOW

Mean change GMFM 88 score walk/run/jump at 12m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[24]	7[25]	-	MD 1.69 lower (10.50 lower to 7.12 higher)*	VERY LOW
Mean change GMFM 88 score walk/run/jump at 24m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[26]	7[27]	-	MD 2.73 higher (13.30 lower to 18.76 higher)*	VERY LOW
Mean change total GMFM 88 score at 6m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[28]	7[29]	-	MD 1.02 higher (3.06 lower to 5.10 higher)*	VERY LOW
Mean change total GMFM 88 score at 12m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[30]	7[31]	-	MD 2.51 lower (7.63 lower to 2.61 higher)*	VERY LOW
Mean change total GMFM 88 score at 24m (Better indicated by higher values)											
1 study (Buckon 2004b)	observational study	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	18[32]	7[33]	-	MD 1.19 lower (8.29 lower to 5.91 higher)*	VERY LOW

* Calculated by the NCC-WCH

1 Unequal size of treatment groups

2 Total population less than 400, 95% confidence interval crosses null hypothesis and confidence intervals are wide Comparison across groups not reported by authors

3 Mean change from baseline = 0 All children could perform lying and rolling task

4 Mean change from baseline = 1.76 (4.06)

5 Mean change from baseline = 1.19 (2.09)

6 Mean change from baseline = 2.24 (4.97)

7 Mean change from baseline = 1.14 (1.78)

8 Mean change from baseline = 1.67 (4.63)

9 Mean change from baseline = 0.95 (2.7)

10 Mean change from baseline = 2.25 (5.63)

11 Mean change from baseline = -2.04 (4.85)

12 Mean change from baseline = 3.7 (9.39)

13 Mean change from baseline = 1.02 (2.32)

14 Mean change from baseline = 3.33 (6.41)

15 Mean change from baseline = 0.34 (2.55)

16 Mean change from baseline = 3.56 (13.88)

17 Mean change from baseline = 8.43 (10.85)

18 Mean change from baseline = 6.13 (17.68)

19 Mean change from baseline = 20.51 (16.49)

20 Mean change from baseline = 12.14 (18.38)

21 Mean change from baseline = 24.54 (21.85)

22 Mean change from baseline = 2.32 (7.91)

23 Mean change from baseline = 2.78 (11.73)

24 Mean change from baseline = 4.86 (12.8)

25 Mean change from baseline = 6.55 (8.81)

26 Mean change from baseline = 14.44 (16.38)

27 Mean change from baseline = 11.71 (19.08)

28 Mean change from baseline = 1.98 (5.22)

29 Mean change from baseline = 0.96 (4.45)

30 Mean change from baseline = 3.39 (7.82)

31 Mean change from baseline = 5.9 (4.89)

32 Mean change from baseline = 6.32 (8.38)

33 Mean change from baseline = 7.51 (8.04)

Appendix L Key priorities for research

The final published guideline will include the justification for each of the key research recommendations

Appendix M Benefits and harms of intrathecal baclofen

Table M.1 summarises the clinical pathway for the population in each study included to determine the benefits and harms associated with an intrathecal baclofen testing (ITB-T). The table presents the total number of patients tested, and the breakdown according to outcomes, including beneficial response and adverse effects.

Table M.1

Outcome	Total	Hoving 2009a Hoving 2009b (2 papers)	Gilmartin 2000 (1 paper)	Awaad 2003 (1 paper)
Number of patients who underwent the test	117	17 children	51 patients[a]	49 patients[a]
Number of single doses given	135	23	63[b]	49[b]
Number of positive tests at any given dosage (however 'positive' was defined by authors)	114	17	48	49
Number of negative tests at any given dosage	21	6 [c]	15 [d]	0
Number of adverse effects and patients involved	Adverse effects: 38 Patients: 26	Adverse effects: 9 Children affected: 8[e]	Adverse effects: 29 (7 during placebo) Patients affected: 18 (4 during placebo)[f]	None reported
Number of complications and patients involved	Complications: 21 Patients: 18	Complications: 19 Children affected: 16[g]	Complications: 2 Children affected: 2[h]	None reported
Number of patients with a positive test who went on to have the pump	100	17	44 [i]	39 [i]
Number of patients with a negative test who went on to have the pump	0	0	0	0
Number of patients with a positive test who did not go ton o have the pump and reasons given	10	0	2[h]	10

