

Suspected neurological conditions: recognition and referral

NICE guideline: short version

Draft for consultation, August 2017

This guideline covers the initial assessment of symptoms and signs that might indicate a neurological condition. It helps non-specialist healthcare professionals to identify people who should be offered referral for specialist investigation. The guideline has separate sections for adults (over 16) and children (under 16).

Who is it for?

- Non-specialist healthcare professionals in primary and secondary care.
- Healthcare professionals in neurology departments.
- People with suspected neurological conditions, their families and carers.

This version of the guideline contains the draft recommendations and the context. Information about how the guideline was developed is on the [guideline's page](#) on the NICE website. This includes the guideline committee's discussion and the evidence reviews (in the [full guideline](#)), the scope, and details of the committee and any declarations of interest.

1 Contents

2	Recommendations for adults aged over 16.....	4
3	1.1 Blackouts in adults	4
4	1.2 Dizziness and vertigo in adults.....	4
5	1.3 Facial pain, atraumatic.....	6
6	1.4 Gait unsteadiness	6
7	1.5 Handwriting difficulties	7
8	1.6 Limb or facial weakness in adults.....	8
9	1.7 Memory failure	9
10	1.8 Posture distortion in adults.....	11
11	1.9 Sensory symptoms such as tingling or numbness in adults	11
12	1.10 Sleep disorders in adults.....	13
13	1.11 Smell or taste problems	14
14	1.12 Speech problems in adults.....	15
15	1.13 Tics and involuntary movements in adults	15
16	1.14 Tremor in adults.....	16
17	1.15 Information and support.....	17
18	Recommendations for children aged under 16.....	17
19	1.16 Attention, concentration and memory problems.....	18
20	1.17 Blackouts and other paroxysmal events	18
21	1.18 Confusion, acute	19
22	1.19 Dizziness and vertigo in children	19
23	1.20 Headache	20
24	1.21 Head shape or size abnormalities.....	21
25	1.22 Hypotonia ('floppiness').....	23
26	1.23 Limb or facial weakness in children	24
27	1.24 Motor development delay and unsteadiness.....	24
28	1.25 Posture distortion in children.....	25
29	1.26 Sensory symptoms such as tingling or numbness in children.....	25
30	1.27 Sleep disorders in children.....	26
31	1.28 Speech problems in children.....	27
32	1.29 Squint.....	27
33	1.30 Tics and involuntary movements in children	27

DRAFT FOR CONSULTATION

1	1.31 Tremor in children	28
2	Putting this guideline into practice	29
3	Context.....	31
4		
5		

1 Recommendations for adults aged over 16

People have the right to be involved in discussions and make informed decisions about their care, as described in [your care](#).

[Making decisions using NICE guidelines](#) explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

2

3 In this guideline:

- 4 • 'Refer urgently' means the person should be seen by the specialist service within
5 2 weeks.
- 6 • 'Refer immediately' means the person should be seen by the specialist service
7 within a few hours, or even more quickly if necessary.
- 8 • 'Refer' means a routine referral.

9 **1.1 Blackouts in adults**

10 1.1.1 Refer urgently adults with new-onset blackouts (transient loss of
11 consciousness), accompanied by features that are strongly suggestive of
12 epileptic seizures, for neurological assessment in line with the
13 recommendation for people with [suspected epilepsy](#) in the NICE guideline
14 on transient loss of consciousness ('blackouts') in over 16s.

15 1.1.2 Do not refer adults with blackouts if there are clear features of vasovagal
16 syncope, even if associated with brief jerking of the limbs. See
17 [recommendation 1.1.4.3 on uncomplicated faint](#) in the NICE guideline on
18 transient loss of consciousness ('blackouts') in over 16s.

19 **1.2 Dizziness and vertigo in adults**

20 1.2.1 For adults with sudden-onset dizziness and a focal neurological deficit
21 such as ataxia, deafness, or vertical or rotatory nystagmus:

