

Multiple sclerosis in adults: management (update)

NICE guideline: search strategies

NICE guideline <number>

Search strategies

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Draft for Consultation

*This guideline was developed by the
National Guideline Centre, hosted by the
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Local commissioners and providers have a responsibility to enable the guideline to be applied when individual health professionals and their patients or service users wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with compliance with those duties.

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Clinical search literature search strategies

The literature searches for the reviews are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual.{NICE2014}

For more information, please see the Methodology review published as part of the accompanying documents for this guideline.

A.1 Information and support

This literature search strategy was used for the following review:

- What information, education and support do a) adults with clinically isolated syndrome b) adults with MS (themes relating to coordination of care only) c) adults with MS receiving palliative care d) adults with MS who may become pregnant, and their families and carers find most useful?

Searches for patient views were run in Medline (OVID), Embase (OVID), CINAHL, PsycINFO (OVID) and Epistemonikos. Search filters were applied to the search where appropriate.

Table 1: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	01 January 2010 – 08 September 2021	Qualitative studies Exclusions (animal studies, letters, comments, children)
Embase (OVID)	01 January 2010 – 08 September 2021	Qualitative studies Exclusions (animal studies, letters, comments, conference abstracts, children)
CINAHL, Current Nursing and Allied Health Literature (EBSCO)	01 January 2010 – 08 September 2021	Human; Clinical Queries: Qualitative - High Sensitivity; Age Groups: All Adult; Exclusions (Medline Records)
PsycINFO (Ovid)	01 January 2010 – 08 September 2021	Qualitative studies
Epistemonikos (The Epistemonikos Foundation)	01 January 2010 – 08 September 2021	Systematic Reviews Exclusions (Cochrane Reviews)

Medline (Ovid) search terms

1.	exp Multiple Sclerosis/
2.	((multiple or disseminated) adj2 scleros*).ti,ab.
3.	encephalomyelitis disseminata.ti,ab.
4.	MS.ti.
5.	Myelitis, Transverse/
6.	transverse myelitis.ti,ab.
7.	or/1-6
8.	*Demyelinating Diseases/
9.	*Demyelinating Autoimmune Diseases, CNS/

10.	(Demyelinat* adj2 (syndrome* or disease* or autoimmun*)).ti,ab.
11.	(Chronic Cerebrospinal Venous Insufficiency or CCSVI).ti,ab.
12.	Venous Insufficiency/cf, co, di, dg, et [Cerebrospinal Fluid, Complications, Diagnosis, Diagnostic Imaging, Etiology]
13.	(Devic* adj (disease or syndrome)).ti,ab.
14.	((clinical* isolat* or radiological* isolat*) adj2 syndrome*).ti,ab.
15.	exp Optic Neuritis/
16.	((neuromyelitis or neuritis or neuropapillitis) adj2 (retrobulbar or optic*)).ti,ab.
17.	(NMO or NMOSD).ti,ab.
18.	or/1-17
19.	letter/
20.	editorial/
21.	news/
22.	exp historical article/
23.	Anecdotes as Topic/
24.	comment/
25.	case report/
26.	(letter or comment*).ti.
27.	or/19-26
28.	randomized controlled trial/ or random*.ti,ab.
29.	27 not 28
30.	animals/ not humans/
31.	exp Animals, Laboratory/
32.	exp Animal Experimentation/
33.	exp Models, Animal/
34.	exp Rodentia/
35.	(rat or rats or rodent* or mouse or mice).ti.
36.	or/29-35
37.	18 not 36
38.	limit 37 to English language
39.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
40.	38 not 39
41.	exp Information-Services/ or Publications/ or Books/ or Pamphlets/
42.	mobile applications/ or social networking/ or electronic mail/ or text messaging/ or hotlines/
43.	Patient Education Handout/
44.	*"Health Services Needs and Demand"/
45.	exp consumer health information/ or exp patient education as topic/
46.	communication/ or communication barriers/
47.	Health Communication/
48.	exp Consumer Health Information/
49.	information dissemination/
50.	exp social support/
51.	Self-Help Groups/
52.	exp counseling/

53.	psychosocial support systems/
54.	peer group/
55.	Health Knowledge, Attitudes, Practice/
56.	Needs Assessment/
57.	Patient Satisfaction/
58.	Attitude to Health/
59.	Patient Preference/
60.	(information or education or support).ti.
61.	(app or apps or blog* or booklet* or brochure* or discussion group or dvd* or elearn* or e-learn* or email* or e-mail* or facebook or facetime or face time or factsheet or forum* or handout* or hand out* or helpline* or hotline* or infopack or internet* or ipad* or iphone* or leaflet* or literature or magazine* or message board or mobile phone* or newsletter* or pamphlet* or palm pilot* or myspace or personal digital assistant* or pocket pc* or podcast* or poster or posters or skype* or smartphone* or smart phone* or seminar or social media or social network* or sms or text messag* or twitter or tweet* or video* or web* or wiki* or workshop or youtube*).ti.
62.	(advisor or advisors or counsel* or rescoure center* or resource centre* or training).ti,ab.
63.	((mobile* or portable) adj4 application*).ti.
64.	(computer* adj4 (handheld or palm top or palmtop or pda or tablet*).ti.
65.	((internet or online) adj3 (chat* or communit* or discuss* or help or network* or support*).ti,ab.
66.	(selfhelp group* or self help group* or self manage* or support group* or support service*).ti,ab.
67.	(peer adj2 support*).ti,ab.
68.	(follow up adj2 support*).ti,ab.
69.	((lifestyle or pregnan* or prenatal* or psych*) adj3 (education or information or intervention* or support* or therap*).ti,ab.
70.	((education* or information) adj3 (access* or barrier* or care or content* or co-ordinat* or disseminat* or electronic* or face to face or format* or help or intervention* or material* or need* or program* or provision or remote* or resource* or require* or seek* or session* or source* or support* or timing* or understand*).ti,ab.
71.	((clinician* or doctor* or health professional* or nurs* or physician* or specialist*) adj3 (carer* or caregiver* or client* or famil* or patient*) adj2 communic*).ti,ab.
72.	((carer* or caregiver* or client* or famil* or patient*) adj3 (awareness or confidence or decision mak* or knowledge or misconception* or misunderstand* or understanding)).ti,ab.
73.	((carer* or caregiver* or client* or famil* or patient* or education* or information or clinician* or doctor* or health professional* or nurs* or physician* or specialist*) adj3 (attitud* or belief* or choice* or expectation* or experience or experiences or opinion* or perception* or perspective* or preference* or priorit* or satisfact* or view*).ti,ab.
74.	"health literacy".ti,ab.
75.	*Caregivers/px [Psychology]
76.	Patients/px [Psychology]
77.	or/41-76
78.	Qualitative research/ or Narration/ or exp Interviews as Topic/ or exp "Surveys and Questionnaires"/ or Health care surveys/
79.	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*).ti,ab.
80.	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them* or ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic* adj3 analys*) or theoretical sampl* or purposive sampl* or hermeneutic* or heidegger* or husserl* or colaizzi* or van

	kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*).ti,ab.
81.	or/78-80
82.	40 and 77 and 81

Embase (Ovid) search terms

1.	exp Multiple Sclerosis/
2.	((multiple or disseminated) adj2 scleros*).ti,ab.
3.	encephalomyelitis disseminata.ti,ab.
4.	MS.ti.
5.	myelitis/
6.	transverse myelitis.ti,ab.
7.	or/1-6
8.	demyelinating disease/
9.	(Demyelinat* adj2 (syndrome* or disease* or autoimmun*).ti,ab.
10.	(Chronic Cerebrospinal Venous Insufficiency or CCSVI).ti,ab.
11.	vein insufficiency/co, di, et [Complication, Diagnosis, Etiology]
12.	(Devic* adj (disease or syndrome)).ti,ab.
13.	((clinical* isolat* or radiological* isolat*) adj2 syndrome*).ti,ab.
14.	exp optic neuritis/
15.	((neuromyelitis or neuritis or neuropapillitis) adj2 (retrobulbar or optic*).ti,ab.
16.	(NMO or NMOSD).ti,ab.
17.	or/1-16
18.	letter.pt. or letter/
19.	note.pt.
20.	editorial.pt.
21.	(conference abstract or conference paper).pt.
22.	case report/ or case study/
23.	(letter or comment*).ti.
24.	or/18-23
25.	randomized controlled trial/ or random*.ti,ab.
26.	24 not 25
27.	animal/ not human/
28.	nonhuman/
29.	exp Animal Experiment/
30.	exp Experimental Animal/
31.	animal model/
32.	exp Rodent/
33.	(rat or rats or rodent* or mouse or mice).ti.
34.	or/26-33
35.	17 not 34
36.	(exp child/ or exp pediatrics/) not (exp adult/ or exp adolescent/)
37.	35 not 36
38.	limit 37 to English language
39.	information service/ or publication/ or book/

40.	exp mobile phone/ or exp mobile application/ or exp social network/ or e-mail/ or text messaging/ or hotline/
41.	patient education/
42.	patient decision making/
43.	patient information/
44.	medical information/
45.	information dissemination/
46.	consumer health information/
47.	communication barrier/
48.	social support/
49.	peer group/
50.	self help/
51.	psychosocial care/
52.	exp counseling/
53.	health personnel attitude/ or nurse attitude/ or physician attitude/ or consumer attitude/
54.	patient attitude/ or patient preference/ or patient satisfaction/
55.	attitude to health/
56.	needs assessment/
57.	(information or education or support).ti.
58.	(app or apps or blog* or booklet* or brochure* or discussion group or dvd* or elearn* or e-learn* or email* or e-mail* or facebook or facetime or face time or factsheet or forum* or handout* or hand out* or helpline* or hotline* or infopack or internet* or ipad* or iphone* or leaflet* or literature or magazine* or message board or mobile phone* or newsletter* or pamphlet* or palm pilot* or myspace or personal digital assistant* or pocket pc* or podcast* or poster or posters or skype* or smartphone* or smart phone* or seminar or social media or social network* or sms or text messag* or twitter or tweet* or video* or web* or wiki* or workshop or youtube*).ti.
59.	(advisor or advisors or counsel* or rescoure center* or resource centre* or training).ti,ab.
60.	((mobile* or portable) adj4 application*).ti.
61.	(computer* adj4 (handheld or palm top or palmtop or pda or tablet*).ti.
62.	((internet or online) adj3 (chat* or communit* or discuss* or help or network* or support*).ti,ab.
63.	(selfhelp group* or self help group* or self manage* or support group* or support service*).ti,ab.
64.	(peer adj2 support*).ti,ab.
65.	(follow up adj2 support*).ti,ab.
66.	((lifestyle or pregnan* or prenatal* or psych*) adj3 (education or information or intervention* or support* or therap*).ti,ab.
67.	((education* or information) adj3 (access* or barrier* or care or content* or co-ordinat* or disseminat* or electronic* or face to face or format* or help or intervention* or material* or need* or program* or provision or remote* or resource* or require* or seek* or session* or source* or support* or timing* or understand*).ti,ab.
68.	((clinician* or doctor* or health professional* or nurs* or physician* or specialist*) adj3 (carer* or caregiver* or client* or famil* or patient*) adj2 communic*).ti,ab.
69.	((carer* or caregiver* or client* or famil* or patient*) adj3 (awareness or confidence or decision mak* or knowledge or misconception* or misunderstand* or understanding)).ti,ab.
70.	((carer* or caregiver* or client* or famil* or patient* or education* or information or clinician* or doctor* or health professional* or nurs* or physician* or specialist*) adj3

	(attitud* or belief* or choice* or expectation* or experience or experiences or opinion* or perception* or perspective* or preference* or priorit* or satisfact* or view*).ti,ab.
71.	"health literacy".ti,ab.
72.	or/39-71
73.	health survey/ or exp questionnaire/ or exp interview/ or qualitative research/ or narrative/
74.	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*).ti,ab.
75.	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them* or ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic* adj3 analys*) or theoretical sampl* or purposive sampl* or hermeneutic* or heidegger* or husserl* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*).ti,ab.
76.	or/73-75
77.	38 and 72 and 76

CINAHL (EBSCO) search terms

S1.	(MH "Multiple Sclerosis+")
S2.	TI ((multiple or disseminated) n2 scleros*) OR AB ((multiple or disseminated) n2 scleros*)
S3.	TI (encephalomyelitis disseminata or disseminated encephalomyelitis or ADEM) OR AB (encephalomyelitis disseminata or disseminated encephalomyelitis or ADEM)
S4.	TI MS
S5.	(MH "Myelitis, Transverse")
S6.	TI transverse myelitis OR AB transverse myelitis
S7.	(MM "Demyelinating Diseases")
S8.	(MM "Demyelinating Autoimmune Diseases, CNS")
S9.	TI (Demyelinat* N2 (syndrome* or disease* or autoimmun*)) OR AB (Demyelinat* N2 (syndrome* or disease* or autoimmun*))
S10.	TI (Chronic Cerebrospinal Venous Insufficiency or CCSVI) OR AB (Chronic Cerebrospinal Venous Insufficiency or CCSVI)
S11.	(MM "Venous Insufficiency/CF/CO/DI/ET")
S12.	TI ((clinical* isolat* or radiological* isolat*) N2 syndrome*) OR AB ((clinical* isolat* or radiological* isolat*) N2 syndrome*)
S13.	(MH "Optic Neuritis+")
S14.	TI ((neuromyelitis or neuritis or neuropapillitis) N2 (retrobulbar or optic*)) OR AB ((neuromyelitis or neuritis or neuropapillitis) N2 (retrobulbar or optic*))
S15.	TI (NMO or NMOSD) OR AB (NMO or NMOSD)
S16.	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
S17.	MH Information-Services OR MH Publications OR MH Books OR MH Pamphlets
S18.	MH mobile applications OR MH social networking OR MH electronic mail OR MH text messaging OR MH hotlines
S19.	MH Patient Education Handout OR MH "Health Services Needs and Demand" OR MH consumer health information OR MH patient education as topic OR MH communication OR MH communication barriers OR MH Health Communication OR MH Consumer Health Information
S20.	MH information dissemination OR MH social support OR MH Self-Help Groups OR MH counseling OR MH psychosocial support systems OR MH peer group OR MH Health Knowledge, Attitudes, Practice OR MH Needs Assessment OR MH Patient Satisfaction OR MH Attitude to Health OR MH Patient Preference OR MH "Patients/PF" OR MH "Caregivers/PF" OR OR MH "Attitude of Health Personnel" OR MH "Nurse Attitudes"

	OR MH "Physician Attitudes" OR MH "Family Attitudes" OR MH "Patient Attitudes" OR MH "Caregiver Attitudes"
S21.	TI (information or education or support) OR TI (app or apps or blog* or booklet* or brochure* or discussion group or dvd* or elearn* or e-learn* or email* or e-mail* or facebook or facetime or face time or factsheet or forum* or handout* or hand out* or helpline* or hotline* or infopack or internet* or ipad* or iphone* or leaflet* or literature or magazine* or message board or mobile phone* or newsletter* or pamphlet* or palm pilot* or myspace or personal digital assistant* or pocket pc* or p ...
S22.	TI (mobile* or portable) AND TI application*
S23.	TI computer* AND TI ((handheld or palm top or palmtop or pda or tablet*)
S24.	TX (internet or online) AND TX (chat* or communit* or discuss* or help or network* or support*)
S25.	TX selfhelp group* or self help group* or self manage* or support group* or support service*
S26.	TX (peer or follow up) AND TX support*
S27.	TX (lifestyle or pregnan* or prenatal* or psych*) AND TX (education or information or intervention* or support* or therap*)
S28.	TX (education* or information) AND TX (access* or barrier* or care or content* or coordinat* or disseminat* or electronic* or face to face or format* or help or intervention* or material* or need* or program* or provision or remote* or resource* or require* or seek* or session* or source* or support* or timing* or understand*)
S29.	TX (clinician* or doctor* or health professional* or nurs* or physician* or specialist*) AND TX (carer* or caregiver* or client* or famil* or patient*) AND TX communic*
S30.	TX (carer* or caregiver* or client* or famil* or patient*) AND TX (awareness or confidence or decision mak* or knowledge or misconception* or misunderstand* or understanding)
S31.	TX (carer* or caregiver* or client* or famil* or patient* or education* or information or clinician* or doctor* or health professional* or nurs* or physician* or specialist*) AND TX (attitud* or belief* or choice* or expectation* or experience or experiences or opinion* or perception* or perspective* or preference* or priorit* or satisfact* or view*)
S32.	TX health literacy
S33.	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
S34.	S16 AND S33

PsycINFO (Ovid) search terms

1.	exp Multiple Sclerosis/
2.	((multiple or disseminated) adj2 scleros*).ti,ab.
3.	encephalomyelitis disseminata.ti,ab.
4.	MS.ti.
5.	*myelitis/
6.	transverse myelitis.ti,ab.
7.	or/1-6
8.	Demyelination/
9.	(Demyelinat* adj2 (syndrome* or disease* or autoimmun*)).ti,ab.
10.	(Chronic Cerebrospinal Venous Insufficiency or CCSVI).ti,ab.
11.	(Devic* adj (disease or syndrome)).ti,ab.
12.	((clinical* isolat* or radiological* isolat*) adj2 syndrome*).ti,ab.
13.	exp Optic Neuritis/
14.	((neuromyelitis or neuritis or neuropapillitis) adj2 (retrobulbar or optic*)).ti,ab.
15.	(NMO or NMOSD).ti,ab.

16.	or/1-15
17.	Case report/
18.	letter/
19.	exp Mice/
20.	exp Rodents/
21.	exp Animals/ not (exp Human Males/ or Human Females/)
22.	(rat or rats or mouse or mice or rodent*).ti,ab.
23.	or/17-22
24.	16 not 23
25.	limit 24 to English language
26.	First posting.ps.
27.	24 and 26
28.	25 or 27
29.	exp Qualitative Methods/
30.	exp Narratives/
31.	exp Questionnaires/
32.	exp Interviews/
33.	exp Health Care Services/
34.	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*).ti,ab.
35.	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them* or ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic* adj3 analys*) or theoretical-sampl* or purposive-sampl* or hermeneutic* or heidegger* or husserl* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*).ti,ab.
36.	or/29-35
37.	28 and 36

Epistemonikos search terms

1.	((advanced_title_en:(multiple sclerosis) OR advanced_abstract_en:(multiple sclerosis)) AND (advanced_title_en:(patient information) OR advanced_abstract_en:(patient information)) OR (advanced_title_en:(patient education) OR advanced_abstract_en:(patient education)))
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A.2 Coordination of care

This literature search strategy was used for the following review:

- What is the clinical and cost effectiveness of processes of care, including the role of MS specialist nurses and other healthcare professionals, to improve care coordination and health outcomes in adults with MS?

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 2: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	01 January 1995 – 08 September 2021	Randomised controlled trials Systematic review studies Observational studies Exclusions (animal studies, letters, comments, children)
Embase (OVID)	01 January 1995 – 08 September 2021	Randomised controlled trials Systematic review studies Observational studies Exclusions (animal studies, letters, comments, conference abstracts, children)
The Cochrane Library (Wiley)	Cochrane Reviews 1995 to 2021 Issue 9 of 12 CENTRAL 1995 to 2021 Issue 9 of 12	None Exclusions (conference abstracts & clinical trials)
CINAHL, Current Nursing and Allied Health Literature (EBSCO)	01 January 1995 – 08 September 2021	Human; Clinical Queries: Therapy - High Sensitivity, Review - High Sensitivity, Qualitative - High Sensitivity; Age Groups: All Adult; Language: English Exclusions (Medline Records)
AMED, Allied and Complementary Medicine (OVID)	01 January 1995 – 08 September 2021	None Language – English; journal article or "review"
Epistemonikos (The Epistemonikos Foundation)	01 January 1995 – 08 September 2021	Systematic Reviews Exclusions (Cochrane Reviews)

Medline (Ovid) search terms

83.	exp Multiple Sclerosis/
84.	((multiple or disseminated) adj2 scleros*).ti,ab.
85.	encephalomyelitis disseminata.ti,ab.
86.	MS.ti.
87.	Myelitis, Transverse/
88.	transverse myelitis.ti,ab.
89.	or/1-6
90.	*Demyelinating Diseases/
91.	*Demyelinating Autoimmune Diseases, CNS/
92.	(Demyelinat* adj2 (syndrome* or disease* or autoimmun*)).ti,ab.
93.	(Chronic Cerebrospinal Venous Insufficiency or CCSVI).ti,ab.
94.	Venous Insufficiency/cf, co, di, dg, et [Cerebrospinal Fluid, Complications, Diagnosis, Diagnostic Imaging, Etiology]
95.	(Devic* adj (disease or syndrome)).ti,ab.

96.	((clinical* isolat* or radiological* isolat*) adj2 syndrome*).ti,ab.
97.	exp Optic Neuritis/
98.	((neuromyelitis or neuritis or neuropapillitis) adj2 (retrobulbar or optic*)).ti,ab.
99.	(NMO or NMOSD).ti,ab.
100.	or/1-17
101.	letter/
102.	editorial/
103.	news/
104.	exp historical article/
105.	Anecdotes as Topic/
106.	comment/
107.	case report/
108.	(letter or comment*).ti.
109.	or/19-26
110.	randomized controlled trial/ or random*.ti,ab.
111.	27 not 28
112.	animals/ not humans/
113.	exp Animals, Laboratory/
114.	exp Animal Experimentation/
115.	exp Models, Animal/
116.	exp Rodentia/
117.	(rat or rats or rodent* or mouse or mice).ti.
118.	or/29-35
119.	18 not 36
120.	limit 37 to English language
121.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
122.	38 not 39
123.	"Delivery of Health Care, Integrated"/
124.	exp Patient Care Management/
125.	"Continuity of Patient Care"/
126.	"quality of health care"/ or clinical competence/ or process assessment, health care/
127.	exp Interprofessional Relations/
128.	exp Health Services Accessibility/
129.	Program Evaluation/
130.	(interdisciplin* or inter-disciplin* or interprofession* or inter-profession* or multidisciplin* or multi-disciplin* or multi-profession* or multiprofession* or transprofession* or trans-profession* or integrat* or network* or MDC or MDT or IDT).ti,ab.
131.	(team* adj2 (approach* or treat* or care* or caring or model* or plan* or strateg*)).ti,ab.
132.	((integrat* or comprehensive or collaborat* or model or approach or strateg* or program* or plan* or pathway or co-ordinat* or coordinat* or continuity or continuum) adj3 (care or caring or service* or health* or treat* or advis* or advice* or intervention* or manag* or team* or staff* or communicat* or relation* or inform* or practice* or evaluat*)).ti,ab.
133.	case management.ti,ab.
134.	(shared care or one-stop clinic* or one stop clinic* or patient management).ti,ab.