Number of patients in whom the beneficial effects seen on testing were also seen when using the pump at 12 months (beneficial effects are based on Ashworth scores measured at both assessment times)	75	17	40[k]	18[l]
Number of patients in whom the pump was not effective due to baclofen not having an effect	1	0	0	1[m]
Number of patients with adverse effects or complications requiring explantation of pump and reason given	7[n]	0	3[n] Reasons: All developed infections of the pump pocket: 1 had a second pump re-implanted to complete study and the other 2 withdrew from study	4[n] Reasons: • Meningitis= 1 • Infection = 2 (1 was a 'pocket infection', unclear about the other one) • Lack of effect-no clinical improvement: 1[m]

a. Including adults

b. Related to lack of response to a single-specific dose

c. The five children who required a higher of dose of intrathecal baclofen (ITB) were significantly older (p=0.037) and weighed more (p=0.007) than the 12 children who responded to a low dose. No significant differences were reported for sex, GMFCS, CP type, or the use of oral baclofen. One child had a second hospital admission to receive a second dose because the first one caused apathy and, in an upright position, nausea and vomiting. This condition "impeded the observation of effects and side effects"

d. 3 patients had a positive response to placebo. 10 did not have a positive response to the initial 50-µg baclofen dose, and 2 did not have a positive response to the second 75-µg baclofen dose (but responded to 100 µg later on)

e. 7 children became slightly lethargic, including one who also experienced transient excessive hypotonia. One child experienced excessive perspiration of hands and feet

f. Nausea, vomiting and drowsiness were common effects reported during baclofen, but unclear how many children involved were affected by each symptom

g. 14 children experienced symptoms of lowered CSF pressure (including lethargy, decreased appetite, dry mouth, dizziness, perspiration, pallor, nausea, vomiting, and headache - the last 4 symptoms appeared or increased only in an upright position)

3 children CSF leaked from the catheter connection (In one of these, the catheter connection was defective, so a new catheter had to be inserted; in the other two reconnection of the cap solved the problem)

1 child had radicular pain in his right leg postoperatively. The pain was completely resolved by retracting the catheter by 5cm.

1 child developed gastroenteritis (other children on the ward had gastroenteritis)

h. One patient developed meningitis and withdrew from study and 1 patient had intercurrent gastroenteritis and also withdrew from study

i. Age unclear

j. Reasons for this: 3 patients elected to use oral medications, 2 had 'family issues', 1 child's body size was 'too small', 1 child died 'unrelated to baclofen trial', 1 child had 'medical issues', 1 child underwent spinal fusion and 1 family decided not to undergo implant at the time of the study, reason not given

k. This was the total number of patients at the time. Unclear how many of them were children.

l. From the study it is clear that at least 18 of the patients who had the pump were children. We have data on effectiveness reported by age groups (<18 and >18) but it appears as if all the 39 patients had been followed up. However, previously the authors reported that 10/39 patients did not have all follow-up outcomes available. It is unclear how many of these were children.

m. Unclear if this patient was a child and also unclear if this was the same patient in which the pump had to be stopped after 5 months because of a change of behaviour owing to an increase in seizure activity

n. Unclear whether any of these patients were children

Table M.2 summarises other adverse effects and complications identified in the evidence for ITB-T

Table M.2

	Total number of pumps implanted	**Total number of complications**	**Surgical Complications (number of complications)**	**Mechanical Complications (number of complications)**	**Pump or perator failure (number of complications)**	**Additional complications identified for other medical or surgical treatments (for example, MRI scan, scoliosis and hip surgery, VP shunting)**
Hoving 2009b Hoving 2009b	17	26	Swelling at pump site: 7 Lumbar swelling: 3 Pruritus at pump site: 3 Possible CSF leakage: 2 Wound leakage: 1 Pruritus at lumbar scar site: 1 Cystitis: 1 Incomplete operation:1 Postoperative pain at pump site: 1	Moving pump: 3 Beeping pump: 2 Abrupt lack of ITB effect 4 hours postoperatively:1 (solved by catheter replacement)	0	0
Gilmartin 2000	45	58	Pocket seroma: 7 Pocket infection: 5 Catheter dislodged: 3 CSF leak: 3 Other: 20	Catheter break: 2 Catheter dislodge: 2 Back pain at catheter site: 2 Other: 14	0	0
Awaad 2003	39	3	Meningitis:1 Infection: 2 (1 was a "pocket infection", unclear about the other one)	0	0	0

Total	101	87	61	26	0	0

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