- 1 • if the person has diabetes, check for and treat hypoglycaemia
- 2 • if the person does not have diabetes, or treating hypoglycaemia does
- 3 not resolve the symptoms, refer immediately to exclude posterior
- 4 circulation stroke, in line with the NICE guideline on [stroke and](#)
- 5 [transient ischaemic attack in over 16s.](#)
- 6 1.2.2 For adults with sudden-onset acute vestibular syndrome (vertigo, nausea
- 7 or vomiting and gait unsteadiness) a HINTS (head-impulse–nystagmus–
- 8 test-of-skew) test should be performed if a healthcare professional trained
- 9 in the use of this test is available.
- 10 1.2.3 For adults with sudden-onset acute vestibular syndrome who have had a
- 11 HINTS test:
- 12 • be aware that a negative HINTS test makes a diagnosis of stroke very
- 13 unlikely
- 14 • refer the person immediately for neuroimaging if the HINTS test shows
- 15 indications of stroke (a normal head impulse test, direction-changing
- 16 nystagmus or skew deviation).
- 17 1.2.4 Be aware that dizziness in adults with no imbalance or other focal
- 18 neurological deficit is unlikely to indicate a serious neurological condition.
- 19 1.2.5 For adults with transient rotational vertigo on head movement:
- 20 • offer the Hallpike manoeuvre to check for benign paroxysmal positional
- 21 vertigo (BPPV)
- 22 • if BPPV is diagnosed, offer the canalith repositioning (Epley)
- 23 manoeuvre, unless the person has unstable cervical spine disease
- 24 • be aware that BPPV is common after a head injury or labyrinthitis.
- 25 1.2.6 Be alert to the possibility of vestibular migraine (migraine-associated
- 26 vertigo) in adults who have episodes of dizziness that last between
- 27 5 minutes and 72 hours and a history of recurrent headache.
- 28 1.2.7 Be aware that recurrent dizziness might be part of a functional illness or
- 29 anxiety disorder and might not need referral. Features suggestive of

1 functional illness include multifocal symptoms, fleeting sensations (such
2 as twitches, buzzing sensations or electric shocks), a previous diagnosis
3 of functional illness, no neurological signs and normal neuroimaging

4 1.2.8 Advise adults with recurrent dizziness and an anxiety disorder or a
5 suspected functional neurological disorder that their dizziness will
6 fluctuate and might increase during times of stress.

7 1.2.9 Refer adults with recurrent fixed-pattern dizziness associated with
8 alteration of consciousness to have an assessment for epilepsy in line
9 with the NICE guideline on [epilepsies](#).

10 **1.3 Facial pain, atraumatic**

11 1.3.1 Refer urgently adults with facial pain associated with persistent facial
12 numbness or abnormal neurological signs for neuroimaging.

13 1.3.2 Refer adults with unilateral facial pain that is triggered by touching the
14 affected part of the face (trigeminal neuralgia) and is refractory to
15 treatment, in line with the NICE guideline on [neuropathic pain in adults](#).

16 1.3.3 For adults with scalp tenderness or jaw claudication suggestive of
17 temporal arteritis, consider blood tests and follow local pathways for
18 suspected giant cell (temporal) arteritis. Be aware that a normal ESR
19 (erythrocyte sedimentation rate) does not exclude a diagnosis of giant cell
20 arteritis.

21 **1.4 Gait unsteadiness**

22 1.4.1 For recommendations on assessing sudden-onset unsteady gait in adults,
23 see the NICE guideline on [stroke and transient ischaemic attack in over](#)
24 [16s](#).

25 1.4.2 Refer urgently adults with rapidly (within days to weeks) progressive
26 unsteady gait (gait ataxia) for neurological assessment.

27 1.4.3 Refer adults with gradually progressive unsteady gait (gait ataxia) for
28 neurological assessment and:

- 1 • take an alcohol history and follow the recommendations in the NICE
2 guideline on [alcohol-use disorders: diagnosis, assessment and](#)
3 [management of harmful drinking and alcohol dependence](#)
4 • consider serological testing for gluten sensitivity and vitamin B12 and
5 folate deficiency and, if coeliac disease is suspected, follow the
6 recommendations in the NICE guideline on [coeliac disease](#).
- 7 1.4.4 Refer adults who have difficulty initiating and coordinating walking (gait
8 apraxia) to neurology or an elderly care clinic to exclude normal pressure
9 hydrocephalus.
- 10 1.4.5 For adults with unsteadiness of gait who are at risk of falling, follow the
11 recommendations on [multifactorial falls risk assessment](#) in the NICE
12 guideline on falls in older people and consider referral to a falls prevention
13 team.
- 14 **1.5 *Handwriting difficulties***
- 15 1.5.1 Ask adults who have difficulty with handwriting that has no obvious
16 musculoskeletal cause to demonstrate their handwriting and:
- 17 • if their handwriting is small and slow, consider referral for possible
18 Parkinson's disease
19 • if their difficulty is specific to the task of handwriting and examination
20 shows no other abnormalities, consider referral for possible focal
21 dystonia
22 • if they have a problem with language fluency rather than hand function,
23 refer for neurological assessment.
- 24 1.5.2 Refer adults who have difficulty with handwriting that is of sudden onset
25 and that has no obvious musculoskeletal cause for a neurological
26 assessment according to local stroke pathways.

1 **1.6 *Limb or facial weakness in adults***

2 1.6.1 For recommendations on assessing sudden-onset limb or facial weakness
3 in adults, see the NICE guideline on [stroke and transient ischaemic attack](#)
4 [in over 16s](#).

5 1.6.2 Do not refer adults with an uncomplicated episode of Bell's palsy
6 (unilateral lower motor neurone pattern facial weakness affecting all parts
7 of the face and including weakness of eye closure).