135.	((person-cent* or person cent* or patient-cent* or patient cent* or patient) adj2 (care or caring or health*)).ti,ab.
136.	((regular* or proactiv*) adj2 (review* or monitor* or check-up* or checkup* or followup* or follow-up*)).ti,ab.
137.	exp Multiple Sclerosis/nu [Nursing]
138.	nursing/ or specialties, nursing/ or advanced practice nursing/ or community health nursing/ or home health nursing/ or neuroscience nursing/ or public health nursing/ or rehabilitation nursing/
139.	Nurse's Role/
140.	exp nurses/ or exp nursing staff/
141.	((specialist* or multiple sclerosis or MS) adj2 nurs*).ti,ab.
142.	((nurs* or nursing) adj (role or clinic* or practitioner* or care or service* or team)).ti,ab.
143.	Physical Therapists/
144.	Physical Therapy Department, Hospital/
145.	allied health personnel/ or community health workers/ or home health aides/ or licensed practical nurses/ or nursing assistants/ or physical therapist assistants/
146.	(health adj2 (professional* or aide* or personnel or community* or worker* or assistant*)).ti,ab.
147.	(physical therap* or physiotherap*).ti,ab.
148.	Occupational Therapy/
149.	Rehabilitation/
150.	Physical Therapy Modalities/
151.	physical rehab*.ti,ab.
152.	occupational therap*.ti,ab.
153.	(key worker* or keyworker*).ti,ab.
154.	(social prescrib* or link worker* or community referral* or community health worker*).ti,ab.
155.	or/41-72
156.	40 and 73
157.	randomized controlled trial.pt.
158.	controlled clinical trial.pt.
159.	randomi#ed.ti,ab.
160.	placebo.ab.
161.	randomly.ti,ab.
162.	Clinical Trials as topic.sh.
163.	trial.ti.
164.	or/75-81
165.	Meta-Analysis/
166.	exp Meta-Analysis as Topic/
167.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
168.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
169.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
170.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
171.	(search* adj4 literature).ab.
172.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.

173.	cochrane.jw.
174.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
175.	or/83-92
176.	74 and (82 or 93)
177.	Epidemiologic studies/
178.	Observational study/
179.	exp Cohort studies/
180.	(cohort adj (study or studies or analys* or data)).ti,ab.
181.	((follow up or observational or uncontrolled or non randomized or epidemiologic*) adj (study or studies or data)).ti,ab.
182.	((longitudinal or retrospective or prospective) and (study or studies or review or analys* or cohort* or data)).ti,ab.
183.	Controlled Before-After Studies/
184.	Historically Controlled Study/
185.	Interrupted Time Series Analysis/
186.	(before adj2 after adj2 (study or studies or data)).ti,ab.
187.	exp case control study/
188.	case control*.ti,ab.
189.	Cross-sectional studies/
190.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
191.	or/95-108
192.	74 and 109
193.	94 or 110

Embase (Ovid) search terms

78.	exp Multiple Sclerosis/
79.	((multiple or disseminated) adj2 scleros*).ti,ab.
80.	encephalomyelitis disseminata.ti,ab.
81.	MS.ti.
82.	myelitis/
83.	transverse myelitis.ti,ab.
84.	or/1-6
85.	demyelinating disease/
86.	(Demyelinat* adj2 (syndrome* or disease* or autoimmun*)).ti,ab.
87.	(Chronic Cerebrospinal Venous Insufficiency or CCSVI).ti,ab.
88.	vein insufficiency/co, di, et [Complication, Diagnosis, Etiology]
89.	(Devic* adj (disease or syndrome)).ti,ab.
90.	((clinical* isolat* or radiological* isolat*) adj2 syndrome*).ti,ab.
91.	exp optic neuritis/
92.	((neuromyelitis or neuritis or neuropapillitis) adj2 (retrobulbar or optic*)).ti,ab.
93.	(NMO or NMOSD).ti,ab.
94.	or/1-16
95.	letter.pt. or letter/
96.	note.pt.
97.	editorial.pt.
98.	(conference abstract or conference paper).pt.

99.	case report/ or case study/
100.	(letter or comment*).ti.
101.	or/18-23
102.	randomized controlled trial/ or random*.ti,ab.
103.	24 not 25
104.	animal/ not human/
105.	nonhuman/
106.	exp Animal Experiment/
107.	exp Experimental Animal/
108.	animal model/
109.	exp Rodent/
110.	(rat or rats or rodent* or mouse or mice).ti.
111.	or/26-33
112.	17 not 34
113.	(exp child/ or exp pediatrics/) not (exp adult/ or exp adolescent/)
114.	35 not 36
115.	limit 37 to English language
116.	exp patient care/
117.	exp team nursing/
118.	integrated health care system/
119.	health care/ or health service/ or nursing/ or patient care/ or rehabilitation/
120.	patient care planning/
121.	health care quality/
122.	public relations/
123.	health care access/
124.	program evaluation/
125.	(interdisciplin* or inter-disciplin* or interprofession* or inter-profession* or multidisciplin* or multi-disciplin* or multi-profession* or multiprofession* or transprofession* or trans-profession* or integrat* or network* or MDC or MDT or IDT).ti,ab.
126.	(team* adj2 (approach* or treat* or care* or caring or model* or plan* or strateg*)).ti,ab.
127.	((integrat* or comprehensive or collaborat* or model or approach or strateg* or program* or plan* or pathway or co-ordinat* or coordinat* or continuity or continuum) adj3 (care or caring or service* or health* or treat* or advis* or advice* or intervention* or manag* or team* or staff* or communicat* or relation* or inform* or practice* or evaluat*)).ti,ab.
128.	case management.ti,ab.
129.	(shared care or one-stop clinic* or one stop clinic* or patient management).ti,ab.
130.	((person-cent* or person cent* or patient-cent* or patient cent* or patient) adj2 (care or caring or health*)).ti,ab.
131.	((regular* or proactiv*) adj2 (review* or monitor* or check-up* or checkup* or followup* or follow-up*)).ti,ab.
132.	nurse practitioner/ or advanced practice nurse/ or adult nurse practitioner/
133.	nurse specialist/ or clinical nurse specialist/
134.	exp nurse/
135.	nursing discipline/ or community health nursing/ or neuroscience nursing/ or occupational health nursing/ or rehabilitation nursing/
136.	nurse attitude/
137.	exp nursing staff/

138.	nursing assistant/
139.	((specialist* or multiple sclerosis or MS) adj2 nurs*).ti,ab.
140.	((nurs* or nursing) adj (role or clinic* or practitioner* or care or service* or team)).ti,ab.
141.	exp physiotherapy/
142.	paramedical personnel/ or health care personnel/ or dietitian/ or health practitioner/ or health visitor/ or exp manual therapist/ or nursing assistant/ or nursing staff/ or occupational therapist/ or occupational therapy assistant/ or paramedical profession/ or exp pharmacist/ or physiotherapist/ or physiotherapist assistant/ or respiratory therapist/ or speech language pathologist/
143.	(health adj2 (professional* or aide* or personnel or community* or worker* or assistant*)).ti,ab.
144.	(physical therap* or physiotherap*).ti,ab.
145.	occupational therapy/
146.	exp rehabilitation/
147.	physical rehab*.ti,ab.
148.	occupational therap*.ti,ab.
149.	(key worker* or keyworker*).ti,ab.
150.	(social prescrib* or link worker* or community referral* or community health worker*).ti,ab.
151.	or/39-73
152.	38 and 74
153.	random*.ti,ab.
154.	factorial*.ti,ab.
155.	(crossover* or cross over*).ti,ab.
156.	((doubl* or singl*) adj blind*).ti,ab.
157.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
158.	crossover procedure/
159.	single blind procedure/
160.	randomized controlled trial/
161.	double blind procedure/
162.	or/76-84
163.	systematic review/
164.	meta-analysis/
165.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
166.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
167.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
168.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
169.	(search* adj4 literature).ab.
170.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
171.	cochrane.jw.
172.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
173.	or/86-95
174.	75 and (85 or 96)
175.	Clinical study/
176.	Observational study/

177.	Family study/
178.	Longitudinal study/
179.	Retrospective study/
180.	Prospective study/
181.	Cohort analysis/
182.	Follow-up/
183.	cohort*.ti,ab.
184.	105 and 106
185.	(cohort adj (study or studies or analys* or data)).ti,ab.
186.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
187.	((longitudinal or retrospective or prospective) and (study or studies or review or analys* or cohort* or data)).ti,ab.
188.	(before adj2 after adj2 (study or studies or data)).ti,ab.
189.	exp case control study/
190.	case control*.ti,ab.
191.	cross-sectional study/
192.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
193.	or/98-104,107-115
194.	75 and 116
195.	97 or 117

Cochrane Library (Wiley) search terms

#1.	MeSH descriptor: [Multiple Sclerosis] explode all trees
#2.	((multiple or disseminated) NEAR/2 scleros*):ti,ab
#3.	(encephalomyelitis disseminata or disseminated encephalomyelitis or ADEM):ti,ab
#4.	MS:ti
#5.	MeSH descriptor: [Myelitis, Transverse] this term only
#6.	transverse myelitis:ti,ab
#7.	(OR #1-#6)
#8.	MeSH descriptor: [Demyelinating Diseases] this term only
#9.	MeSH descriptor: [Demyelinating Autoimmune Diseases, CNS] this term only
#10.	(Demyelinat* NEAR/2 (syndrome* or disease* or autoimmun*)):ti,ab
#11.	(Chronic Cerebrospinal Venous Insufficiency or CCSVI):ti,ab
#12.	MeSH descriptor: [Venous Insufficiency] this term only and with qualifier(s): [diagnostic imaging - DG, cerebrospinal fluid - CF, complications - CO, diagnosis - DI, etiology - ET]
#13.	(Devic* NEXT (disease or syndrome)):ti,ab
#14.	((clinical* NEXT isolat*) NEXT syndrome*):ti,ab
#15.	((radiological* NEXT isolat*) NEXT syndrome*):ti,ab
#16.	MeSH descriptor: [Optic Neuritis] explode all trees
#17.	((neuromyelitis or neuritis or neuropapillitis) NEXT (retrobulbar or optic*)):ti,ab
#18.	(NMO or NMOSD):ti,ab
#19.	(OR #1-#18)
#20.	MeSH descriptor: [Patient Care Management] explode all trees
#21.	MeSH descriptor: [Delivery of Health Care, Integrated] this term only
#22.	MeSH descriptor: [Continuity of Patient Care] this term only

#23.	MeSH descriptor: [Quality of Health Care] this term only
#24.	MeSH descriptor: [Clinical Competence] this term only
#25.	MeSH descriptor: [Process Assessment, Health Care] this term only
#26.	MeSH descriptor: [Interprofessional Relations] explode all trees
#27.	MeSH descriptor: [Health Services Accessibility] explode all trees
#28.	MeSH descriptor: [Program Evaluation] this term only
#29.	(interdisciplin* or inter-disciplin* or interprofession* or inter-profession* or multidisciplin* or multi-disciplin* or multi-profession* or multiprofession* or transprofession* or trans-profession* or integrat* or network* or MDC or MDT or IDT):ti,ab
#30.	(team* NEAR/2 (approach* or treat* or care* or caring or model* or plan* or strateg*)):ti,ab
#31.	((integrat* or comprehensive or collaborat* or model or approach or strateg* or program* or plan* or pathway or co-ordinat* or coordinat* or continuity or continuum) NEAR/3 (care or caring or service* or health* or treat* or advis* or advice* or intervention* or manag* or team* or staff* or communicat* or relation* or inform* or practice* or evaluat*)):ti,ab
#32.	case management:ti,ab
#33.	("shared care" or (one NEXT stop NEXT clinic*) or "patient management"):ti,ab
#34.	((person NEXT cent* or (patient NEXT cent*) or patient) NEAR/2 (care or caring or health*)):ti,ab
#35.	((regular* or proactiv*) NEAR/2 (review* or monitor* or check-up* or checkup* or followup* or follow-up*)):ti,ab
#36.	MeSH descriptor: [Multiple Sclerosis] explode all trees and with qualifier(s): [nursing - NU]
#37.	MeSH descriptor: [Nursing] this term only
#38.	MeSH descriptor: [Specialties, Nursing] this term only
#39.	MeSH descriptor: [Advanced Practice Nursing] this term only
#40.	MeSH descriptor: [Community Health Nursing] this term only
#41.	MeSH descriptor: [Home Health Nursing] this term only
#42.	MeSH descriptor: [Neuroscience Nursing] this term only
#43.	MeSH descriptor: [Public Health Nursing] this term only
#44.	MeSH descriptor: [Rehabilitation Nursing] this term only
#45.	MeSH descriptor: [Nurse's Role] this term only
#46.	MeSH descriptor: [Nurses] explode all trees
#47.	MeSH descriptor: [Nursing Staff] explode all trees
#48.	((specialist* or multiple sclerosis or MS) NEAR/2 nurs*):ti,ab
#49.	((nurs* or nursing) NEAR (role or clinic* or practitioner* or care or service* or team)):ti,ab
#50.	MeSH descriptor: [Physical Therapists] this term only
#51.	MeSH descriptor: [Physical Therapy Department, Hospital] this term only
#52.	MeSH descriptor: [Allied Health Personnel] this term only
#53.	MeSH descriptor: [Community Health Workers] this term only
#54.	MeSH descriptor: [Home Health Aides] this term only
#55.	MeSH descriptor: [Licensed Practical Nurses] this term only
#56.	MeSH descriptor: [Nursing Assistants] this term only
#57.	MeSH descriptor: [Physical Therapist Assistants] this term only
#58.	(health NEAR/2 (professional* or aide* or personnel or community* or worker* or assistant*)):ti,ab
#59.	((physical NEXT therap*) or physiotherap*):ti,ab

#60.	MeSH descriptor: [Occupational Therapy] this term only
#61.	MeSH descriptor: [Rehabilitation] this term only
#62.	MeSH descriptor: [Physical Therapy Modalities] this term only
#63.	(physical NEXT rehab*):ti,ab
#64.	(occupational NEXT therap*):ti,ab
#65.	((key NEXT worker* or keyworker*):ti,ab
#66.	((social NEXT prescrib* or (link NEXT worker* or (community NEXT referral* or (community NEXT health NEXT worker*)):ti,ab
#67.	("community health worker*"):ti,ab
#68.	("community health worker" or "community health workers"):ti,ab
#69.	(OR #20-#68)
#70.	#19 AND #69
#71.	conference:pt or (clinicaltrials or trialsearch):so
#72.	#70 NOT #71

CINAHL (EBSCO) search terms

S35.	(MH "Multiple Sclerosis+")
S36.	TI ((multiple or disseminated) n2 scleros*) OR AB ((multiple or disseminated) n2 scleros*)
S37.	TI (encephalomyelitis disseminata or disseminated encephalomyelitis or ADEM) OR AB (encephalomyelitis disseminata or disseminated encephalomyelitis or ADEM)
S38.	TI MS
S39.	(MH "Myelitis, Transverse")
S40.	TI transverse myelitis OR AB transverse myelitis
S41.	(MM "Demyelinating Diseases")
S42.	(MM "Demyelinating Autoimmune Diseases, CNS")
S43.	TI (Demyelinat* N2 (syndrome* or disease* or autoimmun*)) OR AB (Demyelinat* N2 (syndrome* or disease* or autoimmun*))
S44.	TI (Chronic Cerebrospinal Venous Insufficiency or CCSVI) OR AB (Chronic Cerebrospinal Venous Insufficiency or CCSVI)
S45.	(MM "Venous Insufficiency/CF/CO/DI/ET")
S46.	TI ((clinical* isolat* or radiological* isolat*) N2 syndrome*) OR AB ((clinical* isolat* or radiological* isolat*) N2 syndrome*)
S47.	(MH "Optic Neuritis+")
S48.	TI ((neuromyelitis or neuritis or neuropapillitis) N2 (retrobulbar or optic*)) OR AB ((neuromyelitis or neuritis or neuropapillitis) N2 (retrobulbar or optic*))
S49.	TI (NMO or NMOSD) OR AB (NMO or NMOSD)
S50.	PT abstract or PT anecdote or PT audiovisual or PT bibliography or PT biography or PT book or PT book review or PT brief item or PT cartoon or PT commentary or PT computer program or PT editorial or PT games or PT glossary or PT historical material or PT interview or PT letter or PT listservs or PT masters thesis or PT obituary or PT pamphlet or PT pamphlet chapter or PT pictorial or PT poetry or PT proceedings or PT "questions and answers" or PT response or PT software or PT teaching materials or PT website
S51.	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
S52.	s17 not s16
S53.	TI ((social prescrib* or link worker* or community referral* or community health worker*)) OR AB ((social prescrib* or link worker* or community referral* or community health worker*))

S54.	TI ((key worker* or keyworker*)) OR AB ((key worker* or keyworker*))
S55.	TI occupational therap* OR AB occupational therap*
S56.	TI physical rehab* OR AB physical rehab*
S57.	(MM "Physical Therapy")
S58.	(MM "Rehabilitation")
S59.	(MM "Occupational Therapy")
S60.	TI ((physical therap* or physiotherap*)) OR AB ((physical therap* or physiotherap*))
S61.	TI ((health N2 (professional* or aide* or personnel or community* or worker* or assistant*))) OR AB ((health N2 (professional* or aide* or personnel or community* or worker* or assistant*)))
S62.	(MM "Physical Therapist Assistants")
S63.	(MM "Nursing Assistants")
S64.	(MM "Practical Nurses")
S65.	(MM "Home Health Aides")
S66.	(MM "Community Health Workers")
S67.	(MM "Allied Health Personnel")
S68.	(MM "Physical Therapists")
S69.	TI (((nurs* or nursing) N2 (role or clinic* or practitioner* or care or service* or team))) OR AB (((nurs* or nursing) N2 (role or clinic* or practitioner* or care or service* or team)))
S70.	TI (((specialist* or multiple sclerosis or MS) N2 nurs*)) OR AB (((specialist* or multiple sclerosis or MS) N2 nurs*))
S71.	(MH "Nursing Staff, Hospital")
S72.	(MH "Nurses+")
S73.	(MM "Nursing Role")
S74.	(MM "Neuroscience Nursing")
S75.	(MM "Community Health Nursing")
S76.	(MM "Advanced Practice Nurses")
S77.	(MM "Specialties, Nursing")
S78.	(MH "Multiple Sclerosis+/NU")
S79.	TI (((regular* or proactiv*) N2 (review* or monitor* or check-up* or checkup* or followup* or follow-up*))) OR AB (((regular* or proactiv*) N2 (review* or monitor* or check-up* or checkup* or followup* or follow-up*)))
S80.	TI (((person-cent* or person cent* or patient-cent* or patient cent* or patient) N2 (care or caring or health*))) OR AB (((person-cent* or person cent* or patient-cent* or patient cent* or patient) N2 (care or caring or health*)))
S81.	TI ((shared care or one-stop clinic* or one stop clinic* or patient management)) OR AB ((shared care or one-stop clinic* or one stop clinic* or patient management))
S82.	TI case management OR AB case management
S83.	TI (((integrat* or comprehensive or collaborat* or model or approach or strateg* or program* or plan* or pathway or co-ordinat* or coordinat* or continuity or continuum) N3 (care or caring or service* or health* or treat* or advis* or advice* or intervention* or manag* or team* or staff* or communicat* or relation* or inform* or practice* or evaluat*))) OR AB (((integrat* or comprehensive or collaborat* or model or approach or strateg* or program* or plan* or pathway or co-ordinat* or coordinat* or continuity or continuum) N3 (care or caring or service* or health* or treat* or advis* or advice* or intervention* or manag* or team* or staff* or communicat* or relation* or inform* or practice* or evaluat*)))
S84.	TI ((team* N2 (approach* or treat* or care* or caring or model* or plan* or strateg*))) OR AB ((team* N2 (approach* or treat* or care* or caring or model* or plan* or strateg*)))

S85.	TI ((interdisciplin* or inter-disciplin* or interprofession* or inter-profession* or multidisciplin* or multi-disciplin* or multi-profession* or multiprofession* or transprofession* or trans-profession* or integrat* or network* or MDC or MDT or IDT)) OR AB ((interdisciplin* or inter-disciplin* or interprofession* or inter-profession* or multidisciplin* or multi-disciplin* or multi-profession* or multiprofession* or transprofession* or trans-profession* or integrat* or network* or MDC or MDT or IDT))
S86.	(MM "Program Evaluation")
S87.	(MH "Health Services Accessibility+")
S88.	(MH "Interprofessional Relations+")
S89.	(MM "Process Assessment (Health Care)")
S90.	(MM "Clinical Competence")
S91.	(MM "Quality of Health Care")
S92.	(MM "Continuity of Patient Care")
S93.	(MH "Multidisciplinary Care Team+")
S94.	(MM "Health Care Delivery, Integrated")
S95.	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
S96.	S18 AND S61