8 1.6.3 Advise adults with Bell's palsy that the rate of improvement is variable
9 and maximum recovery can take several months.

10 1.6.4 Consider referring adults with a previous diagnosis of Bell's palsy who
11 have developed symptoms of aberrant reinnervation (including gustatory
12 sweating or jaw-winking) 5 months or more after the onset of Bell's palsy
13 for neurological assessment and possible treatment.

14 1.6.5 Refer urgently adults with rapidly (within hours to days) progressive
15 weakness of a single limb or hemiparesis for investigation, including
16 neuroimaging, in line with the recommendation on [brain and central](#)
17 [nervous system cancers in adults](#) in the NICE guideline on suspected
18 cancer.

19 1.6.6 Refer immediately adults with rapidly (within 4 weeks) progressive
20 symmetrical limb weakness for neurological assessment and assessment
21 of bulbar and respiratory function.

22 1.6.7 Refer adults with slowly (within weeks to months) progressive limb
23 weakness for neurological assessment in line with the recommendations
24 on [recognition and referral](#) in the NICE guideline on motor neurone
25 disease.

26 1.6.8 For adults with symptoms of compression neuropathy of the radial nerve,
27 common peroneal nerve or ulnar nerve:

- 28
 - refer to orthotic services for a splint

- 1 • review the symptoms after 6 weeks, and refer for neurological
2 assessment if there is no evidence of improvement.
- 3 1.6.9 Advise adults with symptoms of compression neuropathy to avoid any
4 activity that might lead to further pressure on the affected nerve.
- 5 1.6.10 Be aware that recurrent limb weakness in adults can be part of a
6 functional neurological disorder and might not need referral, particularly in
7 people with a previous diagnosis of functional disorder, no neurological
8 signs and normal neuroimaging within the past 6 months.
- 9 1.6.11 Advise adults with limb or facial weakness ascribed to a functional
10 neurological disorder that their limb or facial weakness might fluctuate and
11 evolve over time, and might increase during times of stress.
- 12 1.6.12 Refer immediately adults with symptoms of lumbar radiculopathy and
13 new-onset disturbance of bladder, bowel or sexual function, or new-onset
14 perineal numbness, to have a neurological assessment for cauda equina
15 syndrome.
- 16 1.6.13 Be aware that lower limb claudication symptoms in adults with adequate
17 peripheral circulation might be caused by lumbar canal stenosis and need
18 specialist assessment and imaging.
- 19 **1.7 Memory failure**
- 20 1.7.1 For adults aged under 50 with memory problems:
- 21 • do not refer if brief testing shows memory function to be normal and
22 symptoms are consistent with concentration difficulties
- 23 • be aware that memory problems or concentration difficulties can be
24 caused by:
- 25 – recreational, and some prescription, drugs
- 26 – alcohol
- 27 – affective disorders
- 28 – stress.

- 1 1.7.2 Be aware that memory problems and concentration difficulties in adults
2 might be part of a functional illness and might not need referral,
3 particularly in people with a previous diagnosis of functional illness,
4 prominent concentration problems and normal neuroimaging.
- 5 1.7.3 Do not refer adults for neurological assessment if they have concentration
6 difficulties associated with chronic fatigue syndrome or fibromyalgia. For
7 recommendations on the management of chronic fatigue syndrome see
8 [general management strategies after diagnosis](#) in the NICE guideline on
9 chronic fatigue syndrome/myalgic encephalomyelitis (or encephalopathy).
- 10 1.7.4 Refer adults for specialist (neurological or memory clinic) assessment if
11 they have progressive memory problems or progressive cognitive
12 difficulties that affect several domains, such as language, numerical skills
13 or sequencing of movements, preferably after the problems have been
14 confirmed by a witness and assessed twice in primary care, with an
15 interval of at least a month between the 2 assessments.
- 16 1.7.5 Do not refer adults with a single episode of dense amnesia (inability to
17 recall the recent past or form new memories) if:
- 18 • the episode lasts less than 8 hours and
 - 19 • there is complete recovery and
 - 20 • there are no features suggestive of an epileptic seizure (see seizure
21 markers for [suspected epilepsy](#) in the NICE guideline on transient loss
22 of consciousness ['blackouts'] in over 16s).
- 23 Advise the person that they have probably had an episode of transient
24 global amnesia and that the recurrence rate is low.
- 25 1.7.6 Refer adults with recurrent episodes of dense amnesia to have an
26 assessment for epileptic amnesia.

1 **1.8 *Posture distortion in adults***

2 1.8.1 Suspect cervical dystonia in adults who have persistent abnormalities of
3 head or neck posture, with or without head tremor, especially if the
4 symptom improves when the person touches their chin with their hand.

5 1.8.2 Do not offer cervical imaging to evaluate suspected cervical dystonia in
6 adults.

7 1.8.3 Be aware that dystonia in adults can affect other parts of the body (for
8 example, it can cause writer’s cramp or in-turned posture of the foot).

9 1.8.4 Refer adults with suspected dystonia to have an assessment for diagnosis
10 and possible botulinum toxin treatment.

11 1.8.5 Be aware that antipsychotic and antiemetic medicines can trigger or
12 exacerbate dystonia in adults.

13 **1.9 *Sensory symptoms such as tingling or numbness in adults***

14 1.9.1 Do not refer adults with recurrent episodes of tingling or sensory
15 disturbance in the limbs that are present on waking from sleep and last
16 less than 10 minutes.

17 1.9.2 Suspect migraine with aura in adults who have sensory symptoms that
18 occur with or without headache and:

- 19 • are fully reversible and
20 • develop over at least 5 minutes and
21 • last between 5 and 60 minutes.

22 For recommendations on diagnosing and managing migraine with aura
23 see the NICE guideline on [headaches in over 12s](#).

24 1.9.3 Assess sudden-onset transient unilateral numbness in adults in line with
25 the NICE guideline on [stroke and transient ischaemic attack in over 16s](#).

26 1.9.4 Refer urgently adults with recurrent, brief (less than 2 minutes), fixed-
27 pattern disturbances of sensation to have an assessment for epilepsy.

- 1 1.9.5 For adults with persistent, distally predominant ('stocking' or 'glove and
2 stocking') altered sensation in the limbs and depressed deep tendon
3 reflexes:
- 4 • be alert to the possibility of peripheral neuropathy and consider
5 checking:
 - 6 – vitamin B12
 - 7 – thyroid function
 - 8 – anti-gliadin antibodies
 - 9 – renal function
 - 10 – blood glucose
 - 11 – ESR (erythrocyte sedimentation rate)
 - 12 – alcohol consumption, using a tool such as AUDIT (Alcohol Use
13 Disorders Identification Test), in line with the NICE guideline on
14 [alcohol-use disorders: diagnosis, assessment and management of
15 harmful drinking and alcohol dependence](#)
 - 16 • if no causes of peripheral neuropathy are found, refer for neurological
17 assessment.
- 18 1.9.6 Refer adults with persistent, distally predominant altered sensation in the
19 limbs, and brisk deep tendon reflexes, to have an assessment for possible
20 brain or spine disease.
- 21 1.9.7 Be aware that recurrent numbness and tingling in adults might be part of a
22 functional illness and this does not need referral. Features suggestive of
23 functional illness include multifocal fleeting sensations (such as twitches,
24 buzzing sensations or electric shocks), a previous diagnosis of functional
25 illness, no neurological signs and normal neuroimaging.
- 26 1.9.8 Advise adults with tingling and a suspected functional disorder that the
27 tingling might fluctuate and evolve over time and could increase at times
28 of stress.

- 1 1.9.9 Refer in line with local pathways if carpal tunnel syndrome is suspected in
2 adults with tingling, numbness of the hand in a median nerve distribution
3 and pain in the arm.
- 4 1.9.10 Refer immediately adults with rapidly progressive (within hours to days)
5 symmetrical numbness and weakness or imbalance to have a
6 neurological assessment
- 7 1.9.11 Reassure adults with unilateral or bilateral numbness, tingling or pain in
8 the distribution of the lateral cutaneous nerve of the thigh (meralgia
9 paraesthetica) that the condition is benign and might improve
10 spontaneously. Consider referral for pain management only if the
11 symptoms are severe.
- 12 1.9.12 Do not refer adults with symptoms of cervical radiculopathy that have
13 remained stable for 6 weeks or more unless:
- 14 • pain is not controlled with analgesics or
 - 15 • the symptoms are disabling or
 - 16 • one of the following factors is present:
 - 17 – age under 20
 - 18 – gait disturbance
 - 19 – clumsy or weak hands or legs
 - 20 – brisk deep tendon reflexes (triceps and lower limbs)
 - 21 – extensor plantar responses
 - 22 – new-onset disturbance of bladder or bowel function.
- 23 1.9.13 Do not refer adults with symptoms of lumbar radiculopathy that have
24 remained stable for 6 weeks or more unless pain is not controlled with
25 analgesics or symptoms are disabling.
- 26 **1.10 Sleep disorders in adults**
- 27 1.10.1 Offer advice on sleep hygiene to adults with insomnia.
- 28 1.10.2 Do not refer adults with insomnia, jerks on falling asleep or isolated brief
29 episodes of sleep paralysis.