AMED (Ovid) search terms

1.	exp Multiple Sclerosis/
2.	((multiple or disseminated) adj2 scleros*).ti,ab.
3.	encephalomyelitis disseminata.ti,ab.
4.	MS.ti.
5.	transverse myelitis.ti,ab.
6.	(Demyelinat* adj2 (syndrome* or disease* or autoimmun*)).ti,ab.
7.	(Devic* adj (disease or syndrome)).ti,ab.
8.	((clinical* isolat* or radiological* isolat*) adj2 syndrome*).ti,ab.
9.	((neuromyelitis or neuritis or neuropapillitis) adj2 (retrobulbar or optic*)).ti,ab.
10.	(NMO or NMOSD).ti,ab.
11.	or/1-10
12.	case report/
13.	(letter or comment*).ti.
14.	or/12-13
15.	randomized controlled trial/ or random*.ti,ab.
16.	14 not 15
17.	animals/ not humans/
18.	(rat or rats or rodent* or mouse or mice).ti.
19.	or/16-18
20.	11 not 19
21.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp Middle Aged/ or exp aged/)
22.	20 not 21
23.	"Delivery of health care"/
24.	exp Patient care management/

25.	"Continuity of patient care"/
26.	"quality of health care"/
27.	clinical competence/
28.	exp Interprofessional relations/
29.	exp Health services accessibility/
30.	Program evaluation/
31.	(interdisciplin* or inter-disciplin* or interprofession* or inter-profession* or multidisciplin* or multi-disciplin* or multi-profession* or multiprofession* or transprofession* or trans-profession* or integrat* or network* or MDC or MDT or IDT).ti,ab.
32.	(team* adj2 (approach* or treat* or care* or caring or model* or plan* or strateg*)).ti,ab.
33.	((integrat* or comprehensive or collaborat* or model or approach or strateg* or program* or plan* or pathway or co-ordinat* or coordinat* or continuity or continuum) adj3 (care or caring or service* or health* or treat* or advis* or advice* or intervention* or manag* or team* or staff* or communicat* or relation* or inform* or practice* or evaluat*)).ti,ab.
34.	case management.ti,ab.
35.	(shared care or one-stop clinic* or one stop clinic* or patient management).ti,ab.
36.	((person-cent* or person cent* or patient-cent* or patient cent* or patient) adj2 (care or caring or health*)).ti,ab.
37.	((regular* or proactiv*) adj2 (review* or monitor* or check-up* or checkup* or followup* or follow-up*)).ti,ab.
38.	nursing/
39.	Rehabilitation nursing/
40.	Nurses role/
41.	exp Nurses/
42.	exp Nursing staff/
43.	((specialist* or multiple sclerosis or MS) adj2 nurs*).ti,ab.
44.	((nurs* or nursing) adj (role or clinic* or practitioner* or care or service* or team)).ti,ab.
45.	physiotherapists/
46.	allied health personnel/
47.	community health nursing/ or home care services/
48.	(health adj2 (professional* or aide* or personnel or community* or worker* or assistant*)).ti,ab.
49.	(physical therap* or physiotherap*).ti,ab.
50.	occupational therapists/
51.	Rehabilitation/
52.	physical rehab*.ti,ab.
53.	occupational therap*.ti,ab.
54.	(key worker* or keyworker*).ti,ab.
55.	(social prescrib* or link worker* or community referral* or community health worker*).ti,ab.
56.	or/23-55
57.	22 and 56

Epistemonikos search terms

2.	((advanced_title_en:(multiple sclerosis) OR advanced_abstract_en:(multiple sclerosis)) AND ((advanced_title_en:(care OR nurs* OR rehab* OR health professional OR specialist OR multi-disciplinary OR co-ordinate OR physiotherapist OR occupational therap*) OR advanced_abstract_en:(care OR nurs* OR rehab* OR health
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	professional OR specialist OR multi-disciplinary OR co-ordinate OR physiotherapist OR occupational therap*)))
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A.3 Non-pharmacological management of fatigue

This literature search strategy was used for the following review:

- For adults with MS, including people receiving palliative care, what is the clinical and cost effectiveness of non-pharmacological interventions for fatigue?

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 3: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	01 January 2014 – 08 September 2021	Randomised controlled trials Systematic review studies Exclusions (animal studies, letters, comments, children)
Embase (OVID)	01 January 2014 – 08 September 2021	Randomised controlled trials Systematic review studies Exclusions (animal studies, letters, comments, conference abstracts, children)
The Cochrane Library (Wiley)	Cochrane Reviews 2014 to 2021 Issue 9 of 12 CENTRAL 2014 to 2021 Issue 9 of 12	None Exclusions (conference abstracts & clinical trials)
CINAHL, Current Nursing and Allied Health Literature (EBSCO)	01 January 2014 – 08 September 2021	Human; Clinical Queries: Therapy - High Sensitivity, Review - High Sensitivity, Qualitative - High Sensitivity; Age Groups: All Adult; Language: English Exclusions (Medline Records)
Epistemonikos (The Epistemonikos Foundation)	01 January 2014 – 08 September 2021	Systematic Reviews Exclusions (Cochrane Reviews)

Medline (Ovid) search terms

194.	exp Multiple Sclerosis/
195.	((multiple or disseminated) adj2 scleros*).ti,ab.
196.	encephalomyelitis disseminata.ti,ab.
197.	MS.ti.
198.	Myelitis, Transverse/

199.	transverse myelitis.ti,ab.
200.	or/1-6
201.	letter/
202.	editorial/
203.	news/
204.	exp historical article/
205.	Anecdotes as Topic/
206.	comment/
207.	case report/
208.	(letter or comment*).ti.
209.	or/8-15
210.	randomized controlled trial/ or random*.ti,ab.
211.	16 not 17
212.	animals/ not humans/
213.	exp Animals, Laboratory/
214.	exp Animal Experimentation/
215.	exp Models, Animal/
216.	exp Rodentia/
217.	(rat or rats or rodent* or mouse or mice).ti.
218.	or/18-24
219.	7 not 25
220.	limit 26 to English language
221.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
222.	27 not 28
223.	fatigue/ or mental fatigue/ or muscle fatigue/
224.	(fatigue* or exhaust* or tired* or weary or weariness or weak* or letharg* or langour* or lassitude or drowsiness or overtired* or sluggish* or debillitat* or enervat* or burn* out or burnout).ti,ab.
225.	((deplet* or low* or lack* or limit* or loss or lost or drain* or down or dull* or diminish* or reduce*) adj2 (energy or strength or stamina)).ti,ab.
226.	or/30-32
227.	29 and 33
228.	exp Rehabilitation/
229.	"Activities of Daily Living"/
230.	exp Physical Therapy Modalities/
231.	Self care/
232.	Self-Management/
233.	self efficacy/
234.	patient care team/
235.	Patient Education as Topic/
236.	Ambulatory care/
237.	Dependent Ambulation/
238.	exp orthotic devices/
239.	Self-Help Devices/

240.	(interdisciplinary or multidisciplinary or inter disciplinary or multi disciplinary or MDT or home based or non pharmacological or non pharma or nonpharmacological).ti,ab.
241.	(rehab* or neurorehab*).ti,ab.
242.	((self* or own or personal* or alone or tailor* or individual* or specific) adj3 (efficacy or treatment* or programme* or program* or technique* or manag* or intervention* or therap* or train* or strateg* or method* or counsel* or care* or caring or device* or aid*).ti,ab.
243.	((patient* or health) adj2 (teach* or educat* or program* or train*).ti,ab.
244.	(orthotic* or orthos*).ti,ab.
245.	((treatment* or therap* or intervention* or energy) adj2 (strateg* or method* or programme* or program* or technique* or manag* or train*).ti,ab.
246.	((lifestyle* or life) adj2 (choice* or program*).ti,ab.
247.	((energy or fatigue) adj2 (effectiv* or conserv*).ti,ab.
248.	Transcutaneous Electrical Nerve Stimulation/
249.	Transcranial Magnetic Stimulation/
250.	Transcranial Direct Current Stimulation/
251.	(TENS or electroanalgesi* or electro analgesi*).ti,ab.
252.	(electric* nerve adj2 stimulation adj2 (transcutaneous or percutaneous or analgesi*).ti,ab.
253.	(electrostimulation adj2 (transcutaneous or percutaneous or analgesi*).ti,ab.
254.	((transcranial or non-invasive or noninvasive) adj3 stimulation).ti,ab.
255.	FACETS.ti,ab.
256.	(fatima or "overcom* MS" or "get* adj2 gri").ti,ab.
257.	((("whole body" or local*) adj vibration*).ti,ab.
258.	((vibration or WBV) adj therap*).ti,ab.
259.	"hyperbaric oxygen".ti,ab.
260.	exp Complementary therapies/
261.	((complementary or alternative or homeopath* or naturopath* or holistic) adj3 (therap* or treat* or care or caring or practic* or medicine* or intervention*).ti,ab.
262.	(psychotherap* or hypnosis or hypnotherap* or hydrotherap* or ai chi or acupunctur* or reflexo* or massage).ti,ab.
263.	Mindfulness/
264.	Relaxation/
265.	Cognitive Behavioral Therapy/
266.	Executive function/
267.	(mindfulness or relax* or meditat* or cognit* or CBT or dual task).ti,ab.
268.	((executive or cognitive) adj function*).ti,ab.
269.	exp Exercise therapy/
270.	Postural Balance/
271.	exercise/ or gymnastics/ or muscle stretching exercises/ or exp physical conditioning, human/ or exp running/ or swimming/ or exp walking/
272.	exp Physical fitness/
273.	((vestibular or balanc*) adj2 therap*).ti,ab.
274.	(exercising or exercise* or aerobic* or fitness).ti,ab.
275.	((physical* or muscle* or muscular or core or postur* or cardio*) adj2 (endurance or exertion or stretch* or stand* or splinting or stability or strength* or balanc* or control or activ* or train* or condition*).ti,ab.
276.	((resistance or weight or gait or ambulat* or balanc*) adj2 (technics or techniques or train* or workout* or routine* or intervention*).ti,ab.

277.	(tai ji or tai chi or taichi or taiji or taijiquan).ti,ab.
278.	(gym* or calisthenics or pilates or yoga or swim* or run* or walk* or danc* or sport*).ti,ab.
279.	exp Diet/
280.	(diet* or nutrition*).ti,ab.
281.	(Mediterranean or keto* or fast* or paleo* or Jelinek or wholefood* or "plant-based" or vegan or vegetarian or healthy eat*).ti,ab.
282.	((dairy or gluten or meat or fats or fat) adj2 (free or remov* or restrict* or reduc* or "cut* out" or minimis* or lower* or control*).ti,ab.
283.	Computer-Assisted Instruction/ or Virtual Reality/ or Computer Simulation/
284.	video games/
285.	telemedicine/ or telerehabilitation/
286.	(exergam* or "exer gam*" or "fitness gam*" or gamercis* or "virtual reality" or video* or online or internet* or computer* or wiifit or gaming technology or web* or e*health or tele*).ti,ab.
287.	(robot* or "robot assist*" or exoskeleton* or exosuit*).ti,ab.
288.	Clothing/
289.	lycra.ti,ab.
290.	(cooling adj2 (device* or clothing or clothes or cloth or garment*).ti,ab.
291.	or/35-97
292.	34 and 98
293.	randomized controlled trial.pt.
294.	controlled clinical trial.pt.
295.	randomi#ed.ti,ab.
296.	placebo.ab.
297.	randomly.ti,ab.
298.	Clinical Trials as topic.sh.
299.	trial.ti.
300.	or/100-106
301.	Meta-Analysis/
302.	exp Meta-Analysis as Topic/
303.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
304.	((systematic* or evidence*) adj3 (review* or overview*).ti,ab.
305.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
306.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
307.	(search* adj4 literature).ab.
308.	(medline or pubmed or cochrane or embase or psychlit or psychlit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
309.	cochrane.jw.
310.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
311.	or/108-117
312.	99 and (107 or 118)

Embase (Ovid) search terms

196.	exp *Multiple Sclerosis/
197.	((multiple or disseminated) adj2 scleros*).ti,ab.

198.	encephalomyelitis disseminata.ti,ab.
199.	MS.ti.
200.	myelitis/
201.	transverse myelitis.ti,ab.
202.	or/1-6
203.	letter.pt. or letter/
204.	note.pt.
205.	editorial.pt.
206.	(conference abstract or conference paper).pt.
207.	case report/ or case study/
208.	(letter or comment*).ti.
209.	or/8-13
210.	randomized controlled trial/ or random*.ti,ab.
211.	14 not 15
212.	animal/ not human/
213.	nonhuman/
214.	exp Animal Experiment/
215.	exp Experimental Animal/
216.	animal model/
217.	exp Rodent/
218.	(rat or rats or rodent* or mouse or mice).ti.
219.	or/16-23
220.	7 not 24
221.	(exp child/ or exp pediatrics/) not (exp adult/ or exp adolescent/)
222.	25 not 26
223.	limit 27 to English language
224.	fatigue/ or exhaustion/ or lassitude/ or muscle fatigue/
225.	dysthymia/
226.	(fatigue* or exhaust* or tired* or weary or weariness or weak* or letharg* or langour* or lassitude or drowsiness or overtired* or sluggish* or debillitat* or enervat* or burn* out or burnout).ti,ab.
227.	((deplet* or low* or lack* or limit* or loss or lost or drain* or down or dull* or diminish* or reduce*) adj2 (energy or strength or stamina)).ti,ab.
228.	or/29-32
229.	exp rehabilitation/
230.	daily life activity/
231.	exp physiotherapy/
232.	self care/
233.	self concept/
234.	patient care/
235.	patient education/
236.	ambulatory care/
237.	walking difficulty/
238.	exp orthosis/
239.	self help device/

240.	(interdisciplinary or multidisciplinary or inter disciplinary or multi disciplinary or MDT or home based or non pharmacological or non pharma or nonpharmacological).ti,ab.
241.	(rehab* or neurorehab*).ti,ab.
242.	((self* or own or personal* or alone or tailor* or individual* or specific) adj3 (efficacy or treatment* or programme* or program* or technique* or manag* or intervention* or therap* or train* or strateg* or method* or counsel* or care* or caring or device* or aid*).ti,ab.
243.	((patient* or health) adj2 (teach* or educat* or program* or train*).ti,ab.
244.	(orthotic* or orthos*).ti,ab.
245.	((treatment* or therap* or intervention* or energy) adj2 (strateg* or method* or programme* or program* or technique* or manag* or train*).ti,ab.
246.	((lifestyle* or life) adj2 (choice* or program*).ti,ab.
247.	((energy or fatigue) adj2 (effectiv* or conserv*).ti,ab.
248.	transcutaneous electrical nerve stimulation/
249.	transcranial magnetic stimulation/
250.	transcranial direct current stimulation/
251.	(TENS or electroanalgesi* or electro analgesi*).ti,ab.
252.	(electric* nerve adj2 stimulation adj2 (transcutaneous or percutaneous or analgesi*).ti,ab.
253.	(electrostimulation adj2 (transcutaneous or percutaneous or analgesi*).ti,ab.
254.	((transcranial or non-invasive or noninvasive) adj3 stimulation).ti,ab.
255.	FACETS.ti,ab.
256.	(fatima or "overcom* MS" or "get* adj2 gri").ti,ab.
257.	((("whole body" or local*) adj vibration*).ti,ab.
258.	((vibration or WBV) adj therap*).ti,ab.
259.	"hyperbaric oxygen".ti,ab.
260.	exp alternative medicine/
261.	((complementary or alternative or homeopath* or naturopath* or holistic) adj3 (therap* or treat* or care or caring or practic* or medicine* or intervention*).ti,ab.
262.	(psychotherap* or hypnosis or hypnotherap* or hydrotherap* or ai chi or acupunctur* or reflexo* or massage).ti,ab.
263.	mindfulness/
264.	leisure/
265.	cognitive behavioral therapy/
266.	executive function/
267.	(mindfulness or relax* or meditat* or cognit* or dual task or CBT).ti,ab.
268.	((executive or cognitive) adj function*).ti,ab.
269.	exp kinesiotherapy/
270.	body equilibrium/
271.	exp "physical activity, capacity and performance"/
272.	physical education/
273.	stretching exercise/
274.	fitness/
275.	((vestibular or balanc*) adj2 therap*).ti,ab.
276.	(exercising or exercise* or aerobic* or fitness).ti,ab.
277.	((physical* or muscle* or muscular or core or postur* or cardio*) adj2 (endurance or exertion or stretch* or stand* or splinting or stability or strength* or balanc* or control or activ* or train* or condition*).ti,ab.

278.	((resistance or weight or gait or ambulat* or balanc*) adj2 (technics or techniques or train* or workout* or routine* or intervention*)).ti,ab.
279.	(tai ji or tai chi or taichi or taiji or taijiquan).ti,ab.
280.	(gym* or calisthenics or pilates or yoga or swim* or run* or walk* or sport*).ti,ab.
281.	exp diet/
282.	(diet* or nutrition*).ti,ab.
283.	(Mediterranean or keto* or fast* or paleo* or Jelinek or wholefood* or "plant-based" or vegan or vegetarian or healthy eat*).ti,ab.
284.	((dairy or gluten or meat or fats or fat) adj2 (free or remov* or restrict* or reduc* or "cut* out" or minimis* or lower* or control*)).ti,ab.
285.	teaching/
286.	exp computer simulation/
287.	video game/
288.	telemedicine/ or telerehabilitation/
289.	(exergam* or "exer gam*" or "fitness gam*" or gamercis* or "virtual reality" or video* or online or internet* or computer* or wiifit or gaming technology or web* or e*health or tele*).ti,ab.
290.	(robot* or "robot assist*" or exoskeleton* or exosuit*).ti,ab.
291.	clothing/
292.	lycra.ti,ab.
293.	(cooling adj2 (device* or clothing or clothes or cloth or garment*)).ti,ab.
294.	or/34-98
295.	28 and 33 and 99
296.	random*.ti,ab.
297.	factorial*.ti,ab.
298.	(crossover* or cross over*).ti,ab.
299.	((doubl* or singl*) adj blind*).ti,ab.
300.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
301.	crossover procedure/
302.	single blind procedure/
303.	randomized controlled trial/
304.	double blind procedure/
305.	or/101-109
306.	systematic review/
307.	meta-analysis/
308.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
309.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
310.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
311.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
312.	(search* adj4 literature).ab.
313.	(medline or pubmed or cochrane or embase or psychlit or psychlit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
314.	cochrane.jw.
315.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
316.	or/111-120

317.	100 and (110 or 121)
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Cochrane Library (Wiley) search terms

#73.	MeSH descriptor: [Multiple Sclerosis] explode all trees
#74.	((multiple or disseminated) NEAR/2 scleros*):ti,ab
#75.	(encephalomyelitis disseminata):ti,ab
#76.	MS:ti
#77.	MeSH descriptor: [Myelitis, Transverse] this term only
#78.	transverse myelitis:ti,ab
#79.	(OR #1-#6)
#80.	MeSH descriptor: [Fatigue] this term only
#81.	MeSH descriptor: [Mental Fatigue] this term only
#82.	MeSH descriptor: [Muscle Fatigue] this term only
#83.	(fatigue* or exhaust* or tired* or weary or weariness or weak* or letharg* or langour* or lassitude or drowsiness or overtired* or sluggish* or debillitat* or enervat* or burn* out or burnout):ti,ab
#84.	((deplet* or low* or lack* or limit* or loss or lost or drain* or down or dull* or diminish* or reduce*) NEAR/2 (energy or strength or stamina)):ti,ab
#85.	(OR #8-#12)
#86.	MeSH descriptor: [Rehabilitation] explode all trees
#87.	MeSH descriptor: [Activities of Daily Living] this term only
#88.	MeSH descriptor: [Physical Therapy Modalities] explode all trees
#89.	MeSH descriptor: [Self Care] this term only
#90.	MeSH descriptor: [Self-Management] this term only
#91.	MeSH descriptor: [Self Efficacy] this term only
#92.	MeSH descriptor: [Patient Care Team] this term only
#93.	MeSH descriptor: [Patient Education as Topic] this term only
#94.	MeSH descriptor: [Ambulatory Care] this term only
#95.	MeSH descriptor: [Dependent Ambulation] this term only
#96.	MeSH descriptor: [Orthotic Devices] explode all trees
#97.	MeSH descriptor: [Self-Help Devices] this term only
#98.	(interdisciplinary or multidisciplinary or inter disciplinary or multi disciplinary or MDT or home based or non pharmacological or non pharma or nonpharmacological):ti,ab
#99.	(rehab* or neurorehab*):ti,ab
#100.	((self* or own or personal* or alone or tailor* or individual* or specific) NEAR/3 (efficacy or treatment* or programme* or program* or technique* or manag* or intervention* or therap* or train* or strateg* or method* or counsel* or care* or caring or device* or aid*)):ti,ab
#101.	((patient* or health) NEAR/2 (teach* or educat* or program* or train*)):ti,ab
#102.	(orthotic* or orthos*):ti,ab
#103.	((treatment* or therap* or intervention* or energy) NEAR/2 (strateg* or method* or programme* or program* or technique* or manag* or train*)):ti,ab
#104.	(lifestyle* or life) NEAR/2 (choice* or program*):ti,ab
#105.	((energy or fatigue) NEAR/2 (effectiv* or conserv*)):ti,ab
#106.	MeSH descriptor: [Transcutaneous Electric Nerve Stimulation] this term only
#107.	MeSH descriptor: [Transcranial Magnetic Stimulation] this term only
#108.	MeSH descriptor: [Transcranial Direct Current Stimulation] this term only
#109.	(TENS or electroanalgesi* or electro analgesi*):ti,ab