- 1 1.10.3 For adults with excessive sleepiness:
- 2 • use the Epworth score together with history of obstructive symptoms in
- 3 sleep to assess the likelihood of sleep apnoea
- 4 • refer in accordance with local policy
- 5 • if appropriate, offer advice on weight reduction, alcohol consumption
- 6 and smoking cessation, in line with the NICE guidelines on:
- 7 – [obesity: identification, assessment and management](#)
- 8 – [alcohol-use disorders: diagnosis, assessment and management of](#)
- 9 [harmful drinking and alcohol dependence](#)
- 10 – [smoking: brief interventions and referrals](#)
- 11 – [stop smoking services](#)
- 12 – [smoking: harm reduction](#).
- 13 1.10.4 Consider referring adults with persistent symptoms suggestive of sleep
- 14 behaviour disorders (such as agitated or violent movements that are more
- 15 complex than a simple jerking motion) for neurological assessment.
- 16 1.10.5 Refer urgently adults with symptoms suggestive of new-onset epileptic
- 17 seizures in sleep for neurological assessment in line with the NICE
- 18 guideline on [epilepsies](#).
- 19 1.10.6 Refer adults with narcolepsy, with or without cataplexy, for neurological
- 20 assessment.
- 21 **1.11 Smell or taste problems**
- 22 1.11.1 Be aware that sudden-onset distortion of sense of smell or taste in adults
- 23 is rarely associated with structural neurological abnormality and usually
- 24 resolves within a few months.
- 25 1.11.2 Do not refer adults who lose their sense of smell or taste immediately after
- 26 a head injury.
- 27 1.11.3 Refer adults with transient, repetitive taste or smell hallucinations to have
- 28 a neurological assessment for epilepsy.

1 1.11.4 Consider neuroimaging for adults with unexplained loss of sense of smell
2 or taste that lasts more than 3 months.

3 1.11.5 Do not refer adults with loss of sense of smell or taste and normal
4 neuroimaging.

5 **1.12 *Speech problems in adults***

6 1.12.1 Refer urgently adults with sudden-onset speech disturbance to have an
7 assessment for a vascular event, in line with local stroke pathways and
8 following the recommendations on [prompt recognition of symptoms of](#)
9 [stroke and TIA](#) in the NICE guideline on stroke and transient ischaemic
10 attack in over 16s.

11 1.12.2 Refer adults with progressive slurred or disrupted speech to have an
12 assessment for motor neurone disease, in line with the recommendations
13 on [recognition and referral](#) in the NICE guideline on motor neurone
14 disease.

15 1.12.3 Be aware that functional neurological disorder is the most common cause
16 of minor word-finding difficulties in adults.

17 1.12.4 Be aware that persistent dysphonia (a quiet, hoarse or wobbly voice) in
18 adults may be a presenting symptom of a neurological condition such as
19 Parkinson's disease. For recommendations on the diagnosis and
20 management of Parkinson's disease, see the NICE guideline on
21 [Parkinson's disease in adults](#).

22 1.12.5 Consider referring adults with isolated and unexplained persistent
23 dysphonia to have an assessment for laryngeal dystonia (involuntary
24 contractions of the vocal cords) if hoarseness caused by malignancy has
25 been excluded.

26 **1.13 *Tics and involuntary movements in adults***

27 1.13.1 Do not refer adults with tics (involuntary movements that can be
28 temporarily suppressed at the expense of mounting inner tension) unless
29 the tics are severe and disabling.

1 1.13.2 Consider referring adults with a tic disorder for psychological therapy if the
2 disorder distresses them.

3 1.13.3 Consider referring adults who have completed psychological therapy for a
4 tic disorder to have a neurological assessment if their symptoms are
5 severe and the disorder continues to distress them, but tell the person
6 that:

- 7 • there are not many medicines available to treat a tic disorder
- 8 • the medicines that are available don't always work very well and can
9 have serious side effects.

10 1.13.4 Do not refer adults with isolated involuntary movements of the eyelid
11 unless the movements:

- 12 • cause involuntary tight eye closure of both eyes (blepharospasm) or
- 13 • have persisted for more than 3 months.

14 1.13.5 Refer adults for neurological assessment if they have involuntary
15 movements of the face, neck, limbs or trunk, or involuntary tight eye
16 closure of both eyes (blepharospasm) that cannot be temporarily
17 suppressed by mental concentration.

18 **1.14 Tremor in adults**

19 1.14.1 Refer adults with suspected parkinsonian tremor, other asymmetric
20 tremor, or tremor associated with stiffness, slowness, balance problems or
21 gait disorders for neurological assessment before treatment, in line with
22 the NICE guideline on [Parkinson's disease in adults](#).

23 1.14.2 Suspect essential tremor in an adult with symmetrical postural tremor and
24 no symptoms of parkinsonism.

25 1.14.3 In adults with suspected essential tremor:

- 26 • review regular medication
- 27 • check thyroid function

- 1 • assess alcohol consumption using a tool such as AUDIT (Alcohol Use
2 Disorders Identification Test), in line with the NICE guideline on
3 [alcohol-use disorders: diagnosis, assessment and management of](#)
4 [harmful drinking and alcohol dependence](#).

5 Refer for neurological assessment only if the symptoms are disabling and
6 first-line treatment is ineffective or not tolerated.

- 7 1.14.4 Consider referring adults with tremor of the head to a movement disorder
8 clinic.

9 **1.15 Information and support**

- 10 1.15.1 Follow the principles in the NICE guideline on [patient experience in adult](#)
11 [NHS services](#) relating to communication, information and shared
12 decision-making.

- 13 1.15.2 Advise adults with suspected neurological conditions to:

- 14 • check the government's information on [driving with medical conditions](#)
15 to find out whether they might have a condition that needs to be notified
16 to the DVLA (Driver and Vehicle Licensing Agency)
17 • consider telling their employer, school or college if their symptoms
18 might affect their ability to work or study.

19 **Recommendations for children aged under 16**

People have the right to be involved in discussions and make informed decisions about their care, as described in [your care](#).

[Making decisions using NICE guidelines](#) explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

20

21 In this guideline:

- 1 • 'Refer urgently' means the child should be seen by the specialist service within
2 2 weeks.
- 3 • 'Refer immediately' means the child should be seen by the specialist service
4 within a few hours, or even more quickly if necessary.
- 5 • 'Refer' means a routine referral.

6 **1.16 *Attention, concentration and memory problems***

- 7 1.16.1 Refer children with concentration and memory difficulties that interfere
8 with learning, school progress or behaviour to community paediatric or
9 paediatric neurodevelopmental services for assessment.
- 10 1.16.2 Be aware that some children with attention and concentration difficulties
11 do not have hyperactivity.
- 12 1.16.3 Refer children urgently if they present with discrete episodes of loss of
13 awareness (mid-activity vacant spells) or of attention and concentration
14 difficulty, in line with the NICE guideline on [epilepsies](#).
- 15 1.16.4 Be aware that medicines commonly used to treat epilepsy in children can
16 adversely affect concentration and memory.

17 **1.17 *Blackouts and other paroxysmal events***

- 18 1.17.1 Refer urgently children with new-onset blackouts (transient loss of
19 consciousness) accompanied by seizure markers for neurological
20 assessment, in line with the recommendation for people with [suspected](#)
21 [epilepsy](#) in the NICE guideline on transient loss of consciousness
22 ('blackouts') in over 16s
- 23 1.17.2 Refer urgently children with mid-activity vacant spells or behavioural
24 outbursts associated with altered consciousness or amnesia for the
25 events to have a paediatric assessment.
- 26 1.17.3 Do not refer children aged over 12 years with blackouts if there are clear
27 features of vasovagal syncope, even if associated with brief jerking of the
28 limbs, in line with [recommendation 1.1.4.3 on uncomplicated faint](#) in the

1 NICE guideline on transient loss of consciousness ('blackouts') in over
2 16s.

3 1.17.4 Refer urgently all children aged under 12 years with blackouts for
4 paediatric assessment.

5 1.17.5 For children who have blackouts, seizures or amnesia for events after a
6 head injury, follow the recommendations on [pre-hospital assessment](#),
7 [advice and referral to hospital](#) in the NICE guideline on head injury.

8 **1.18 Confusion, acute**

9 1.18.1 For children with unexplained acute confusion:

- 10 • arrange an emergency transfer to hospital and
- 11 • measure blood glucose.

12 1.18.2 Be aware that acute confusion in children can be a symptom of
13 meningitis, encephalitis or poisoning. If infection is suspected, follow the
14 recommendations on [identifying people with suspected sepsis](#) and [face-](#)
15 [to-face assessment of people with suspected sepsis](#) in the NICE guideline
16 on sepsis.

17 1.18.3 For children with acute confusion who have a non-blanching rash or other
18 signs or symptoms suggestive of meningococcal septicaemia, follow the
19 recommendations on [suspected meningococcal disease \(meningitis with](#)
20 [non-blanching rash or meningococcal septicaemia\)](#) in the NICE guideline
21 on meningitis (bacterial) and meningococcal septicaemia in under 16s.

22 For other signs and symptoms of meningococcal septicaemia see
23 [bacterial meningitis and meningococcal septicaemia in children and young](#)
24 [people – symptoms, signs and initial assessment](#).

25 **1.19 Dizziness and vertigo in children**

26 1.19.1 Be aware that isolated dizziness in children is unlikely to be a symptom of
27 a brain tumour if there are no accompanying symptoms or signs.

1 1.19.2 Be aware that dizziness in children is often a symptom of migraine and
2 may be the predominant feature.

3 1.19.3 Be aware that in older children (usually aged over 8 years), dizziness
4 related to change in posture is often caused by postural hypotension.