#110.	((electric* NEXT nerve) NEAR/2 stimulation NEAR/2 (transcutaneous or percutaneous or analgesi*)):ti,ab
#111.	(electrostimulation NEAR/2 (transcutaneous or percutaneous or analgesi*)):ti,ab
#112.	((transcranial or non-invasive or noninvasive) NEAR/3 stimulation):ti,ab
#113.	FACETS:ti,ab
#114.	(fatima or "overcom* MS" or "get* NEAR/2 gri*"):ti,ab
#115.	((("whole body" or local*) NEAR vibration*)):ti,ab
#116.	((vibration or WBV) NEAR therap*):ti,ab
#117.	hyperbaric oxygen:ti,ab
#118.	MeSH descriptor: [Complementary Therapies] explode all trees
#119.	((complementary or alternative or homeopath* or naturopath* or holistic) NEAR/3 (therap* or treat* or care or caring or practic* or medicine* or intervention*)):ti,ab
#120.	(psychotherap* or hypnosis or hypnotherap* or hydrotherap* or ai chi or acupunctur* or reflexo* or massage):ti,ab
#121.	MeSH descriptor: [Mindfulness] this term only
#122.	MeSH descriptor: [Relaxation] this term only
#123.	MeSH descriptor: [Cognitive Behavioral Therapy] this term only
#124.	MeSH descriptor: [Executive Function] this term only
#125.	(mindfulness or relax* or meditat* or cognit* or "dual task" or CBT):ti,ab
#126.	((executive or cognitive) NEAR function*):ti,ab
#127.	MeSH descriptor: [Exercise Therapy] explode all trees
#128.	MeSH descriptor: [Postural Balance] this term only
#129.	MeSH descriptor: [Exercise] this term only
#130.	MeSH descriptor: [Gymnastics] this term only
#131.	MeSH descriptor: [Muscle Stretching Exercises] this term only
#132.	MeSH descriptor: [Physical Conditioning, Human] explode all trees
#133.	MeSH descriptor: [Running] explode all trees
#134.	MeSH descriptor: [Swimming] this term only
#135.	MeSH descriptor: [Walking] explode all trees
#136.	MeSH descriptor: [Physical Fitness] explode all trees
#137.	((vestibular or balanc*) NEAR/2 (therap*)):ti,ab
#138.	(exercising or exercise* or aerobic* or fitness):ti,ab
#139.	((physical* or muscle* or muscular or core or postur* or cardio*) NEAR/2 (endurance or exertion or stretch* or stand* or splinting or stability or strength* or balanc* or control or activ* or train* or condition*)):ti,ab
#140.	((resistance or weight or gait or ambulat* or balanc*) NEAR/2 (technics or techniques or train* or workout* or routine* or intervention*)):ti,ab
#141.	(tai ji or tai chi or taichi or taiji or taijiquan):ti,ab
#142.	(gym* or calisthenics or pilates or yoga or swim* or run* or walk* or sport*):ti,ab
#143.	MeSH descriptor: [Diet] explode all trees
#144.	(diet* or nutrition*):ti,ab
#145.	(Mediterranean or keto* or fast* or paleo* or Jelinek or wholefood* or "plant-based" or vegan or vegetarian or healthy eat*):ti,ab
#146.	((dairy or gluten or meat or fats or fat) NEAR/2 (free or remov* or restrict* or reduc* or "cut* out" or minimis* or lower* or control*)):ti,ab
#147.	MeSH descriptor: [Computer-Assisted Instruction] this term only
#148.	MeSH descriptor: [Virtual Reality] this term only

#149.	MeSH descriptor: [Computer Simulation] this term only
#150.	MeSH descriptor: [Video Games] this term only
#151.	MeSH descriptor: [Telemedicine] this term only
#152.	MeSH descriptor: [Telerehabilitation] this term only
#153.	(exergam* or "exer gam*" or "fitness gam*" or gamercis* or "virtual reality" or video* or online or internet* or computer* or wiifit or gaming technology or web* or e*health or tele*):ti,ab
#154.	(robot* or "robot assist*" or exoskeleton* or exosuit*):ti,ab
#155.	MeSH descriptor: [Clothing] this term only
#156.	lycra:ti,ab
#157.	(cooling NEAR/2 (device* or clothing or clothes or cloth or garment*)):ti,ab
#158.	(OR #14-#85)
#159.	#7 AND #13 AND #86
#160.	conference:pt or (clinicaltrials or trialsearch):so
#161.	#87 NOT #88

CINAHL (EBSCO) search terms

S97.	(MH "Multiple Sclerosis+")
S98.	TI ((multiple or disseminated) n2 scleros*) OR AB ((multiple or disseminated) n2 scleros*)
S99.	TI (encephalomyelitis disseminata or disseminated encephalomyelitis or ADEM) OR AB (encephalomyelitis disseminata or disseminated encephalomyelitis or ADEM)
S100.	TI MS
S101.	(MH "Myelitis, Transverse")
S102.	TI transverse myelitis OR AB transverse myelitis
S103.	S1 OR S2 OR S3 OR S4 OR S5 OR S6
S104.	(MH "Fatigue") OR (MH "Mental Fatigue") OR (MH "Muscle Fatigue")
S105.	TI ((fatigue* or exhaust* or tired* or weary or weariness or weak* or letharg* or langour* or lassitude or drowsiness or overtired* or sluggish* or debilitat* or enervat* or burn* out or burnout)) OR AB ((fatigue* or exhaust* or tired* or weary or weariness or weak* or letharg* or langour* or lassitude or drowsiness or overtired* or sluggish* or debilitat* or enervat* or burn* out or burnout))
S106.	TI (((deplet* or low* or lack* or limit* or loss or lost or drain* or down or dull* or diminish* or reduce*) N2 (energy or strength or stamina))) OR AB (((deplet* or low* or lack* or limit* or loss or lost or drain* or down or dull* or diminish* or reduce*) N2 (energy or strength or stamina)))
S107.	S8 OR S9 OR S10
S108.	(MH "Rehabilitation+")
S109.	(MH "Activities of Daily Living")
S110.	(MH "Physical Therapy+")
S111.	(MH "Self Care") OR (MH "Self-Management")
S112.	(MH "Self-Efficacy")
S113.	(MH "Multidisciplinary Care Team") OR (MH "Nutritional Support Team")
S114.	(MH "Patient Education")
S115.	(MH "Ambulatory Care")
S116.	(MH "Orthoses+")
S117.	(MH "Assistive Technology Devices") OR (MH "Ambulation Aids+")
S118.	TI ((interdisciplinary or multidisciplinary or inter disciplinary or multi disciplinary or MDT or home based or non pharmacological or non pharma or nonpharmacological)) OR

	AB ((interdisciplinary or multidisciplinary or inter disciplinary or multi disciplinary or MDT or home based or non pharmacological or non pharma or nonpharmacological))
S119.	TI ((rehab* or neurorehab*)) OR AB ((rehab* or neurorehab*))
S120.	TI (((self* or own or personal* or alone or tailor* or individual* or specific) N3 (efficacy or treatment* or programme* or program* or technique* or manag* or intervention* or therap* or train* or strateg* or method* or counsel* or care* or caring or device* or aid*))) OR AB (((self* or own or personal* or alone or tailor* or individual* or specific) N3 (efficacy or treatment* or programme* or program* or technique* or manag* or intervention* or therap* or train* or strateg* or method* or counsel* or care* or caring or device* or aid*)))
S121.	TI (((patient* or health) N2 (teach* or educat* or program* or train*))) OR AB (((patient* or health) N2 (teach* or educat* or program* or train*)))
S122.	TI ((orthotic* or orthos*)) OR AB ((orthotic* or orthos*))
S123.	TI (((treatment* or therap* or intervention* or energy) N2 (strateg* or method* or programme* or program* or technique* or manag* or train*))) OR AB (((treatment* or therap* or intervention* or energy) N2 (strateg* or method* or programme* or program* or technique* or manag* or train*)))
S124.	TI (((lifestyle* or life) N2 (choice* or program*))) OR AB (((lifestyle* or life) N2 (choice* or program*)))
S125.	TI (((energy or fatigue) N2 (effectiv* or TI serv*))) OR AB (((energy or fatigue) N2 (effectiv* or conserv*)))
S126.	(MH "Transcutaneous Electric Nerve Stimulation")
S127.	(MH "Transcranial Magnetic Stimulation")
S128.	(MH "Transcranial Direct Current Stimulation")
S129.	TI ((TENS or electroanalgesi* or electro analgesi*)) OR AB ((TENS or electroanalgesi* or electro analgesi*))
S130.	TI ((electric* nerve N2 stimulation N2 (transcutaneous or percutaneous or analgesi*))) OR AB ((electric* nerve N2 stimulation N2 (transcutaneous or percutaneous or analgesi*)))
S131.	TI ((electrostimulation N2 (transcutaneous or percutaneous or analgesi*))) OR AB ((electrostimulation N2 (transcutaneous or percutaneous or analgesi*)))
S132.	TI (((transcranial or non-invasive or noninvasive) N3 stimulation)) OR AB (((transcranial or non-invasive or noninvasive) N3 stimulation))
S133.	TI FACETS OR AB FACETS
S134.	TI ((fatima or "overcom* MS" or "get* N2 gri*")) OR AB ((fatima or "overcom* MS" or "get* N2 gri*"))
S135.	TI ((("whole body" or local*) N1 vibration*)) OR AB ((("whole body" or local*) N1 vibration*))
S136.	TI (((vibration or WBV) N1 therap*)) OR AB (((vibration or WBV) N1 therap*))
S137.	TI "hyperbaric oxygen" OR AB "hyperbaric oxygen"
S138.	(MH "Alternative Therapies+")
S139.	TI (((complementary or alternative or homeopath* or naturopath* or holistic) N3 (therap* or treat* or care or caring or practic* or medicine* or intervention*))) OR AB (((complementary or alternative or homeopath* or naturopath* or holistic) N3 (therap* or treat* or care or caring or practic* or medicine* or intervention*)))
S140.	TI ((psychotherap* or hypnosis or hypnotherap* or hydrotherap* or ai chi or acupunctur* or reflexo* or massage)) OR AB ((psychotherap* or hypnosis or hypnotherap* or hydrotherap* or ai chi or acupunctur* or reflexo* or massage))
S141.	(MH "Mindfulness")
S142.	(MH "Relaxation") OR (MH "Relaxation Techniques+")
S143.	(MH "Cognitive Therapy")
S144.	(MH "Executive Function")

S145.	TI ((mindfulness or relax* or meditat* or cognit* or CBT or dual task)) OR AB ((mindfulness or relax* or meditat* or cognit* or CBT or dual task))
S146.	TI (((executive or cognitive) N1 function*)) OR AB (((executive or cognitive) N1 function*))
S147.	(MH "Therapeutic Exercise+")
S148.	(MH "Balance, Postural")
S149.	(MH "Exercise+")
S150.	(MH "Muscle Strengthening+")
S151.	(MH "Physical Fitness+")
S152.	TI (((vestibular or balanc*) N2 therap*)) OR AB (((vestibular or balanc*) N2 therap*))
S153.	TI ((exercising or exercise* or aerobic* or fitness)) OR AB ((exercising or exercise* or aerobic* or fitness))
S154.	TI (((physical* or muscle* or muscular or core or postur* or cardio*) N2 (endurance or exertion or stretch* or stand* or splinting or stability or strength* or balanc* or control or activ* or train* or condition*))) OR AB (((physical* or muscle* or muscular or core or postur* or cardio*) N2 (endurance or exertion or stretch* or stand* or splinting or stability or strength* or balanc* or control or activ* or train* or condition*)))
S155.	TI (((resistance or weight or gait or ambulat* or balanc*) N2 (technics or techniques or train* or workout* or routine* or intervention*))) OR AB (((resistance or weight or gait or ambulat* or balanc*) N2 (technics or techniques or train* or workout* or routine* or intervention*)))
S156.	TI ((tai ji or tai chi or taichi or taiji or taijiquan)) OR AB ((tai ji or tai chi or taichi or taiji or taijiquan))
S157.	TI ((gym* or calisthenics or pilates or yoga or swim* or run* or walk* or danc* or sport*)) OR AB ((gym* or calisthenics or pilates or yoga or swim* or run* or walk* or danc* or sport*))
S158.	(MH "Diet+")
S159.	TI ((diet* or nutrition*)) OR AB ((diet* or nutrition*))
S160.	TI ((Mediterranean or keto* or fast* or paleo* or Jelinek or wholefood* or "plant-based" or vegan or vegetarian or healthy eat*)) OR AB ((Mediterranean or keto* or fast* or paleo* or Jelinek or wholefood* or "plant-based" or vegan or vegetarian or healthy eat*))
S161.	TI (((dairy or gluten or meat or fats or fat) N2 (free or remov* or restrict* or reduc* or "cut* out" or minimis* or lower* or control*))) OR AB (((dairy or gluten or meat or fats or fat) N2 (free or remov* or restrict* or reduc* or "cut* out" or minimis* or lower* or control*)))
S162.	(MH "Computer Assisted Instruction")
S163.	(MH "Virtual Reality")
S164.	(MH "Computer Simulation")
S165.	(MH "Video Games+")
S166.	(MH "Telemedicine") OR (MH "Telerehabilitation")
S167.	TI ((exergam* or "exer gam*" or "fitness gam*" or gamercis* or "virtual reality" or video* or online or internet* or computer* or wiifit or gaming technology or web* or e*health or tele*)) OR AB ((exergam* or "exer gam*" or "fitness gam*" or gamercis* or "virtual reality" or video* or online or internet* or computer* or wiifit or gaming technology or web* or e*health or tele*))
S168.	TI ((robot* or "robot assist*" or exoskeleton* or exosuit*)) OR AB ((robot* or "robot assist*" or exoskeleton* or exosuit*))
S169.	(MH "Clothing")
S170.	TI lycra OR AB lycra
S171.	TI ((cooling N2 (device* or clothing or clothes or cloth or garment*))) OR AB ((cooling N2 (device* or clothing or clothes or cloth or garment*)))

S172.	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 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 265 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75
S173.	S7 AND S11 AND S76

Epistemonikos search terms

3.	((advanced_title_en:(multiple sclerosis) OR advanced_abstract_en:(multiple sclerosis)) AND (advanced_title_en:(fatigue* OR exhaust* OR tired* OR weary OR weariness OR weak* OR letharg* OR langour* OR lassitude OR drowsiness OR overtired* OR sluggish* OR debilitat* OR enervat* OR burn* out OR burnout)) OR advanced_abstract_en:(fatigue* OR exhaust* OR tired* OR weary OR weariness OR weak* OR letharg* OR langour* OR lassitude OR drowsiness OR overtired* OR sluggish* OR debilitat* OR enervat* OR burn* out OR burnout)))
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A.4 Pharmacological management of fatigue

This literature search strategy was used for the following review:

- For adults with MS, including people receiving palliative care, what is the clinical and cost effectiveness of pharmacological interventions for fatigue?

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 4: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	01 January 2014 – 08 September 2021	None Exclusions (animal studies, letters, comments, children)
Embase (OVID)	01 January 2014 – 08 September 2021	None Exclusions (animal studies, letters, comments, conference abstracts, children)
The Cochrane Library (Wiley)	Cochrane Reviews 2014 to 2021 Issue 9 of 12 CENTRAL 2014 to 2021 Issue 9 of 12	None Exclusions (conference abstracts & clinical trials)
Epistemonikos (The Epistemonikos Foundation)	01 January 2014 – 08 September 2021	Systematic Reviews Exclusions (Cochrane Reviews)

Medline (Ovid) search terms

313.	exp Multiple Sclerosis/
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314.	((multiple or disseminated) adj2 scleros*).ti,ab.
315.	encephalomyelitis disseminata.ti,ab.
316.	MS.ti.
317.	Myelitis, Transverse/
318.	transverse myelitis.ti,ab.
319.	or/1-6
320.	*Demyelinating Diseases/
321.	*Demyelinating Autoimmune Diseases, CNS/
322.	(Demyelinat* adj2 (syndrome* or disease* or autoimmun*)).ti,ab.
323.	(Chronic Cerebrospinal Venous Insufficiency or CCSVI).ti,ab.
324.	Venous Insufficiency/cf, co, di, dg, et [Cerebrospinal Fluid, Complications, Diagnosis, Diagnostic Imaging, Etiology]
325.	(Devic* adj (disease or syndrome)).ti,ab.
326.	((clinical* isolat* or radiological* isolat*) adj2 syndrome*).ti,ab.
327.	exp Optic Neuritis/
328.	((neuromyelitis or neuritis or neuropapillitis) adj2 (retrobulbar or optic*)).ti,ab.
329.	(NMO or NMOSD).ti,ab.
330.	or/1-17
331.	letter/
332.	editorial/
333.	news/
334.	exp historical article/
335.	Anecdotes as Topic/
336.	comment/
337.	case report/
338.	(letter or comment*).ti.
339.	or/19-26
340.	randomized controlled trial/ or random*.ti,ab.
341.	27 not 28
342.	animals/ not humans/
343.	exp Animals, Laboratory/
344.	exp Animal Experimentation/
345.	exp Models, Animal/
346.	exp Rodentia/
347.	(rat or rats or rodent* or mouse or mice).ti.
348.	or/29-35
349.	18 not 36
350.	limit 37 to English language
351.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
352.	38 not 39
353.	aspirin/
354.	(Aspirin or Acetylsalicylic acid or ASA or Acetysal or Acylpyrin or Aloxiprium or Colfarit or Dispril or Easprin or Ecotrin or Endosprin or Magnecyl or Micristin or Polopirin or Polopiryna or Solprin or Solupsan or Zorprin or Acetyloxy benzoic Acid).ti,ab.

355.	exp Amantadine/
356.	(Amantadin* or Lysovir or Symmetrel or Aman or merz or ratiopharm or neuraxpharm or amantahciazu or amanta or mantadix or cerebramed or amantadinratiopharm or tregor or midantan or pmsamantadine or wiregyt or "1 aminoadamantane" or ratiopharm or azupharma or amantasulfateazu or adamantylamine or endantadine or symadine or genamantadine or amixx or adekin or viregyt or gen-amantadine or infex).ti,ab.
357.	exp Serotonin Uptake Inhibitors/ or Citalopram/ or Paroxetine/ or fluoxetine/ or Modafinil/
358.	(SSRI* or Citalopram or Cytalopram or Cipramil or CipraleX or Lexapro or escitalopram or Fluoxetine or Prozac or oXactin or prozit or Fluvoxamine or Faverin or sarafem or Paroxetine or SeroXat or Sertraline or Lustral or paxil or aropax or modafanil or Armodafanil or Bupropion or Methylphenadite or Dextroamphetamine or Zolpidem or Venlafaxine).ti,ab.
359.	((serotonin or inhibitor) adj2 (uptake or reuptake)).ti,ab.
360.	exp Vitamin B 12/ or Hydroxocobalamin/
361.	((((B-12 or B12) adj1 vitamin) or cyanocobalamin or cobamide* or cobalamin* or eritron or cytamen or hydroxycobalamin).ti,ab.
362.	or/41-49
363.	40 and 50

Embase (Ovid) search terms

318.	exp Multiple Sclerosis/
319.	((multiple or disseminated) adj2 scleros*).ti,ab.
320.	encephalomyelitis disseminata.ti,ab.
321.	MS.ti.
322.	myelitis/
323.	transverse myelitis.ti,ab.
324.	or/1-6
325.	demyelinating disease/
326.	(Demyelinat* adj2 (syndrome* or disease* or autoimmun*)).ti,ab.
327.	(Chronic Cerebrospinal Venous Insufficiency or CCSVI).ti,ab.
328.	vein insufficiency/co, di, et [Complication, Diagnosis, Etiology]
329.	(Devic* adj (disease or syndrome)).ti,ab.
330.	((clinical* isolat* or radiological* isolat*) adj2 syndrome*).ti,ab.
331.	exp optic neuritis/
332.	((neuromyelitis or neuritis or neuropapillitis) adj2 (retrobulbar or optic*)).ti,ab.
333.	(NMO or NMOSD).ti,ab.
334.	or/1-16
335.	letter.pt. or letter/
336.	note.pt.
337.	editorial.pt.
338.	(conference abstract or conference paper).pt.
339.	case report/ or case study/
340.	(letter or comment*).ti.
341.	or/18-23
342.	randomized controlled trial/ or random*.ti,ab.
343.	24 not 25
344.	animal/ not human/

345.	nonhuman/
346.	exp Animal Experiment/
347.	exp Experimental Animal/
348.	animal model/
349.	exp Rodent/
350.	(rat or rats or rodent* or mouse or mice).ti.
351.	or/26-33
352.	17 not 34
353.	(exp child/ or exp pediatrics/) not (exp adult/ or exp adolescent/)
354.	35 not 36
355.	limit 37 to English language
356.	*acetylsalicylic acid/
357.	(Aspirin or Acetylsalicylic acid or ASA or Acetysal or Acylpyrin or Aloxiprium or Colfarit or Dispril or Easprin or Ecotrin or Endosprin or Magnecyl or Micristin or Polopirin or Polopiryna or Solprin or Solupsan or Zorprin or Acetyloxy benzoic Acid).ti,ab.
358.	amantadine/
359.	(Amantadin* or Lysovir or Symmetrel or Aman or merz or ratiopharm or neuraxpharm or amantahciazu or amanta or mantadix or cerebramed or amantadinratiopharm or tregor or midantan or pmsamantadine or wiregyt or "1 aminoadamantane" or ratiopharm or azupharma or amantasulfateazu or adamantylamine or endantadine or symadine or genamantadine or amixx or adekin or viregyt or gen-amantadine or infex).ti,ab.
360.	serotonin uptake inhibitor/ or Citalopram/ or Paroxetine/ or fluoxetine/ or Modafinil/
361.	(SSRI* or Citalopram or Cytalopram or Cipramil or Cipralext or Lexapro or escitalopram or Fluoxetine or Prozac or oxactin or prozix or Fluvoxamine or Faverin or sarafem or Paroxetine or Seroxtat or Sertraline or Lustral or paxil or aropax or modafanil or Armodafanil or Bupropion or Methylphenadite or Dextroamphetamine or Zolpidem or Venlafaxine).ti,ab.
362.	((serotonin or inhibitor) adj2 (uptake or reuptake)).ti,ab.
363.	cyanocobalamin/ or hydroxocobalamin/
364.	((((B-12 or B12) adj1 vitamin) or cyanocobalamin or cobamide* or cobalamin* or eritron or cytamen or hydroxycobalamin).ti,ab.
365.	or/39-47
366.	38 and 48