5 1.19.4 In children with dizziness, examine the ears for any signs of infection,
6 inflammation or eardrum perforation.

7 1.19.5 For children with recurrent episodes of dizziness:

- 8 • consider referring for cardiological assessment if there are any factors
9 that might suggest a cardiac cause, such as blackouts (transient loss of
10 consciousness), a family history of cardiomyopathy or unexplained
11 sudden death, or palpitations.
- 12 • if there are episodes of dizziness with a fixed symptom pattern, be alert
13 to the possibility of epilepsy as the cause and follow the
14 recommendations in the NICE guideline on [epilepsies](#).

15 **1.20 Headache**

16 For recommendations on headache in children aged over 12 years see the NICE
17 guideline on [headaches in over 12s](#)

18 1.20.1 Refer children aged under 12 years with headache immediately for same-
19 day assessment, according to local pathways, if they have any one of the
20 following:

- 21 • headache that wakes them at night
- 22 • headache that is present on awakening in the morning
- 23 • headache that progressively worsens
- 24 • headache triggered or aggravated by coughing, sneezing or bending
25 down
- 26 • headache with fever and features of meningism
- 27 • headache associated with vomiting
- 28 • headache associated with ataxia
- 29 • headache associated with change in conscious level

- 1 • headache occurring within 5 days of a head injury
2 • headache associated with squint or failure of upward gaze
3 ('sunsetting').
- 4 1.20.2 Refer urgently all children aged under 4 years with headache for
5 neurological assessment.
- 6 1.20.3 Perform or request fundoscopy for all children with recurrent headache
7 and refer urgently for neurological assessment if there are abnormalities.
- 8 1.20.4 For all children with recurrent headache:
- 9 • be aware that hypertension might be the cause
10 • measure the child's blood pressure and check the measurement
11 against blood pressure reference ranges adjusted for age and height.
- 12 1.20.5 Do not refer children with migraine unless it is affecting their school life,
13 social life or family activities, or they have one of the features listed in
14 recommendation 1.20.1.
- 15 1.20.6 Be aware that emotional stress is a strong trigger of migraine and chronic,
16 daily headache in children. Ask the child and their parent or carer about
17 specific learning problems, bullying at school and stress in the family.
- 18 1.20.7 Ask about analgesic use in children with recurrent headache to ensure
19 that medicine use is not excessive and to assess the likelihood of
20 medication overuse headache. See the NICE guideline on [headaches in](#)
21 [over 12s](#) for more information on medication overuse headache.
- 22 **1.21 Head shape or size abnormalities**
- 23 1.21.1 For all children aged under 4 years with suspected abnormal head shape
24 or size:
- 25 • take 3 consecutive measurements of the child's head circumference at
26 the same appointment, using a disposable paper tape measure
27 • plot the longest of the 3 measurements on a standardised growth chart,
28 corrected for gestational age

- 1 • if the child's head circumference is below the 2nd centile, refer for
2 paediatric assessment.

3 Offer follow-up measurements if needed, according to clinical judgement
4 and taking the child's age into account.

5 1.21.2 For children with a head circumference measurement that differs by 2 or
6 more centile lines from a previous measurement on a standardised growth
7 chart (for example, an increase from the 25th to the 75th centile, or a
8 decrease from the 50th to the 9th centile):

- 9 • refer to paediatric services for assessment and cranial imaging to
10 exclude progressive hydrocephalus or microcephaly
11 • refer to paediatric services urgently if the child also has any of the
12 following signs or symptoms of raised intracranial pressure:
13 – tense fontanelle
14 – sixth nerve palsy
15 – failure of upward gaze ('sunsetting')
16 – vomiting
17 – unsteadiness (ataxia)
18 – headache.

19 1.21.3 For children with a head circumference above the 98th centile that has not
20 changed by more than 2 centile lines from the previous measurement on
21 a standardised growth chart, who are developing normally and who have
22 no symptoms of raised intracranial pressure:

- 23 • note the head size of the biological parents, if possible, to check for
24 familial macrocephaly
25 • if familial macrocephaly is likely, do not refer the child in the absence of
26 any other problem.

27 1.21.4 For infants aged under 1 year whose head is flattened on one side
28 (plagiocephaly):

- 1 • be aware that positional plagiocephaly (plagiocephaly caused by
2 pressure outside the skull before or after birth) is the most common
3 cause of asymmetric head shape
- 4 • measure the distance between the outer canthus of the infant's eye and
5 the tragus of their ear on each side
- 6 • if the measurements differ, confirm positional plagiocephaly and do not
7 refer if the infant is developing normally
- 8 • if the measurements are the same, suspect unilateral premature
9 closure of lambdoid suture and refer to paediatric services.