Cochrane Library (Wiley) search terms

#162.	MeSH descriptor: [Multiple Sclerosis] explode all trees
#163.	((multiple or disseminated) NEAR/2 scleros*):ti,ab
#164.	(encephalomyelitis disseminata):ti,ab
#165.	MS:ti
#166.	MeSH descriptor: [Myelitis, Transverse] this term only
#167.	transverse myelitis:ti,ab
#168.	(OR #1-#6)
#169.	MeSH descriptor: [Demyelinating Diseases] this term only
#170.	MeSH descriptor: [Demyelinating Autoimmune Diseases, CNS] this term only
#171.	(Demyelinat* NEAR/2 (syndrome* or disease* or autoimmun*)):ti,ab
#172.	(Chronic Cerebrospinal Venous Insufficiency or CCSVI):ti,ab

#173.	MeSH descriptor: [Venous Insufficiency] this term only and with qualifier(s): [diagnostic imaging - DG, cerebrospinal fluid - CF, complications - CO, diagnosis - DI, etiology - ET]
#174.	(Devic* NEXT (disease or syndrome)):ti,ab
#175.	((clinical* NEXT isolat*) NEXT syndrome*):ti,ab
#176.	((radiological* NEXT isolat*) NEXT syndrome*):ti,ab
#177.	MeSH descriptor: [Optic Neuritis] explode all trees
#178.	((neuromyelitis or neuritis or neuropapillitis) NEXT (retrobulbar or optic*)):ti,ab
#179.	(NMO or NMOSD):ti,ab
#180.	(OR #1-#18)
#181.	MeSH descriptor: [Aspirin] explode all trees
#182.	(Aspirin or Acetylsalicylic acid or ASA or Acetysal or Acylpyrin or Aloxiprium or Colfarit or Dispril or Easprin or Ecotrin or Endosprin or Magnecyl or Micristin or Polopirin or Polopiryne or Solprin or Solupsan or Zorprin or Acetyloxy benzoic Acid):ti,ab
#183.	MeSH descriptor: [Amantadine] explode all trees
#184.	(Amantadin* or Lysovir or Symmetrel or Aman or merz or ratiopharm or neuraxpharm or amantahciazu or amanta or mantadix or cerebramed or amantadinratiopharm or tregor or midantan or pmsamantadine or wiregyt or "1 aminoadamantane" or ratiopharm or azupharma or amantasulfateazu or adamantylamine or endantadine or symadine or genamantadine or amixx or adekin or viregyt or gen-amantadine or infex):ti,ab
#185.	MeSH descriptor: [Serotonin Uptake Inhibitors] explode all trees
#186.	MeSH descriptor: [Citalopram] explode all trees
#187.	MeSH descriptor: [Paroxetine] explode all trees
#188.	MeSH descriptor: [Fluoxetine] explode all trees
#189.	MeSH descriptor: [Modafinil] explode all trees
#190.	(SSRI* or Citalopram or Cytalopram or Cipramil or Cipralext or Lexapro or escitalopram or Fluoxetine or Prozac or oxactin or prozit or Fluvoxamine or Faverin or sarafem or Paroxetine or Seroxat or Sertraline or Lustral or paxil or aropax or modafanil or Armodafanil or Bupropion or Methylphenadite or Dextroamphetamine or Zolpidem or Venlafaxine):ti,ab
#191.	((serotonin or inhibitor) near/2 (uptake or reuptake)):ti,ab
#192.	MeSH descriptor: [Vitamin B 12] explode all trees
#193.	MeSH descriptor: [Hydroxocobalamin] explode all trees
#194.	((B-12 or B12) near/1 vitamin) or cyanocobalamin or cobamide* or cobalamin* or eritron or cytamen or hydroxycobalamin):ti,ab
#195.	(or #20-#33)
#196.	#19 and #34
#197.	conference:pt or (clinicaltrials or trialsearch):so
#198.	#35 not #36

Epistemonikos search terms

4.	((advanced_title_en:(multiple sclerosis) OR advanced_abstract_en:(multiple sclerosis)) AND (advanced_title_en:(aspirin OR Amantadine OR Serotonin OR Citalopram OR Paroxetine OR fluoxetine OR Modafinil OR Vitamin B 12 OR Hydroxocobalamin) OR advanced_abstract_en:(aspirin OR Amantadine OR Serotonin OR Citalopram OR Paroxetine OR fluoxetine OR Modafinil OR Vitamin B 12 OR Hydroxocobalamin)))
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A.5 Pharmacological management of mobility

This literature search strategy was used for the following review:

- For adults with MS, including people receiving palliative care, what is the clinical and cost effectiveness of pharmacological interventions for mobility?

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 5: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	01 January 2014 – 08 September 2021	None Exclusions (animal studies, letters, comments, children)
Embase (OVID)	01 January 2014 – 08 September 2021	None Exclusions (animal studies, letters, comments, conference abstracts, children)
The Cochrane Library (Wiley)	Cochrane Reviews 2014 to 2021 Issue 9 of 12 CENTRAL 2014 to 2021 Issue 9 of 12	None Exclusions (conference abstracts & clinical trials)
Epistemonikos (The Epistemonikos Foundation)	01 January 2014 – 08 September 2021	Systematic Reviews Exclusions (Cochrane Reviews)

Medline (Ovid) search terms

364.	exp Multiple Sclerosis/
365.	((multiple or disseminated) adj2 scleros*).ti,ab.
366.	encephalomyelitis disseminata.ti,ab.
367.	MS.ti.
368.	Myelitis, Transverse/
369.	transverse myelitis.ti,ab.
370.	or/1-6
371.	Demyelinating Diseases/
372.	Demyelinating Autoimmune Diseases, CNS/
373.	(Demyelinat* adj2 (syndrome* or disease* or autoimmune)).ti,ab.
374.	Chronic Cerebrospinal Venous Insufficiency.ti,ab.
375.	Venous Insufficiency/cf, co, di, dg, et [Cerebrospinal Fluid, Complications, Diagnosis, Diagnostic Imaging, Etiology]
376.	(Devic* adj (disease or syndrome)).ti,ab.
377.	(clinical* isolat* adj syndrome*).ti,ab.
378.	exp Optic Neuritis/
379.	Neuromyelitis Optica.ti,ab.

380.	(NMO spectrum adj (disease* or disorder*)).ti,ab.
381.	or/1-17
382.	letter/
383.	editorial/
384.	news/
385.	exp historical article/
386.	Anecdotes as Topic/
387.	comment/
388.	case report/
389.	(letter or comment*).ti.
390.	or/19-26
391.	randomized controlled trial/ or random*.ti,ab.
392.	27 not 28
393.	animals/ not humans/
394.	exp Animals, Laboratory/
395.	exp Animal Experimentation/
396.	exp Models, Animal/
397.	exp Rodentia/
398.	(rat or rats or mouse or mice).ti.
399.	or/29-35
400.	18 not 36
401.	limit 37 to English language
402.	*Aminopyridines/
403.	exp 4-Aminopyridine/
404.	(fampridine* or dalfampridine* or aminopyridine* or ampyra or "el 970" or "el970" or fampyra or neurelan or pymadin* or pyridine* or "4-pyridinamine*" or amifampridine*).ti,ab.
405.	(1003-40-3 or 504-24-5).rn.
406.	or/39-42
407.	38 and 43
408.	exp Rehabilitation/
409.	exp Physical Therapy Modalities/
410.	Self care/
411.	Self efficacy/
412.	Patient Care Team/
413.	Ambulatory care/
414.	rehab*.ti,ab.
415.	(physiotherapy or neurophysiotherapy).ti,ab.
416.	(interdisciplinary or multidisciplinary or inter disciplinary or multi disciplinary or MDT or home based or ambulatory care or non pharmacological or non pharma).ti,ab.
417.	((self or own or personal or alone) adj3 (efficacy or treatment* or programme* or program* or technique* or manag* or intervention* or therap* or train* or strateg* or method* or counsel* or care* or caring or course*)).ti,ab.
418.	((treatment* or therap* or intervention* or fatigue or energy) adj2 (strateg* or method* or programme* or program* or technique* or manag* or train* or course*)).ti,ab.
419.	((energ* or fatigue* or tired*) adj2 (effectiv* or conserv* or level* or physical)).ti,ab.
420.	Transcutaneous Electrical Nerve Stimulation/

421.	(TENS or electroanalgesi* or electro analgesi*).ti,ab.
422.	(electric* nerve adj2 stimulation adj2 (transcutaneous or percutaneous or analgesi*)),ti,ab.
423.	(electrostimulation adj2 (transcutaneous or percutaneous or analgesi*)),ti,ab.
424.	FACETS.ti,ab.
425.	Exercise therapies/
426.	Muscle Stretching Exercises/
427.	Physical endurance/
428.	Physical fitness/
429.	exp "Physical Education and Training"/
430.	Exercise Movement Techniques/
431.	(exercising or exercise*).ti,ab.
432.	((physical or muscle* or muscular) adj2 (endurance or fitness or exertion or stretch* or stand* or splinting or flexibl* or train*)).ti,ab.
433.	((fitness or aerobic or resistance) adj2 (technic* or technique* or train*)).ti,ab.
434.	Bicycling/ or Walking/
435.	(cycling or cycle or bicycling or bicycle or treadmill* or walk*).ti,ab.
436.	Yoga/ or Tai ji/
437.	(tai ji or tai chi or taichi or taiji or taijiquan).ti,ab.
438.	(gym or calisthenics or pilates or yoga*).ti,ab.
439.	Clothing/ or Shoes/
440.	(lycra or balancewear).ti,ab.
441.	((cooling or temperature balanc*) adj2 (device* or clothing or clothes or cloth or garment*)).ti,ab.
442.	or/45-78
443.	Mobility limitation/ or Movement/ or Locomotion/ or Postural Balance/
444.	(mobil* or balanc* or move* or moving or movement* or motion or locomotion* or locomotor or ambulat*).ti,ab.
445.	80 or 81
446.	38 and 79 and 82
447.	44 or 83

Embase (Ovid) search terms

367.	exp Multiple Sclerosis/
368.	((multiple or disseminated) adj2 scleros*).ti,ab.
369.	encephalomyelitis disseminata.ti,ab.
370.	MS.ti.
371.	myelitis/
372.	transverse myelitis.ti,ab.
373.	or/1-6
374.	demyelinating disease/
375.	(Demyelinat* adj2 (syndrome* or disease* or autoimmune)).ti,ab.
376.	Chronic Cerebrospinal Venous Insufficiency.ti,ab.
377.	vein insufficiency/co, di, et [Complication, Diagnosis, Etiology]
378.	(Devic* adj (disease or syndrome)).ti,ab.
379.	(clinical* isolat* adj syndrome*).ti,ab.
380.	exp optic neuritis/

381.	Neuromyelitis Optica.ti,ab.
382.	(NMO spectrum adj (disease* or disorder*).ti,ab.
383.	or/1-16
384.	letter.pt. or letter/
385.	note.pt.
386.	editorial.pt.
387.	case report/ or case study/
388.	(letter or comment*).ti.
389.	or/18-22
390.	randomized controlled trial/ or random*.ti,ab.
391.	23 not 24
392.	animal/ not human/
393.	nonhuman/
394.	exp Animal Experiment/
395.	exp Experimental Animal/
396.	animal model/
397.	exp Rodent/
398.	(rat or rats or rodent* or mouse or mice).ti.
399.	or/25-32
400.	17 not 33
401.	limit 34 to English language
402.	*aminopyridine derivative/
403.	fampridine/
404.	(fampridine* or dalfampridine* or aminopyridine* or ampyra or "el 970" or "el970" or fampyra or neurelan or pymadin* or pyridine* or "4-pyridinamine*" or amifampridine*).ti,ab.
405.	(1003-40-3 or 504-24-5).rn.
406.	or/36-39
407.	35 and 40
408.	exp *Rehabilitation/
409.	*Self care/
410.	*Patient Care/
411.	Ambulatory care/
412.	rehab*.ti,ab.
413.	(physiotherapy or neurophysiotherapy).ti,ab.
414.	(interdisciplinary or multidisciplinary or inter disciplinary or multi disciplinary or MDT or home based or ambulatory care or non pharmacological or non pharma).ti,ab.
415.	((self or own or personal or alone) adj3 (efficacy or treatment* or programme* or program* or technique* or manag* or intervention* or therap* or train* or strateg* or method* or counsel* or care* or caring or course*).ti,ab.
416.	((treatment* or therap* or intervention* or fatigue or energy) adj2 (strateg* or method* or programme* or program* or technique* or manag* or train* or course*).ti,ab.
417.	((energ* or fatigue* or tired*) adj2 (effectiv* or conserv* or level* or physical)).ti,ab.
418.	*Transcutaneous Nerve Stimulation/
419.	(TENS or electroanalgesi* or electro analgesi*).ti,ab.
420.	(electric* Nerve adj2 stimulation adj2 (transcutaneous or percutaneous or analgesi*).ti,ab.

421.	(electrostimulation adj2 (transcutaneous or percutaneous or analgesi*)).ti,ab.
422.	FACETS.ti,ab.
423.	*Alternative therapies/
424.	*Physical medicine/
425.	exp *kinesiotherapy/
426.	*Muscle stretching/
427.	*Stretching Exercises/
428.	*Endurance training/
429.	*Fitness/
430.	exp *Physical Education/
431.	*Movement Therapy/
432.	*Muscle training/
433.	*Exercise/
434.	(exercising or exercise*).ti,ab.
435.	((physical or muscle* or muscular) adj2 (endurance or fitness or exertion or stretch* or stand* or splinting or flexibl* or train*)).ti,ab.
436.	((fitness or aerobic or resistance) adj2 (technic* or technique* or train*)).ti,ab.
437.	Bicycling/ or Walking/
438.	(cycling or cycle or bicycling or bicycle or treadmill* or walk*).ti,ab.
439.	*Yoga/ or *Tai ji/
440.	(tai ji or tai chi or taichi or taiji or taijiquan).ti,ab.
441.	(gym or calisthenics or pilates or yoga*).ti,ab.
442.	*Clothing/
443.	(lycra or balancewear).ti,ab.
444.	((cooling or temperature balanc*) adj2 (device* or clothing or clothes or cloth or garment*)).ti,ab.
445.	or/42-78
446.	*Walking difficulty/ or *Locomotion/
447.	(mobil* or balanc* or move* or moving or movement* or motion or locomotion* or locomotor or ambulat*).ti,ab.
448.	80 or 81
449.	35 and 79 and 82
450.	41 or 83

Cochrane Library (Wiley) search terms

#199.	MeSH descriptor: [Multiple Sclerosis] explode all trees
#200.	((multiple or disseminated) NEAR/2 scleros*).ti,ab
#201.	encephalomyelitis disseminata:ti,ab
#202.	MS:ti
#203.	MeSH descriptor: [Myelitis, Transverse] this term only
#204.	transverse myelitis:ti,ab
#205.	(OR #1-#6)
#206.	MeSH descriptor: [Demyelinating Diseases] this term only
#207.	(Demyelinat* NEAR/2 (syndrome* or disease* or autoimmune)).ti,ab
#208.	Chronic Cerebrospinal Venous Insufficiency:ti,ab

#209.	MeSH descriptor: [Venous Insufficiency] this term only and with qualifier(s): [diagnostic imaging - DG, cerebrospinal fluid - CF, complications - CO, diagnosis - DI, etiology - ET]
#210.	(Devic* NEXT (disease or syndrome)):ti,ab
#211.	((clinical* NEXT isolat*) NEXT syndrome*):ti,ab
#212.	MeSH descriptor: [Optic Neuritis] explode all trees
#213.	Neuromyelitis Optica:ti,ab
#214.	(NMO spectrum NEXT (disease* or disorder*)):ti,ab
#215.	(OR #1-#16)
#216.	MeSH descriptor: [Aminopyridines] this term only
#217.	MeSH descriptor: [4-Aminopyridine] explode all trees
#218.	(fampridine* or dalfampridine* or aminopyridine* or ampyra or "el 970" or "el970" or fampyra or neurelan or pymadin* or pyridine* or "4-pyridinamine*" or amifampridine*):ti,ab
#219.	(OR #18-#20)
#220.	#17 AND #21
#221.	MeSH descriptor: [Rehabilitation] explode all trees
#222.	MeSH descriptor: [Physical Therapy Modalities] explode all trees
#223.	MeSH descriptor: [Self Care] explode all trees
#224.	MeSH descriptor: [Self Efficacy] explode all trees
#225.	MeSH descriptor: [Patient Care Team] explode all trees
#226.	MeSH descriptor: [Ambulatory Care] explode all trees
#227.	rehab*:ti,ab
#228.	(physiotherapy or neurophysiotherapy):ti,ab
#229.	(interdisciplinary or multidisciplinary or inter disciplinary or multi disciplinary or MDT or home based or ambulatory care or non pharmacological or non pharma):ti,ab
#230.	((self or own or personal or alone) near/3 (efficacy or treatment* or programme* or program* or technique* or manag* or intervention* or therap* or train* or strateg* or method* or counsel* or care* or caring or course*)):ti,ab
#231.	((treatment* or therap* or intervention* or fatigue or energy) near/2 (strateg* or method* or programme* or program* or technique* or manag* or train* or course*)):ti,ab
#232.	((energ* or fatigue* or tired) near/2 (effectiv* or conserv* or level* or physical)):ti,ab
#233.	MeSH descriptor: [Transcutaneous Electric Nerve Stimulation] explode all trees
#234.	(TENS or electroanalgesi* or electro analgesi*):ti,ab
#235.	(electric* nerve near/2 stimulation near/2 (transcutaneous or percutaneous or analgesi*)):ti,ab
#236.	(electrostimulation near/2 (transcutaneous or percutaneous or analgesi*)):ti,ab
#237.	FACETS:ti,ab
#238.	MeSH descriptor: [Exercise Therapy] explode all trees
#239.	MeSH descriptor: [Muscle Stretching Exercises] explode all trees
#240.	MeSH descriptor: [Physical Endurance] explode all trees
#241.	MeSH descriptor: [Physical Fitness] explode all trees
#242.	MeSH descriptor: [Physical Education and Training] explode all trees
#243.	MeSH descriptor: [Exercise Movement Techniques] explode all trees
#244.	(exercising or exercise*):ti,ab
#245.	((physical or muscle* or muscular) near/2 (endurance or fitness or exertion or stretch* or stand* or splinting or flexibl* or train*)):ti,ab
#246.	(fitness or aerobic or resistance) adj2 (technic* or technique* or train*):ti,ab

#247.	MeSH descriptor: [Bicycling] explode all trees
#248.	MeSH descriptor: [Walking] explode all trees
#249.	(cycling or cycle or bicycling or bicycle or treadmill* or walk*):ti,ab
#250.	MeSH descriptor: [Yoga] explode all trees
#251.	MeSH descriptor: [Tai Ji] explode all trees
#252.	(tai ji or tai chi or taichi or taiji or taijiquan):ti,ab
#253.	(gym or calisthenics or pilates or yoga*):ti,ab
#254.	MeSH descriptor: [Clothing] explode all trees
#255.	MeSH descriptor: [Shoes] explode all trees
#256.	(lycra or balancewear):ti,ab
#257.	((cooling or temperature balanc*) near/2 (device* or clothing or clothes or cloth or garment*)):ti,ab
#258.	(OR #23-#59)
#259.	MeSH descriptor: [Mobility Limitation] explode all trees
#260.	MeSH descriptor: [Movement] explode all trees
#261.	MeSH descriptor: [Locomotion] explode all trees
#262.	MeSH descriptor: [Postural Balance] 2 tree(s) exploded
#263.	(mobil* or balanc* or move* or moving or movement* or motion or locomotion* or locomotor or ambulat*):ti,ab
#264.	(OR #61-#65)
#265.	#17 and #60 and #66
#266.	#22 or #67

Epistemonikos search terms

5.	((advanced_title_en:(multiple sclerosis) OR advanced_abstract_en:(multiple sclerosis)) AND (advanced_title_en:(mobility) OR advanced_abstract_en:(mobility))) OR (advanced_title_en:((rehab* OR neurorehab*)) OR advanced_abstract_en:((rehab* OR neurorehab*)) OR (advanced_title_en:((fampridine* OR dalfampridine* OR aminopyridine* OR ampyra OR "el 970" OR "el970" OR fampyra OR neurelan OR pymadin* OR pyridine* OR "4-pyridinamine*" OR amifampridine*)) OR advanced_abstract_en:((fampridine* OR dalfampridine* OR aminopyridine* OR ampyra OR "el 970" OR "el970" OR fampyra OR neurelan OR pymadin* OR pyridine* OR "4-pyridinamine*" OR amifampridine*)))
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A.6 Pharmacological management of spasticity

This literature search strategy was used for the following review:

- For adults with MS, including people receiving palliative care, what is the clinical and cost effectiveness of pharmacological interventions for spasticity?

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 6: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	01 January 2014 – 08 September 2021	Randomised controlled trials Systematic review studies Observational studies Exclusions (animal studies, letters, comments, children)
Embase (OVID)	01 January 2014 – 08 September 2021	Randomised controlled trials Systematic review studies Observational studies Exclusions (animal studies, letters, comments, conference abstracts, children)
The Cochrane Library (Wiley)	Cochrane Reviews 2014 to 2021 Issue 9 of 12 CENTRAL 2014 to 2021 Issue 9 of 12	None Exclusions (conference abstracts & clinical trials)
Epistemonikos (The Epistemonikos Foundation)	01 January 2014 – 08 September 2021	Systematic Reviews Exclusions (Cochrane Reviews)

Medline (Ovid) search terms

448.	exp Paraparesis/
449.	parapares*.ti,ab.
450.	Muscle Spasticity/
451.	(spastic* or spasm*).ti,ab.
452.	exp Spasm/
453.	Mobility limitation/ or Movement/ or Locomotion/
454.	((limit* or difficult* or disorder* or impair*) adj2 (walk* or ambulat* or mobility or move or moving or movement or locomotion or muscle* or muscular)).ti,ab.
455.	((stiff* or heaviness or heavy or contract* or tone or weak* or tight* or tens*) adj2 (muscle* or muscular)).ti,ab.
456.	or/1-8
457.	letter/
458.	editorial/
459.	news/
460.	exp historical article/
461.	Anecdotes as Topic/
462.	comment/
463.	case report/
464.	(letter or comment*).ti.
465.	or/10-17
466.	randomized controlled trial/ or random*.ti,ab.
467.	18 not 19
468.	animals/ not humans/
469.	exp Animals, Laboratory/
470.	exp Animal Experimentation/

471.	exp Models, Animal/
472.	exp Rodentia/
473.	(rat or rats or rodent* or mouse or mice).ti.
474.	or/20-26
475.	9 not 27
476.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
477.	28 not 29
478.	limit 30 to English language
479.	baclofen/
480.	(Baclofen* or baclophen* or ciba-34,647-ba or (chlorophenyl adj gaba) or lioresal).ti,ab.
481.	gabapentin/
482.	(gabapentin* or 1-aminomethylcyclohexaneacetic acid or convalis or Neurontin).ti,ab.
483.	pregabalin/
484.	(pregabalin* or 3 isobutyl gaba or 3-aminomethyl-5-methylhexanoic acid or lyrica).ti,ab.
485.	dantrolene/
486.	(Dantrolene or Dantrium).ti,ab.
487.	benzodiazepines/ or clonazepam/ or exp diazepam/
488.	(benzodiazepinone* or clonazepam* or diazepam* or Nordazepam*).ti,ab.
489.	exp Imidazolines/
490.	(imidazoline* or clonidine* or catapres* or clo*elin* or dixarit or Tizanidine* or Zanaflex).ti,ab.
491.	exp Botulinum Toxins/
492.	botulin*.ti,ab.
493.	(botulin* or onabotulinumtoxin* or abobotulinumtoxin* or incobotulinumtoxin* or prabotulinumtoxin* or rimabotulinum*).ti,ab.
494.	(Azzalure or Bocouture or Botox or Dysport or Vistabel or Xeomin or Myobloc or Jeuveau).ti,ab.
495.	Phenol/
496.	(phenol adj3 (inject* or intrathecal* or pump* or liquid*)).ti,ab.
497.	or/32-49
498.	31 and 50
499.	randomized controlled trial.pt.
500.	controlled clinical trial.pt.
501.	randomi#ed.ti,ab.
502.	placebo.ab.
503.	randomly.ti,ab.
504.	Clinical Trials as topic.sh.
505.	trial.ti.
506.	or/52-58
507.	Meta-Analysis/
508.	exp Meta-Analysis as Topic/
509.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
510.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
511.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.

512.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
513.	(search* adj4 literature).ab.
514.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
515.	cochrane.jw.
516.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
517.	or/60-69
518.	51 and (59 or 70)
519.	Epidemiologic studies/
520.	Observational study/
521.	exp Cohort studies/
522.	(cohort adj (study or studies or analys* or data)).ti,ab.
523.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
524.	((longitudinal or retrospective or prospective) and (study or studies or review or analys* or cohort* or data)).ti,ab.
525.	Controlled Before-After Studies/
526.	Historically Controlled Study/
527.	Interrupted Time Series Analysis/
528.	(before adj2 after adj2 (study or studies or data)).ti,ab.
529.	exp case control study/
530.	case control*.ti,ab.
531.	Cross-sectional studies/
532.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
533.	or/72-85
534.	51 and 86
535.	71 or 87

Embase (Ovid) search terms

451.	exp paraplegia/
452.	parapares*.ti,ab.
453.	spastic paraplegia/
454.	spastic paresis/
455.	spasticity/
456.	(spastic* or spasm*).ti,ab.
457.	exp muscle spasm/
458.	walking difficulty/
459.	body movement/ or limb movement/ or locomotion/ or voluntary movement/
460.	((limit* or difficult* or disorder* or impair*) adj2 (walk* or ambulat* or mobility or move or moving or movement or locomotion or muscle* or muscular)).ti,ab.
461.	((stiff* or heaviness or heavy or contract* or tone or weak* or tight* or tens*) adj2 (muscle* or muscular)).ti,ab.
462.	or/1-11
463.	letter.pt. or letter/
464.	note.pt.
465.	editorial.pt.

466.	(conference abstract or conference paper).pt.
467.	case report/ or case study/
468.	(letter or comment*).ti.
469.	or/13-17
470.	randomized controlled trial/ or random*.ti,ab.
471.	19 not 20
472.	animal/ not human/
473.	nonhuman/
474.	exp Animal Experiment/
475.	exp Experimental Animal/
476.	animal model/
477.	exp Rodent/
478.	(rat or rats or rodent* or mouse or mice).ti.
479.	or/21-28
480.	12 not 29
481.	(exp child/ or exp pediatrics/) not (exp adult/ or exp adolescent/)
482.	30 not 31
483.	limit 32 to English language
484.	baclofen/
485.	(Baclofen* or baclophen* or ciba-34,647-ba or (chlorophenyl adj gaba) or lioresal).ti,ab.
486.	gabapentin/
487.	(gabapentin* or 1-aminomethylcyclohexaneacetic acid or convalis or Neurontin).ti,ab.
488.	pregabalin/
489.	(pregabalin* or 3 isobutyl gaba or 3-aminomethyl-5-methylhexanoic acid or lyrica).ti,ab.
490.	dantrolene/
491.	(Dantrolene or Dantrium).ti,ab.
492.	benzodiazepine/ or benzodiazepine derivative/
493.	clonazepam/
494.	diazepam/
495.	(benzodiazepinone* or clonazepam* or diazepam* or Nordazepam*).ti,ab.
496.	imidazoline/ or imidazole derivative/
497.	(imidazoline* or clonidine* or catapres* or clo*elin* or dixarit or Tizanidine* or Zanaflex).ti,ab.
498.	botulinum toxin/
499.	botulin*.ti,ab.
500.	(botulin* or onabotulinumtoxin* or abobotulinumtoxin* or incobotulinumtoxin* or prabotulinumtoxin* or rimabotulinum*).ti,ab.
501.	(Azzalure or Bocouture or Botox or Dysport or Vistabel or Xeomin or Myobloc or Jueveau).ti,ab.
502.	phenol/
503.	(phenol adj3 (inject* or intrathecal* or pump* or liquid*)).ti,ab.
504.	or/34-53
505.	33 and 54
506.	random*.ti,ab.
507.	factorial*.ti,ab.
508.	(crossover* or cross over*).ti,ab.

509.	((doubl* or singl*) adj blind*).ti,ab.
510.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
511.	crossover procedure/
512.	single blind procedure/
513.	randomized controlled trial/
514.	double blind procedure/
515.	or/56-64
516.	systematic review/
517.	meta-analysis/
518.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
519.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
520.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
521.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
522.	(search* adj4 literature).ab.
523.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
524.	cochrane.jw.
525.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
526.	or/66-75
527.	55 and (65 or 76)
528.	Clinical study/
529.	Observational study/
530.	Family study/
531.	Longitudinal study/
532.	Retrospective study/
533.	Prospective study/
534.	Cohort analysis/
535.	Follow-up/
536.	cohort*.ti,ab.
537.	85 and 86
538.	(cohort adj (study or studies or analys* or data)).ti,ab.
539.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
540.	((longitudinal or retrospective or prospective) and (study or studies or review or analys* or cohort* or data)).ti,ab.
541.	(before adj2 after adj2 (study or studies or data)).ti,ab.
542.	exp case control study/
543.	case control*.ti,ab.
544.	cross-sectional study/
545.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
546.	or/78-84,87-95
547.	55 and 96
548.	77 or 97

Cochrane Library (Wiley) search terms

#267.	MeSH descriptor: [Paraparesis] explode all trees
#268.	parapares*:ti,ab
#269.	MeSH descriptor: [Muscle Spasticity] this term only
#270.	(spastic* or spasm*):ti,ab
#271.	MeSH descriptor: [Spasm] explode all trees
#272.	MeSH descriptor: [Mobility Limitation] this term only
#273.	MeSH descriptor: [Movement] this term only
#274.	MeSH descriptor: [Locomotion] this term only
#275.	((limit* or difficult* or disorder* or impair*) NEAR/2 (walk* or ambulat* or mobility or move or moving or movement or locomotion or muscle* or muscular)):ti,ab
#276.	((stiff* or heaviness or heavy or contract* or tone or weak* or tight* or tens*) NEAR/2 (muscle* or muscular)):ti,ab
#277.	(OR #1-#10)
#278.	MeSH descriptor: [Baclofen] this term only
#279.	(Baclofen* or baclophen* or lioresal):ti,ab
#280.	(chlorophenyl NEAR gaba):ti,ab
#281.	MeSH descriptor: [Gabapentin] this term only
#282.	(gabapentin* or 1aminomethylcyclohexaneacetic acid or convalis or Neurontin):ti,ab
#283.	MeSH descriptor: [Pregabalin] this term only
#284.	(pregabalin* or 3 isobutyl gaba or 3aminomethyl5methylhexanoic acid or lyrica):ti,ab
#285.	MeSH descriptor: [Dantrolene] this term only
#286.	(Dantrolene or Dantrium):ti,ab
#287.	MeSH descriptor: [Benzodiazepines] this term only
#288.	MeSH descriptor: [Clonazepam] this term only
#289.	MeSH descriptor: [Diazepam] explode all trees
#290.	(benzodiazepinone* or clonazaepam* or diazepam* or Nordazepam*):ti,ab
#291.	MeSH descriptor: [Imidazolines] explode all trees
#292.	(imidazoline* or clonidine* or catapres* or clo*elin* or dixarit or Tizanidine* or Zanaflex):ti,ab
#293.	MeSH descriptor: [Botulinum Toxins] explode all trees
#294.	botulin*:ti,ab
#295.	(botulin* or onabotulinumtoxin* or abobotulinumtoxin* or incobotulinumtoxin* or prabotulinumtoxin* or rimabotulinum*):ti,ab
#296.	(Azzalure or Bocouture or Botox or Dysport or Vistabel or Xeomin or Myobloc or Jeuveau):ti,ab
#297.	MeSH descriptor: [Phenols] explode all trees
#298.	(phenol NEAR/3 (inject* or intrathecal* or pump* or liquid*)):ti,ab
#299.	(OR #12-#32)
#300.	#11 AND #33
#301.	conference:pt or (clinicaltrials or trialsearch):so
#302.	#34 NOT #35

Epistemonikos search terms

6.	((advanced_title_en:(spasticity) OR advanced_abstract_en:(spasticity)) OR (advanced_title_en:(Paraparesis) OR advanced_abstract_en:(Paraparesis)) OR (advanced_title_en:(spasm) OR advanced_abstract_en:(spasm)) AND (advanced_title_en:(baclofen) OR advanced_abstract_en:(baclofen)) OR (advanced_title_en:(gabapentin) OR advanced_abstract_en:(gabapentin)) OR (advanced_title_en:(pregabalin) OR advanced_abstract_en:(pregabalin)) OR
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(advanced_title_en:(dantrolene) OR advanced_abstract_en:(dantrolene)) OR (advanced_title_en:(benzodiazepine) OR advanced_abstract_en:(benzodiazepine)) OR (advanced_title_en:(imidazoline) OR advanced_abstract_en:(imidazoline)) OR (advanced_title_en:(botulinum) OR advanced_abstract_en:(botulinum)) OR (advanced_title_en:(phenol) OR advanced_abstract_en:(phenol))

A.7 Non-pharmacological management of pain

This literature search strategy was used for the following review:

- For adults with MS, including people receiving palliative care, what is the clinical and cost effectiveness of non-pharmacological interventions for pain?

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 7: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	01 January 2014 – 08 September 2021	Randomised controlled trials Systematic review studies Exclusions (animal studies, letters, comments, children)
Embase (OVID)	01 January 2014 – 08 September 2021	Randomised controlled trials Systematic review studies Exclusions (animal studies, letters, comments, conference abstracts, children)
The Cochrane Library (Wiley)	Cochrane Reviews 2014 to 2021 Issue 9 of 12 CENTRAL 2014 to 2021 Issue 9 of 12	None Exclusions (conference abstracts & clinical trials)
Epistemonikos (The Epistemonikos Foundation)	01 January 2014 – 08 September 2021	Systematic Reviews Exclusions (Cochrane Reviews)

Medline (Ovid) search terms

536.	exp Multiple Sclerosis/
537.	((multiple or disseminated) adj2 scleros*).ti,ab.
538.	encephalomyelitis disseminata.ti,ab.
539.	MS.ti.
540.	Myelitis, Transverse/
541.	transverse myelitis.ti,ab.
542.	or/1-6
543.	letter/
544.	editorial/
545.	news/

546.	exp historical article/
547.	Anecdotes as Topic/
548.	comment/
549.	case report/
550.	(letter or comment*).ti.
551.	or/8-15
552.	randomized controlled trial/ or random*.ti,ab.
553.	16 not 17
554.	animals/ not humans/
555.	exp Animals, Laboratory/
556.	exp Animal Experimentation/
557.	exp Models, Animal/
558.	exp Rodentia/
559.	(rat or rats or rodent* or mouse or mice).ti.
560.	or/18-24
561.	7 not 25
562.	limit 26 to English language
563.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
564.	27 not 28
565.	exp Pain/
566.	(pain* or neuralgia or nociceptor* or ache or aching or twinge* or pang* or spasm* or cramp* or sore*).ti,ab.
567.	((physical or nerve* or muscl*) adj2 (suffering or hurt* or discomfort* or uncomfot*).ti,ab.
568.	or/30-32
569.	29 and 33
570.	randomized controlled trial.pt.
571.	controlled clinical trial.pt.
572.	randomi#ed.ti,ab.
573.	placebo.ab.
574.	randomly.ti,ab.
575.	Clinical Trials as topic.sh.
576.	trial.ti.
577.	or/35-41
578.	Meta-Analysis/
579.	exp Meta-Analysis as Topic/
580.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
581.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
582.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
583.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
584.	(search* adj4 literature).ab.
585.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
586.	cochrane.jw.

587.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
588.	or/43-52
589.	34 and (42 or 53)

Embase (Ovid) search terms

549.	exp *Multiple Sclerosis/
550.	((multiple or disseminated) adj2 scleros*).ti,ab.
551.	encephalomyelitis disseminata.ti,ab.
552.	MS.ti.
553.	myelitis/
554.	transverse myelitis.ti,ab.
555.	or/1-6
556.	letter.pt. or letter/
557.	note.pt.
558.	editorial.pt.
559.	(conference abstract or conference paper).pt.
560.	case report/ or case study/
561.	(letter or comment*).ti.
562.	or/8-13
563.	randomized controlled trial/ or random*.ti,ab.
564.	14 not 15
565.	animal/ not human/
566.	nonhuman/
567.	exp Animal Experiment/
568.	exp Experimental Animal/
569.	animal model/
570.	exp Rodent/
571.	(rat or rats or rodent* or mouse or mice).ti.
572.	or/16-23
573.	7 not 24
574.	(exp child/ or exp pediatrics/) not (exp adult/ or exp adolescent/)
575.	25 not 26
576.	limit 27 to English language
577.	exp pain/
578.	(pain* or neuralgia or nociceptor* or ache or aching or twinge* or pang* or spasm* or cramp* or sore*).ti,ab.
579.	((physical or nerve* or muscl*) adj2 (suffering or hurt* or discomfort* or uncomfot*).ti,ab.
580.	or/29-31
581.	28 and 32
582.	random*.ti,ab.
583.	factorial*.ti,ab.
584.	(crossover* or cross over*).ti,ab.
585.	((doubl* or singl*) adj blind*).ti,ab.
586.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
587.	crossover procedure/

588.	single blind procedure/
589.	randomized controlled trial/
590.	double blind procedure/
591.	or/34-42
592.	systematic review/
593.	meta-analysis/
594.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
595.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
596.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
597.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
598.	(search* adj4 literature).ab.
599.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
600.	cochrane.jw.
601.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
602.	or/44-53
603.	33 and (43 or 54)

Cochrane Library (Wiley) search terms

#303.	MeSH descriptor: [Multiple Sclerosis] explode all trees
#304.	((multiple or disseminated) NEAR/2 scleros*).ti,ab
#305.	encephalomyelitis disseminata:ti,ab
#306.	MS:ti
#307.	MeSH descriptor: [Myelitis, Transverse] this term only
#308.	transverse myelitis:ti,ab
#309.	(OR #1-#6)
#310.	MeSH descriptor: [Pain] explode all trees
#311.	(pain* or neuralgia or nociceptor* or ache or aching or twinge* or pang* or spasm* or cramp* or sore*).ti,ab
#312.	((physical or nerve* or muscl*) NEAR/2 (suffering or hurt* or discomfort* or uncomf*)):ti,ab
#313.	(OR #8-#10)
#314.	#7 AND #11
#315.	conference:pt or (clinicaltrials or trialsearch):so
#316.	#12 NOT #13

Epistemonikos search terms

7.	((advanced_title_en:(Multiple sclerosis) OR advanced_abstract_en:(Multiple sclerosis)) AND (advanced_title_en:(pain* OR neuralgia OR nociceptor* OR ache OR aching OR twinge* OR pang* OR spasm* OR cramp* OR sore* OR discomfort* OR suffer* OR uncomf* OR hurt*) OR advanced_abstract_en:(pain* OR neuralgia OR nociceptor* OR ache OR aching OR twinge* OR pang* OR spasm* OR cramp* OR sore* OR discomfort* OR suffer* OR uncomf* OR hurt*)))
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A.8 Non-pharmacological management of memory and cognitive problems

This literature search strategy was used for the following review:

- For adults with MS, including people receiving palliative care, what is the clinical and cost effectiveness of non-pharmacological interventions for memory and cognitive problems?

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 8: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 08 September 2021	Randomised controlled trials Systematic review studies Exclusions (animal studies, letters, comments, children)
Embase (OVID)	1974 – 08 September 2021	Randomised controlled trials Systematic review studies Exclusions (animal studies, letters, comments, conference abstracts, children)
The Cochrane Library (Wiley)	Cochrane Reviews to 2021 Issue 9 of 12 CENTRAL to 2021 Issue 9 of 12	None Exclusions (conference abstracts & clinical trials)
PsycINFO (Ovid)	Inception – 08 September 2021	Randomised controlled trials Systematic review studies Exclusions (conference abstracts & clinical trials)
Epistemonikos (The Epistemonikos Foundation)	Inception to 08 September 2021	Systematic Reviews Exclusions (Cochrane Reviews)

Medline (Ovid) search terms

590.	exp Multiple Sclerosis/
591.	((multiple or disseminated) adj2 scleros*).ti,ab.
592.	encephalomyelitis disseminata.ti,ab.
593.	MS.ti.
594.	Myelitis, Transverse/
595.	transverse myelitis.ti,ab.
596.	or/1-6
597.	letter/

598.	editorial/
599.	news/
600.	exp historical article/
601.	Anecdotes as Topic/
602.	comment/
603.	case report/
604.	(letter or comment*).ti.
605.	or/8-15
606.	randomized controlled trial/ or random*.ti,ab.
607.	16 not 17
608.	animals/ not humans/
609.	exp Animals, Laboratory/
610.	exp Animal Experimentation/
611.	exp Models, Animal/
612.	exp Rodentia/
613.	(rat or rats or mouse or mice or rodent*).ti.
614.	or/18-24
615.	7 not 25
616.	limit 26 to English language
617.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
618.	27 not 28
619.	exp Memory/ or exp Memory Disorders/ or exp Cognition/ or exp Cognition disorders/ or Attention/ or Extinction, Psychological/ or exp Mental processes/ or Neurocognitive disorders/
620.	Neuropsychology/ or Language/ or exp Speech/ or Problem solving/ or Mathematics/ or exp Learning/ or exp Thinking/ or exp Psycholinguistics/
621.	(cogniti* or neuropsychol* or neurocogniti* or memor* or learn* or perceptual or attentiv* or information process* or language or visuopat* or visuoconstruct* or problem solving or reason* or execut* or metacognit* or think* or judging or judgement).ti,ab.
622.	or/30-32
623.	Rehabilitation/ or Therapeutics/ or Therapy, computer-assisted/ or exp Neuropsychological Tests/
624.	Remedial teaching/ or "Recovery of function"/ or Exercise/ or exp *Counseling/
625.	(rehabilit* or restitut* or remediati* or restorat* or retrain* or train* or recover* or treat* or guid* or instruct* or teach* or stimulat* or exerci* or counsel* or therap* or intervent* or manag* or computer* tool* or computer* aid* or computer* app* or mobile app* or phone app* or smartphone app*).ti,ab.
626.	or/34-36
627.	33 and 37
628.	Cognitive Behavioral Therapy/ or Reminder systems/
629.	neuorehab*.ti,ab.
630.	((percept* or neurocogniti* or attention* or cogniti* or memory or memories or scanning) adj3 (train* or re-train* or retrain* or rehabilit* or interven* or therap*)).ti,ab.
631.	((metacogniti* or cogniti* or compensat* or memory) adj2 strateg*).ti,ab.
632.	((brain or metacogniti*) adj2 (train* or re-train* or retrain* or rehabilit*)).ti,ab.
633.	(psychoeducat* or psych educat*).ti,ab.
634.	((memory or memories) adj2 (aid* or prompt* or reminder*)).ti,ab.

635.	(apathy adj2 interven*).ti,ab.
636.	or/38-46
637.	(Luminosity or Cognifit or 'time pressure management' or CogMed or 'Attention Process Training' or RehaCom or 'Divided Attention' or 'Story memory technique' or 'story technique*' or 'Problem Solving' or 'Goal Management Training' or 'VILAT-G' or 'day plan*' or 'daily plan*').ti,ab.
638.	47 or 48
639.	29 and 49
640.	randomized controlled trial.pt.
641.	controlled clinical trial.pt.
642.	randomi#ed.ti,ab.
643.	placebo.ab.
644.	randomly.ti,ab.
645.	Clinical Trials as topic.sh.
646.	trial.ti.
647.	or/51-57
648.	Meta-Analysis/
649.	exp Meta-Analysis as Topic/
650.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
651.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
652.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
653.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
654.	(search* adj4 literature).ab.
655.	(medline or pubmed or cochrane or embase or psychlit or psychlit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
656.	cochrane.jw.
657.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
658.	or/59-68
659.	50 and (58 or 69)

Embase (Ovid) search terms

604.	exp *Multiple Sclerosis/
605.	((multiple or disseminated) adj2 scleros*).ti,ab.
606.	encephalomyelitis disseminata.ti,ab.
607.	MS.ti.
608.	myelitis/
609.	transverse myelitis.ti,ab.
610.	or/1-6
611.	letter.pt. or letter/
612.	note.pt.
613.	editorial.pt.
614.	(conference abstract or conference paper).pt.
615.	case report/ or case study/
616.	(letter or comment*).ti.
617.	or/8-13

618.	randomized controlled trial/ or random*.ti,ab.
619.	14 not 15
620.	animal/ not human/
621.	nonhuman/
622.	exp Animal Experiment/
623.	exp Experimental Animal/
624.	animal model/
625.	exp Rodent/
626.	(rat or rats or rodent* or mouse or mice).ti.
627.	or/16-23
628.	7 not 24
629.	(exp child/ or exp pediatrics/) not (exp adult/ or exp adolescent/)
630.	25 not 26
631.	limit 27 to English language
632.	exp *Memory/ or exp *Memory Disorder/ or exp *Cognition/ or exp *Cognitive defect/ or *Attention/ or *Reinforcement/ or exp *Mental function/ or *Disorders of higher cerebral function/
633.	*Neuropsychology/ or *Language/ or exp *Speech/ or exp *Problem solving/ or *Mathematics/ or exp *Learning/ or exp *Thinking/ or exp *linguistics/
634.	(cogniti* or neuropsychol* or neurocogniti* or memor* or learn* or perceptual or attentiv* or information process* or language or visuopat* or visuoconstruct* or problem solving or reason* or execut* or metacognit* or think* or judging or judgement).ti,ab.
635.	or/29-31
636.	*Rehabilitation/ or *Therapy/ or *Computer assisted therapy/ or exp *Neuropsychological test/
637.	exp *Teaching/ or *Convalescence/ or exp *Exercise/ or exp *Counseling/
638.	(rehabilit* or restruct* or remedi* or restorat* or retrain* or train* or recover* or treat* or guid* or instruct* or teach* or stimulat* or exerci* or counsel* or therap* or intervent* or manag* or computer* tool* or computer* aid* or computer* app* or mobile app* or phone app* or smartphone app*).ti,ab.
639.	or/33-35
640.	32 and 36
641.	*Cognitive Therapy/ or exp *Cognitive Behavioral Therapy/ or *Reminder systems/
642.	neuorehab*.ti,ab.
643.	((percept* or neurocogniti* or attention* or cogniti* or memory or memories or scanning) adj3 (train* or re-train* or retrain* or rehabilit* or interven* or therap*)).ti,ab.
644.	((metacogniti* or cogniti* or compensat* or memory) adj2 strateg*).ti,ab.
645.	((brain or metacogniti*) adj2 (train* or re-train* or retrain* or rehabilit*)).ti,ab.
646.	(psychoeducat* or psych educat*).ti,ab.
647.	((memory or memories) adj2 (aid* or prompt* or reminder*)).ti,ab.
648.	(apathy adj2 interven*).ti,ab.
649.	or/37-45
650.	(Luminosity or Cognifit or 'time pressure management' or CogMed or 'Attention Process Training' or RehaCom or 'Divided Attention' or 'Story memory technique' or 'story technique*' or 'Problem Solving' or 'Goal Management Training' or 'VILAT-G' or 'day plan*' or 'daily plan*').ti,ab.
651.	46 or 47
652.	28 and 48
653.	random*.ti,ab.

654.	factorial*.ti,ab.
655.	(crossover* or cross over*).ti,ab.
656.	((doubl* or singl*) adj blind*).ti,ab.
657.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
658.	crossover procedure/
659.	single blind procedure/
660.	randomized controlled trial/
661.	double blind procedure/
662.	or/50-58
663.	systematic review/
664.	meta-analysis/
665.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
666.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
667.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
668.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
669.	(search* adj4 literature).ab.
670.	(medline or pubmed or cochrane or embase or psychlit or psychlit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
671.	cochrane.jw.
672.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
673.	or/60-69
674.	49 and (59 or 70)

Cochrane Library (Wiley) search terms

#317.	MeSH descriptor: [Multiple Sclerosis] explode all trees
#318.	((multiple or disseminated) NEAR/2 scleros*).ti,ab
#319.	encephalomyelitis disseminata:ti,ab
#320.	MS:ti
#321.	MeSH descriptor: [Myelitis, Transverse] this term only
#322.	transverse myelitis:ti,ab
#323.	(or #1-#6)
#324.	MeSH descriptor: [Memory] explode all trees
#325.	MeSH descriptor: [Memory Disorders] explode all trees
#326.	MeSH descriptor: [Cognition] explode all trees
#327.	MeSH descriptor: [Cognition Disorders] explode all trees
#328.	MeSH descriptor: [Attention] this term only
#329.	MeSH descriptor: [Extinction, Psychological] this term only
#330.	MeSH descriptor: [Mental Processes] explode all trees
#331.	MeSH descriptor: [Neurocognitive Disorders] this term only
#332.	MeSH descriptor: [Neuropsychology] this term only
#333.	MeSH descriptor: [Language] this term only
#334.	MeSH descriptor: [Speech] explode all trees
#335.	MeSH descriptor: [Problem Solving] this term only
#336.	MeSH descriptor: [Mathematics] this term only

#337.	MeSH descriptor: [Learning] explode all trees
#338.	MeSH descriptor: [Thinking] explode all trees
#339.	MeSH descriptor: [Psycholinguistics] this term only
#340.	(cogniti* or neuropsychol* or neurocogniti* or memor* or learn* or perceptual or attentiv* or information process* or language or visuopat* or visuoconstruct* or problem solving or reason* or execut* or metacognit* or think* or judging or judgement):ti,ab
#341.	(or #8-#24)
#342.	MeSH descriptor: [Rehabilitation] this term only
#343.	MeSH descriptor: [Therapeutics] this term only
#344.	MeSH descriptor: [Therapy, Computer-Assisted] this term only
#345.	MeSH descriptor: [Neuropsychological Tests] this term only
#346.	MeSH descriptor: [Remedial Teaching] this term only
#347.	MeSH descriptor: [Recovery of Function] this term only
#348.	MeSH descriptor: [Exercise] this term only
#349.	MeSH descriptor: [Counseling] this term only
#350.	(rehabilit* or restitut* or remedi* or restorat* or retrain* or train* or recover* or treat* or guid* or instruct* or teach* or stimulat* or exerci* or counsel* or therap* or intervent* or manag* or computer* tool* or computer* aid* or computer* app* or mobile app* or phone app* or smartphone app*):ti,ab
#351.	(or #26-#34)
#352.	#25 and #35
#353.	MeSH descriptor: [Cognitive Behavioral Therapy] this term only
#354.	MeSH descriptor: [Reminder Systems] this term only
#355.	neurorehab*:ti,ab
#356.	((percept* or neurocogniti* or attention* or cogniti* or memory or memories or scanning) near/3 (train* or re-train* or retrain* or rehabilit* or interven* or therap*)):ti,ab
#357.	((metacogniti* or cogniti* or compensat* or memory) near/2 strateg*):ti,ab
#358.	((brain or metacogniti*) near/2 (train* or re-train* or retrain* or rehabilit*)):ti,ab
#359.	(psychoeducat* or psych educat*):ti,ab
#360.	((memory or memories) near/2 (aid* or prompt* or reminder*)):ti,ab
#361.	(apathy near/2 interven*):ti,ab
#362.	(or #36-#45)
#363.	(Luminosity or Cognifit or 'time pressure management' or CogMed or 'Attention Process Training' or RehaCom or 'Divided Attention' or 'Story memory technique' or 'story technique' or 'Problem Solving' or 'Goal Management Training' or 'VILAT-G' or 'day plan*' or 'daily plan*'):ti,ab
#364.	#46 or #47
#365.	#7 and #48
#366.	conference:pt or (clinicaltrials or trialsearch):so
#367.	#49 not #50

PsycINFO (Ovid) search terms

38.	exp Multiple Sclerosis/
39.	((multiple or disseminated) adj2 scleros*).ti,ab.
40.	encephalomyelitis disseminata.ti,ab.
41.	MS.ti.
42.	*myelitis/
43.	*demyelination/

44.	transverse myelitis.ti,ab.
45.	or/1-7
46.	Case report/
47.	letter/
48.	exp Mice/
49.	exp Rodents/
50.	exp Animals/ not (exp Human Males/ or Human Females/)
51.	(rat or rats or mouse or mice or rodent*).ti,ab.
52.	or/9-14
53.	8 not 15
54.	limit 16 to English language
55.	First posting.ps.
56.	16 and 18
57.	17 or 19
58.	exp cognition/ or exp cognitive development/ or exp cognitive impairment/ or exp cognitive processes/ or information processing model/ or metacognition/ or need for cognition/ or exp comprehension/ or concentration/ or exp concept formation/ or exp decision making/ or naming/ or exp problem solving/ or exp thinking/
59.	neuropsychology/ or exp memory/ or exp memory disorders/ or exp learning/ or exp attention/ or exp visual perception/ or exp language/ or exp mathematical ability/ or exp awareness/
60.	(cogniti* or neuropsychol* or neurocogniti* or memor* or learn* or perceptual or attentiv* or information process* or language or visuopat* or visuoconstruct* or problem solving or reason* or execut* or metacognit* or think* or judging or judgement).ti,ab.
61.	or/21-23
62.	exp rehabilitation/ or exp training/ or exp "recovery (disorders)"/ or exp treatment/ or exp cognitive techniques/ or exp intervention/ or exp counseling/ or rehabilitation counseling/ or exp Computer assisted therapy/
63.	exp teaching/ or exp exercise/ or exp neuropsychological rehabilitation/
64.	(rehabilit* or restitut* or remedi* or restorat* or retrain* or train* or recover* or treat* or guid* or instruct* or teach* or stimulat* or exerci* or counsel* or therap* or intervent* or manag* or computer* tool* or computer* aid* or computer* app* or mobile app* or phone app* or smartphone app*).ti,ab.
65.	or/25-27
66.	24 and 28
67.	*Cognitive Therapy/ or exp *Cognitive Behavioral Therapy/ or *Reminder systems/
68.	neuorehab*.ti,ab.
69.	((percept* or neurocogniti* or attention* or cogniti* or memory or memories or scanning) adj3 (train* or re-train* or retrain* or rehabilit* or interven* or therap*)).ti,ab.
70.	((metacogniti* or cogniti* or compensat* or memory) adj2 strateg*).ti,ab.
71.	((brain or metacogniti*) adj2 (train* or re-train* or retrain* or rehabilit*)).ti,ab.
72.	(psychoeducat* or psych educat*).ti,ab.
73.	((memory or memories) adj2 (aid* or prompt* or reminder*)).ti,ab.
74.	(apathy adj2 interven*).ti,ab.
75.	(Luminosity or Cognifit or 'time pressure management' or CogMed or 'Attention Process Training' or RehaCom or 'Divided Attention' or 'Story memory technique' or 'story technique*' or 'Problem Solving' or 'Goal Management Training' or 'VILAT-G' or 'day plan*' or 'daily plan*').ti,ab.
76.	or/30-38
77.	29 or 39

78.	20 and 40
79.	exp Clinical Trial/
80.	randomi*.ti,ab.
81.	((clinical* or control*) adj3 trial*).ti,ab.
82.	((singl* or doubl* or trebl* or tripl*) adj5 (blind* or mask*)).ti,ab.
83.	Placebos/ or placebo*.ti,ab.
84.	((crossover or cross-over or cross over) adj2 (design* or stud* or procedure* or trial*)).ti,ab.
85.	or/42-47
86.	"review"/ or review.pt. or review.ti.
87.	(systematic or evidence* or methodol* or quantitativ*).ti,ab.
88.	49 and 50
89.	Meta-Analysis/
90.	(meta-analy* or metanaly* or metaanaly* or meta analy*).ti,ab.
91.	((systematic* or evidence* or methodol* or quantitativ*) adj3 (review* or overview*)).ti,ab.
92.	((pool* or combined or combining) adj2 (data or trials or studies or results)).ti,ab.
93.	(systematic* or meta*).pt. or (literature review or meta analysis or systematic review).md.
94.	or/52-56
95.	41 and (48 or 51 or 57)

Epistemonikos search terms

8.	(advanced_title_en:(multiple sclerosis) OR advanced_abstract_en:(multiple sclerosis)) AND (advanced_title_en:(memory OR cognition OR cognitive neurocognitive OR neurocognition)) OR advanced_abstract_en:(memory OR cognition OR cognitive neurocognitive OR neurocognition))
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A.9 Ataxia and tremor

This literature search strategy was used for the following review:

- For adults with MS, what is the clinical and cost effectiveness of interventions for ataxia and tremor?

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

The Gabapentin part of the search was limited to 2000 onwards as this drug was not included in CG 186 and has only been used for ataxia and tremor in MS in the last 20 years.

Table 9: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	01 January 2014 – 08 September 2021	Randomised controlled trials Systematic review studies

Database	Dates searched	Search filter used
	Gabapentin only 01 January 2000 – 08 September 2021	Exclusions (animal studies, letters, comments, children)
Embase (OVID)	01 January 2014 – 08 September 2021	Randomised controlled trials Systematic review studies
	Gabapentin only 01 January 2000 – 08 September 2021	Exclusions (animal studies, letters, comments, conference abstracts, children)
The Cochrane Library (Wiley)	Cochrane Reviews 2014 to 2021 Issue 9 of 12	None
	Gabapentin only 2000 to 2021 Issue 9 of 12	Exclusions (conference abstracts & clinical trials)
	CENTRAL 2014 to 2021 Issue 9 of 12	
	Gabapentin only 2000 to 2021 Issue 9 of 12	
Epistemonikos (The Epistemonikos Foundation)	01 January 2014 – 08 September 2021	Systematic Reviews Exclusions (Cochrane Reviews)
	Gabapentin only 01 January 2000 – 08 September 2021	

Medline (Ovid) search terms

660.	exp Multiple Sclerosis/
661.	((multiple or disseminated) adj2 scleros*).ti,ab.
662.	encephalomyelitis disseminata.ti,ab.
663.	MS.ti.
664.	Myelitis, Transverse/
665.	transverse myelitis.ti,ab.
666.	or/1-6
667.	letter/
668.	editorial/
669.	news/
670.	exp historical article/
671.	Anecdotes as Topic/
672.	comment/
673.	case report/
674.	(letter or comment*).ti.
675.	or/8-15
676.	randomized controlled trial/ or random*.ti,ab.
677.	16 not 17
678.	animals/ not humans/
679.	exp Animals, Laboratory/
680.	exp Animal Experimentation/
681.	exp Models, Animal/
682.	exp Rodentia/
683.	(rat or rats or rodent or mouse or mice).ti.
684.	or/18-24

685.	7 not 25
686.	limit 26 to English language
687.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
688.	27 not 28
689.	gamma-aminobutyric acid/ or baclofen/ or pregabalin/
690.	("4 aminobutanoic acid*" or "4 aminobutyric acid*" or "gamma aminobutyric acid*" or "hydrochloride gamma-aminobutyric*" or aminalon* or gammalon* or GABA or Baclofen* or baclophen* or "chlorophenyl adj gaba" or lioresal or pregabalin* or "3 isobutyl gaba" or "3-aminomethyl-5-methylhexanoic acid" or Alzain or Axalid or Lecaent or Lyrica).ti,ab.
691.	anti-bacterial agents/ or exp antitubercular agents/
692.	(antibacterial* or anti-bacterial* or antimycobacterial* or antitubercul* or anti-tubercul*).ti,ab.
693.	exp Isoniazid/
694.	(Isoniazid or Ftivazide or Isonex or Isonicotinic* or Phthivazid* or Tubazide or INH or Tebesium* or Cemidon).ti,ab.
695.	exp Anticonvulsants/
696.	(anti adj2 (epileptic* or convulsant* or seizure*).ti,ab.
697.	(antiepileptic* or anticonvulsant* or AEDs or antiseizure).ti,ab.
698.	Benzodiazepines/ or Midazolam/ or Piracetam/
699.	(Acetazolamide or Diamox or Eytazox or Carbamazepine or tegretol or Carbazepin or Clobazam or Frisium or Perizam or Tapclob or Zacco or Epitol or Finlepsin or Neurotol or Amizepine or Eslicarbazepine or Zebinix or Oxcarbazepine or Trileptal or Ethosuximide or emeside or zarontin or Lacosamide or vimpat or Lamotrigine or Lamictal or Levetiracetam or keppra or Desitrend or Nitrazepam or Mogadon or Perampanel or fycompa or Phenobarbital or Phenobarbitone or Primidone or mysoline or Liskantin or Phenytoin or Dilantin or epanutin or Retigabine or trobalt or Riluzole or Rilutek or Teglutik or Rufinamide or inovelon or Tiagabine or gabitril or Topiramate or topamax or sodium valproate or epilim or episenta or epival or valproic acid or convulex or depakote or Belvo or Syonell or vigabatrin or sabril* or "gamma vinyl gaba*" or "gamma vinyl gamma aminobutyric acid*" or Zonisamide or zonegran or Dizemon or Benzodiazepine* or Clobazam or Clonazepam or rivotril or Diazepam or Diazemuls or Stesolid or Fosphenytoin or pro-epanutin or Lorazepam or Ativan or Midazolam or Hypnovel or Epistatus or buccolam or Phenobarbital or Phenytoin or Epanutin or Acetazolamide or diamox or Piracetam or nootropil).ti,ab.
700.	exp Adrenergic beta-Antagonists/
701.	((b or beta*) adj3 (block* or antagonist*).ti,ab.
702.	(propranolol or angilol or inderal-la or half-inalderal or inderal or bedranol or prograne or slo-pro or acebutolol or sectral or atenolol or tenormin or bisoprolol or cardicor or emcor or carvedilol or eucardic or celiprolol or celectol or co-tenidone or tenoret or tenoretic or esmolol or brevibloc or labetalol or trandate or metoprolol or betaloc or lopesor or nadolol or corgard or nebivolol or nebilet or hypoloc or oxprenolol or trasicor or slow-trasicor or pindolol or visken or sotalol or beta-cardone or sotacor or timolol or betim or Beta-Prograne).ti,ab.
703.	exp Serotonin 5-HT3 Receptor Antagonists/
704.	(5-HT3 adj2 Antagonis*).ti,ab.
705.	Ondansetron/
706.	(ondansetron or zofran or Dolasetron or Anzemet).ti,ab.
707.	exp Botulinum Toxins/
708.	(botulin* or onabotulinumtoxin* or abobotulinumtoxin* or incobotulinumtoxin* or prabotulinumtoxin* or rimabotulinum*).ti,ab.

709.	(dysport or botox or btx or oculinum or xeomin or relaxin or prosigne or purtox or nt201 or mybloc or neurobloc or Azzalure or Bocouture or Myobloc or Jeuveau).ti,ab.
710.	Dantrolene/ or Methocarbamol/ or Tramadol/ or Temazepam/ or Flunitrazepam/ or Flurazepam/ or Nitrazepam/
711.	(dantrolene or dantrium or tizanidine or zanaflex or methocarbamol or robaxin or tramadol or Brimisol or Invodol or zamadol or zydol or larapam or mabron or marol or maxitram or tramquel or Tilodol or Tramulief or zeridame or tradorec or nitrazepam or temazepam or flunitrazepam or Flurazepam or dalmene or zaleplon or sonata or zolpidem or stilnoct or zoiclone or zimovane).ti,ab.
712.	aminopyridines/ or *4-aminopyridine/
713.	(Fampyra or aminopyridine* or dalfampridine or fampridine* or pymadine or ampyra).ti,ab.
714.	or/30-54
715.	29 and 55
716.	Gabapentin/
717.	(gabapentin* or 1-aminomethylcyclohexaneacetic acid or convalis or Neurontin).ti,ab.
718.	or/57-58
719.	29 and 59
720.	randomized controlled trial.pt.
721.	controlled clinical trial.pt.
722.	randomi#ed.ti,ab.
723.	placebo.ab.
724.	randomly.ti,ab.
725.	Clinical Trials as topic.sh.
726.	trial.ti.
727.	or/61-67
728.	Meta-Analysis/
729.	exp Meta-Analysis as Topic/
730.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
731.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
732.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
733.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
734.	(search* adj4 literature).ab.
735.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
736.	cochrane.jw.
737.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
738.	or/69-78
739.	56 and (68 or 79)
740.	60 and (68 or 79)
741.	80 or 81

Embase (Ovid) search terms

675.	exp *Multiple Sclerosis/
676.	((multiple or disseminated) adj2 scleros*).ti,ab.
677.	encephalomyelitis disseminata.ti,ab.
678.	MS.ti.

679.	myelitis/
680.	transverse myelitis.ti,ab.
681.	or/1-6
682.	letter.pt. or letter/
683.	note.pt.
684.	editorial.pt.
685.	(conference abstract or conference paper).pt.
686.	case report/ or case study/
687.	(letter or comment*).ti.
688.	or/8-13
689.	randomized controlled trial/ or random*.ti,ab.
690.	14 not 15
691.	animal/ not human/
692.	nonhuman/
693.	exp Animal Experiment/
694.	exp Experimental Animal/
695.	animal model/
696.	exp Rodent/
697.	(rat or rats or rodent* or mouse or mice).ti.
698.	or/16-23
699.	7 not 24
700.	limit 25 to English language
701.	(exp child/ or exp pediatrics/) not (exp adult/ or exp adolescent/)
702.	26 not 27
703.	4 aminobutyric acid/
704.	baclofen/
705.	pregabalin/
706.	("4 aminobutanoic acid*" or "4 aminobutyric acid*" or "gamma aminobutyric acid*" or "hydrochloride gamma-aminobutyric*" or aminalon* or gammalon* or GABA or Baclofen* or baclophen* or "chlorophenyl adj gaba" or lioresal or pregabalin* or "3 isobutyl gaba" or "3-aminomethyl-5-methylhexanoic acid" or Alzain or Axalid or Lecaent or Lyrica).ti,ab.
707.	antiinfective agent/
708.	exp tuberculostatic agent/
709.	(antibacterial* or anti-bacterial* or antimycobacterial* or antitubercul* or anti-tubercul*).ti,ab.
710.	exp isoniazid/
711.	(Isoniazid or Ftivazide or Isonex or Isonicotinic* or Phthivazid* or Tubazide or INH or Tebesium* or Cemidon).ti,ab.
712.	exp anticonvulsive agent/
713.	(anti adj2 (epileptic* or convulsant* or seizure*)).ti,ab.
714.	(antiepileptic* or anticonvulsant* or AEDs or antiseizure).ti,ab.
715.	benzodiazepine/
716.	piracetam/
717.	(Acetazolamide or Diamox or Eytazox or Carbamazepine or tegretol or Carbazepin or Clobazam or Frisium or Perizam or Tapclob or Zacco or Epitol or Finlepsin or Neurotol or Amizepine or Eslicarbazepine or Zebinix or Oxcarbazepine or Trileptal or Ethosuximide or emeside or zarontin or Lacosamide or vimpat or Lamotrigine or

	Lamictal or Levetiracetam or keppra or Desitrend or Nitrazepam or Mogadon or Perampanel or fycompa or Phenobarbital or Phenobarbitone or Primidone or mysoline or Liskantin or Phenytoin or Dilantin or epanutin or Retigabine or trobalt or Riluzole or Rilutek or Teglutik or Rufinamide or inovelon or Tiagabine or gabitril or Topiramate or topamax or sodium valproate or epilim or episenta or epival or valproic acid or convulex or depakote or Belvo or Syonell or vigabatrin or sabril* or "gamma vinyl gaba*" or "gamma vinyl gamma aminobutyric acid*" or Zonisamide or zonegran or Desizon or Benzodiazepine* or Clobazam or Clonazepam or rivotril or Diazepam or Diazemuls or Stesolid or Fosphenytoin or pro-epanutin or Lorazepam or Ativan or Midazolam or Hypnovel or Epistatus or buccolam or Phenobarbital or Phenytoin or Epanutin or Acetazolamide or diamox or Piracetam or nootropil).ti,ab.
718.	exp beta adrenergic receptor blocking agent/
719.	((b or beta*) adj3 (block* or antagonist*)).ti,ab.
720.	(propranolol or angilol or inderal-la or half-inalder or inderal or bedranol or prograne or slo-pro or acebutolol or sectral or atenolol or tenormin or bisoprolol or cardicor or emcor or carvedilol or eucardic or celiprolol or celectol or co-tenidone or tenoret or tenoretic or esmolol or brevibloc or labetalol or trandate or metoprolol or betaloc or lopesor or nadolol or corgard or nebivolol or nebilet or hypoloc or oxprenolol or trasicor or slow-trasicor or pindolol or visken or sotalol or beta-cardone or sotacor or timolol or betim or Beta-Prograne).ti,ab.
721.	exp serotonin 3 antagonist/
722.	(5-HT3 adj2 Antagonis*).ti,ab.
723.	ondansetron/
724.	(ondansetron or zofran or Dolasetron or Anzemet).ti,ab.
725.	exp botulinum toxin/
726.	(botulin* or onabotulinumtoxin* or abobotulinumtoxin* or incobotulinumtoxin* or prabotulinumtoxin* or rimabotulinum*).ti,ab.
727.	(dysport or botox or btx or oculinum or xeomin or reloxin or prosigne or purtox or nt201 or mybloc or neurobloc or Azzalure or Bocouture or Myobloc or Jeuveau).ti,ab.
728.	dantrolene/
729.	methocarbamol/
730.	tramadol/
731.	temazepam/
732.	flunitrazepam/
733.	flurazepam/
734.	nitrazepam/
735.	(dantrolene or dantrium or tizanidine or zanaflex or methocarbamol or robaxin or tramadol or Brimisol or Invodol or zamadol or zydol or larapam or mabron or marol or maxitram or tramquel or Tilodol or Tramulief or zeridame or tradorec or nitrazepam or temazepam or flunitrazepam or Flurazepam or dalmene or zaleplon or sonata or zolpidem or stilnoct or zoiclone or zimovane).ti,ab.
736.	aminopyridine derivative/
737.	fampridine/
738.	(Fampyra or aminopyridine* or dalfampridine or fampridine* or pymadine or ampyra).ti,ab.
739.	or/29-64
740.	28 and 65
741.	gabapentin/
742.	(gabapentin* or 1-aminomethylcyclohexaneacetic acid or convalis or Neurontin).ti,ab.
743.	or/67-68
744.	28 and 69
745.	random*.ti,ab.

746.	factorial*.ti,ab.
747.	(crossover* or cross over*).ti,ab.
748.	((doubl* or singl*) adj blind*).ti,ab.
749.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
750.	crossover procedure/
751.	single blind procedure/
752.	randomized controlled trial/
753.	double blind procedure/
754.	or/71-79
755.	systematic review/
756.	meta-analysis/
757.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
758.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
759.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
760.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
761.	(search* adj4 literature).ab.
762.	(medline or pubmed or cochrane or embase or psychlit or psychlit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
763.	cochrane.jw.
764.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
765.	or/81-90
766.	66 and (80 or 91)
767.	70 and (80 or 91)
768.	92 or 93

Cochrane Library (Wiley) search terms

#368.	MeSH descriptor: [Multiple Sclerosis] explode all trees
#369.	((multiple or disseminated) NEAR/2 scleros*):ti,ab
#370.	(encephalomyelitis disseminata or disseminated encephalomyelitis or ADEM):ti,ab
#371.	MS:ti
#372.	MeSH descriptor: [Myelitis, Transverse] this term only
#373.	transverse myelitis:ti,ab
#374.	(OR #1-#6)
#375.	MeSH descriptor: [gamma-Aminobutyric Acid] this term only
#376.	MeSH descriptor: [Baclofen] this term only
#377.	MeSH descriptor: [Pregabalin] this term only
#378.	("4 aminobutanoic acid*" or "4 aminobutyric acid*" or "gamma aminobutyric acid*" or "hydrochloride gamma-aminobutyric*" or aminalon* or gammalon* or gaba or Baclofen* or baclophen* or "chlorophenyl NEAR gaba" or lioresal or pregabalin* or "3 isobutyl gaba" or "3-aminomethyl-5-methylhexanoic acid" or Alzain or Axalid or Lecaent or lyrica):ti,ab
#379.	MeSH descriptor: [Anti-Bacterial Agents] this term only
#380.	MeSH descriptor: [Antitubercular Agents] explode all trees
#381.	(antibacterial* or anti-bacterial* or antimycobacterial* or antitubercul* or anti-tubercul*):ti,ab
#382.	MeSH descriptor: [Isoniazid] explode all trees

#383.	(Isoniazid or Ftivazide or Isonex or Isonicotinic* or Phthivazid* or Tubazide or INH or Tebesium* or Cemidon):ti,ab
#384.	MeSH descriptor: [Anticonvulsants] explode all trees
#385.	(anti NEAR/2 (epileptic* or convulsant* or seizure*)):ti,ab
#386.	(antiepileptic* or anticonvulsant* or AEDs or antiseizure):ti,ab
#387.	MeSH descriptor: [Benzodiazepines] this term only
#388.	MeSH descriptor: [Midazolam] this term only
#389.	MeSH descriptor: [Piracetam] this term only
#390.	(Acetazolamide or Diamox or Eytazox or Carbamazepine or tegretol or Carbazepin or Clobazam or Frisium or Perizam or Tapclob or Zacco or Epitol or Finlepsin or Neurotol or Amizepine or Eslicarbazepine or Zebinix or Oxcarbazepine or Trileptal or Ethosuximide or emeside or zarontin or Lacosamide or vimpat or Lamotrigine or Lamictal or Levetiracetam or keppra or Desitrend or Nitrazepam or Mogadon or Perampanel or fycompa or Phenobarbital or Phenobarbitone or Primidone or mysoline or Liskantin or Phenytoin or Dilantin or epanutin or Retigabine or trobalt or Riluzole or Rilutek or Teglutik or Rufinamide or inovelon or Tiagabine or gabitril or Topiramate or topamax or sodium valproate or epilim or episenta or epival or valproic acid or convulex or depakote or Belvo or Syonell or vigabatrin or sabril* or "gamma vinyl gaba*" or "gamma vinyl gamma aminobutyric acid*" or Zonisamide or zonegran or Desizon or Benzodiazepine* or Clobazam or Clonazepam or rivotril or Diazepam or Diazemuls or Stesolid or Fosphenytoin or pro-epanutin or Lorazepam or Ativan or Midazolam or Hypnovel or Epistatus or buccolam or Phenobarbital or Phenytoin or Epanutin or Acetazolamide or diamox or Piracetam or nootropil):ti,ab
#391.	MeSH descriptor: [Adrenergic beta-Antagonists] explode all trees
#392.	((b or beta*) NEAR/3 (block* or antagonist*)):ti,ab
#393.	(propranolol or angilol or inderal-la or half-inalder or inderal or bedranol or prograne or slo-pro or acebutolol or sectral or atenolol or tenormin or bisoprolol or cardicor or emcor or carvedilol or eucardic or celiprolol or celectol or co-tenidone or tenoret or tenoretic or esmolol or brevivloc or labetalol or trandate or metoprolol or betaloc or lopesor or nadolol or corgard or nebivolol or nebilet or hypoloc or oxprenolol or trasicor or slow-trasicor or pindolol or visken or sotalol or beta-cardone or sotacor or timolol or betim or Beta-Prograne):ti,ab
#394.	MeSH descriptor: [Serotonin 5-HT3 Receptor Antagonists] explode all trees
#395.	(5 HT3 NEAR/2 Antagonis*):ti,ab
#396.	MeSH descriptor: [Ondansetron] this term only
#397.	(ondansetron or zofran or Dolasetron or Anzemet):ti,ab
#398.	MeSH descriptor: [Botulinum Toxins] explode all trees
#399.	(botulin* or onabotulinumtoxin* or abobotulinumtoxin* or incobotulinumtoxin* or prabotulinumtoxin* or rimabotulinum*):ti,ab
#400.	(dysport or botox or btx or oculinum or xeomin or reloxin or prosigne or purtox or nt201 or mybloc or neurobloc or Azzalure or Bocouture or Myobloc or Jeuveau):ti,ab
#401.	MeSH descriptor: [Dantrolene] this term only
#402.	MeSH descriptor: [Methocarbamol] this term only
#403.	MeSH descriptor: [Tramadol] this term only
#404.	MeSH descriptor: [Temazepam] this term only
#405.	MeSH descriptor: [Flunitrazepam] this term only
#406.	MeSH descriptor: [Flurazepam] this term only
#407.	MeSH descriptor: [Nitrazepam] this term only
#408.	(dantrolene or dantrium or tizanidine or zanaflex or methocarbamol or robaxin or tramadol or Brimisol or Invodol or zamadol or zydol or larapam or mabron or marol or maxitram or tramquel or Tilodol or Tramulief or zeridame or tradorec or nitrazepam or

	temazepam or flunitrazepam or Flurazepam or dalmane or zaleplon or sonata or zolpidem or stilnoct or zoiclone or zimovane):ti,ab
#409.	MeSH descriptor: [Aminopyridines] this term only
#410.	MeSH descriptor: [4-Aminopyridine] this term only
#411.	(Fampyra or Aminopyridine* or dalfampridine or fampridine* or pymadine or ampyra):ti,ab
#412.	(OR #8-#44)
#413.	#7 AND #45
#414.	MeSH descriptor: [Gabapentin] this term only
#415.	(gabapentin* or 1 aminomethylcyclohexaneacetic acid or convalis or Neurontin):ti,ab
#416.	(OR #47-#48)
#417.	#7 AND #49
#418.	conference:pt or (clinicaltrials or trialsearch):so
#419.	#46 or #50
#420.	#52 NOT #51

Epistemonikos search terms

1.	((title:(multiple sclerosis) OR abstract:(multiple sclerosis)) AND (title:(ataxia OR tremor) OR abstract:(ataxia OR tremor)))
2.	((advanced_title_en:("multiple sclerosis" OR "disseminated sclerosis" OR "encephalomyelitis disseminata" OR MS OR "transverse myelitis") OR advanced_abstract_en:("multiple sclerosis" OR "disseminated sclerosis" OR "encephalomyelitis disseminata" OR MS OR "transverse myelitis")) AND ((advanced_title_en:(gabapentin* OR 1-aminomethylcyclohexaneacetic acid OR convalis OR Neurontin) OR advanced_abstract_en:(gabapentin* OR 1-aminomethylcyclohexaneacetic acid OR convalis OR Neurontin)))
3.	1 or 2

A.10 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to Multiple Sclerosis (Update) population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on The International Network of Agencies for Health Technology Assessment (INAHTA) database, Medline and Embase for health economics and quality of life studies. Searches for quality of life studies were run for general information.

Table 10: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	01 January 2014 – 07 September 2021	Health economics studies Quality of life studies Exclusions (animal studies, letters, comments, children)
Embase	01 January 2014 – 07 September 2021	Health economics studies Quality of life studies

Database	Dates searched	Search filter used
		Exclusions (animal studies, letters, comments, conference abstracts, children)
Centre for Research and Dissemination (CRD)	HTA – 01 January 2014 – 31 March 2018 NHSEED – 01 January 2014 – March 2015	None
The International Network of Agencies for Health Technology Assessment (INAHTA)	01 January 2018 – 07 September 2021	None

Medline (Ovid) search terms

1.	exp Multiple Sclerosis/
2.	((multiple or disseminated) adj2 scleros*).ti,ab.
3.	encephalomyelitis disseminata.ti,ab.
4.	MS.ti.
5.	Myelitis, Transverse/
6.	transverse myelitis.ti,ab.
7.	or/1-6
8.	*Demyelinating Diseases/
9.	*Demyelinating Autoimmune Diseases, CNS/
10.	(Demyelinat* adj2 (syndrome* or disease* or autoimmun*)).ti,ab.
11.	(Chronic Cerebrospinal Venous Insufficiency or CCSVI).ti,ab.
12.	Venous Insufficiency/cf, co, di, dg, et [Cerebrospinal Fluid, Complications, Diagnosis, Diagnostic Imaging, Etiology]
13.	(Devic* adj (disease or syndrome)).ti,ab.
14.	((clinical* isolat* or radiological* isolat*) adj2 syndrome*).ti,ab.
15.	exp Optic Neuritis/
16.	((neuromyelitis or neuritis or neuropapillitis) adj2 (retrobulbar or optic*)).ti,ab.
17.	(NMO or NMOSD).ti,ab.
18.	or/1-17
19.	letter/
20.	editorial/
21.	news/
22.	exp historical article/
23.	Anecdotes as Topic/
24.	comment/
25.	case report/
26.	(letter or comment*).ti.
27.	or/19-26
28.	randomized controlled trial/ or random*.ti,ab.
29.	27 not 28
30.	animals/ not humans/

31.	exp Animals, Laboratory/
32.	exp Animal Experimentation/
33.	exp Models, Animal/
34.	exp Rodentia/
35.	(rat or rats or rodent* or mouse or mice).ti.
36.	or/29-35
37.	18 not 36
38.	limit 37 to English language
39.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
40.	38 not 39
41.	Economics/
42.	Value of life/
43.	exp "Costs and Cost Analysis"/
44.	exp Economics, Hospital/
45.	exp Economics, Medical/
46.	Economics, Nursing/
47.	Economics, Pharmaceutical/
48.	exp "Fees and Charges"/
49.	exp Budgets/
50.	budget*.ti,ab.
51.	cost*.ti.
52.	(economic* or pharmaco?economic*).ti.
53.	(price* or pricing*).ti,ab.
54.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
55.	(financ* or fee or fees).ti,ab.
56.	(value adj2 (money or monetary)).ti,ab.
57.	or/41-56
58.	quality-adjusted life years/
59.	sickness impact profile/
60.	(quality adj2 (wellbeing or well being)).ti,ab.
61.	sickness impact profile.ti,ab.
62.	disability adjusted life.ti,ab.
63.	(qal* or qtime* or qwb* or daly*).ti,ab.
64.	(euroqol* or eq5d* or eq 5*).ti,ab.
65.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
66.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
67.	(hui or hui1 or hui2 or hui3).ti,ab.
68.	(health* year* equivalent* or hye or hyes).ti,ab.
69.	discrete choice*.ti,ab.

70.	rosser.ti,ab.
71.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
72.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
73.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
74.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
75.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
76.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
77.	or/58-76
78.	40 and 57
79.	40 and 77
80.	78 or 79

Embase (Ovid) search terms

1.	exp Multiple Sclerosis/
2.	((multiple or disseminated) adj2 scleros*).ti,ab.
3.	encephalomyelitis disseminata.ti,ab.
4.	MS.ti.
5.	myelitis/
6.	transverse myelitis.ti,ab.
7.	or/1-6
8.	demyelinating disease/
9.	(Demyelinat* adj2 (syndrome* or disease* or autoimmun*)).ti,ab.
10.	(Chronic Cerebrospinal Venous Insufficiency or CCSVI).ti,ab.
11.	vein insufficiency/co, di, et [Complication, Diagnosis, Etiology]
12.	(Devic* adj (disease or syndrome)).ti,ab.
13.	((clinical* isolat* or radiological* isolat*) adj2 syndrome*).ti,ab.
14.	exp optic neuritis/
15.	((neuromyelitis or neuritis or neuropapillitis) adj2 (retrobulbar or optic*)).ti,ab.
16.	(NMO or NMOSD).ti,ab.
17.	or/1-16
18.	letter.pt. or letter/
19.	note.pt.
20.	editorial.pt.
21.	(conference abstract or conference paper).pt.
22.	case report/ or case study/
23.	(letter or comment*).ti.
24.	or/18-23
25.	randomized controlled trial/ or random*.ti,ab.
26.	24 not 25
27.	animal/ not human/
28.	nonhuman/
29.	exp Animal Experiment/

30.	exp Experimental Animal/
31.	animal model/
32.	exp Rodent/
33.	(rat or rats or rodent* or mouse or mice).ti.
34.	or/26-33
35.	17 not 34
36.	(exp child/ or exp pediatrics/) not (exp adult/ or exp adolescent/)
37.	35 not 36
38.	limit 37 to English language
39.	health economics/
40.	exp economic evaluation/
41.	exp health care cost/
42.	exp fee/
43.	budget/
44.	funding/
45.	budget*.ti,ab.
46.	cost*.ti.
47.	(economic* or pharmaco?economic*).ti.
48.	(price* or pricing*).ti,ab.
49.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
50.	(financ* or fee or fees).ti,ab.
51.	(value adj2 (money or monetary)).ti,ab.
52.	or/39-51
53.	quality adjusted life year/
54.	"quality of life index"/
55.	short form 12/ or short form 20/ or short form 36/ or short form 8/
56.	sickness impact profile/
57.	(quality adj2 (wellbeing or well being)).ti,ab.
58.	sickness impact profile.ti,ab.
59.	disability adjusted life.ti,ab.
60.	(qal* or qtime* or qwb* or daly*).ti,ab.
61.	(euroqol* or eq5d* or eq 5*).ti,ab.
62.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
63.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
64.	(hui or hui1 or hui2 or hui3).ti,ab.
65.	(health* year* equivalent* or hye or hyes).ti,ab.
66.	discrete choice*.ti,ab.
67.	rosser.ti,ab.
68.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
69.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
70.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
71.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
72.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
73.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.

74.	or/53-73
75.	38 and 52
76.	38 and 74
77.	75 or 76

NHS EED and HTA (CRD) search terms

#1.	MeSH DESCRIPTOR Multiple Sclerosis EXPLODE ALL TREES
#2.	((multiple or disseminated) adj2 scleros*)
#3.	(encephalomyelitis disseminata)
#4.	(MS)
#5.	MeSH DESCRIPTOR Myelitis, Transverse EXPLODE ALL TREES
#6.	(transverse myelitis)
#7.	MeSH DESCRIPTOR Demyelinating Diseases EXPLODE ALL TREES
#8.	((Demyelinat* adj2 (syndrome or disease)))
#9.	(Chronic Cerebrospinal Venous Insufficiency)
#10.	MeSH DESCRIPTOR Venous Insufficiency
#11.	((Devic or "devic's") adj (disease or syndrome)))
#12.	((clinically isolated or radiologically isolated) adj syndrome))
#13.	MeSH DESCRIPTOR Optic Neuritis EXPLODE ALL TREES
#14.	(Neuromyelitis Optica)
#15.	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14

INAHTA search terms

1.	(multiple sclerosis)[mh] OR (((multiple or disseminated) adj2 scleros*)) OR (encephalomyelitis disseminata) OR (MS)[Title] OR (Myelitis, Transverse)[mh] OR (transverse myelitis) OR (Demyelinating Diseases)[mh] OR (Demyelinating Autoimmune Diseases, CNS)[mh] OR ((Demyelinat* adj2 (syndrome* or disease* or autoimmun*))) OR ((Chronic Cerebrospinal Venous Insufficiency or CCSVI)) OR (venous insufficiency)[mh] OR ((Devic* adj (disease or syndrome))) OR (((clinical* isolat* or radiological* isolat*) adj2 syndrome*)) OR (optic neuritis)[mh] OR (((neuromyelitis or neuritis or neuropapillitis) adj2 (retrobulbar or optic*))) OR ((NMO or NMOSD))
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