10 1.21.5 Advise parents or carers of infants with positional plagiocephaly that it is
11 usually caused by the infant sleeping in one position and can be improved
12 by changing the infant's position when they are lying, encouraging the
13 infant to sit up when awake, and giving the infant time on their tummy.

14 1.21.6 Be aware that premature closure of cranial sutures can be part of a
15 syndrome with associated dysmorphic features and developmental delay.
16 Refer urgently all children with suspected syndromic cranial synostosis to
17 paediatric services.

18 **1.22 *Hypotonia ('floppiness')***

19 1.22.1 For infants aged under 1 year with hypotonia (floppiness):

- 20 • examine the infant for signs of cardiac failure, enlargement of the liver
21 or kidneys, or an altered level of consciousness, and refer immediately
22 to paediatric services if any of these are found
- 23 • if no explanation for the hypotonia is found and the infant is weak, refer
24 urgently to paediatric services
- 25 • if the infant is otherwise developing well, consider referring for
26 community physiotherapy
- 27 • be aware that hypotonia in infancy can be congenital and have a good
28 prognosis.

1 **1.23** ***Limb or facial weakness in children***

2 1.23.1 Refer immediately children with sudden-onset or rapidly progressive
3 (hours to days) facial or limb weakness for neurological assessment.

4 1.23.2 Refer urgently children with progressive limb weakness for neurological
5 assessment.

6 1.23.3 Refer children with limb weakness that is part of a developmental disorder
7 to paediatric services, in line with [looking for signs of cerebral palsy](#) in the
8 NICE guideline on cerebral palsy under 25s.

9 1.23.4 For boys with limb weakness, see [recommendation 1.24.3](#) on global or
10 motor developmental delay in boys.

11 **1.24** ***Motor development delay and unsteadiness***

12 1.24.1 Refer immediately children with new-onset gait abnormality to acute
13 paediatric services.

14 1.24.2 Refer children to a child development service, and consider referral for
15 physiotherapy or occupational therapy, in line with the recommendations
16 in the NICE guideline on [cerebral palsy in under 25s](#), if they:

- 17
- 18 • are not sitting unsupported by 8 months (corrected for gestational age)
19 or
 - 20 • are not walking independently by 18 months (corrected for gestational
21 age) or
 - 22 • show early asymmetry of hand function (hand preference) before
23 1 year (corrected for gestational age).

24 1.24.3 For boys with global or motor developmental delay or regression:

- 25 • refer to a paediatric neurodevelopmental service
- 26 • if the possible cause of the developmental delay is being investigated
27 before the boy has had a specialist review, consider measuring
creatine kinase level to exclude Duchenne muscular dystrophy.

1 **1.25 *Posture distortion in children***

2 1.25.1 In children with abnormal neck posture, check whether painful cervical
3 lymphadenopathy is the cause.

4 1.25.2 Refer immediately children with abnormal neck posture and a recent head
5 or neck trauma to an emergency department for assessment, and follow
6 [recommendations 1.2.9 and 1.2.10 on cervical immobilisation](#) in the NICE
7 guideline on head injury and [recommendation 1.1.4 on spinal](#)
8 [immobilisation](#) in the NICE guideline on spinal injury.

9 1.25.3 Refer children who develop abnormal limb posture that has no apparent
10 musculoskeletal cause for neurological assessment.

11 1.25.4 Be aware that abnormal head tilt in children can be a symptom of
12 posterior fossa tumour.

13 **1.26 *Sensory symptoms such as tingling or numbness in***
14 ***children***

15 1.26.1 Do not refer children for neurological assessment of temporary tingling or
16 numbness if there is a clear history of the symptom being triggered by
17 activities known to cause nerve compression, such as carrying a heavy
18 backpack or sitting with crossed legs.

19 1.26.2 Refer children with isolated tingling, altered sensation or paraesthesia for
20 neurological assessment if the symptoms last more than a few minutes,
21 are episodic and are not associated with compression of a nerve.

22 1.26.3 Be aware that tingling in children may be the first symptom of an acute
23 polyneuropathy (Guillain-Barré syndrome). If there are features
24 suggesting motor impairment, refer the child urgently for neurological
25 assessment.

26 1.26.4 Refer children urgently for neurological assessment if they have tingling
27 accompanied by other peripheral nervous system symptoms such as
28 weakness, bladder dysfunction or bowel dysfunction.

1 1.26.5 Be aware that in children hyperventilation is a common cause of transient
2 tingling in the limbs.

3 **1.27 Sleep disorders in children**

4 1.27.1 Reassure parents or carers of children with night terrors, repetitive
5 movements, sleep talking or sleep walking that these are common in
6 healthy children and rarely indicate a neurological condition.

7 1.27.2 Offer advice on sleep hygiene to parents or carers of children with
8 insomnia, and consider referring to a health visitor if the child is aged
9 under 5 years.

10 1.27.3 Be aware that sleep disorders in children may be a symptom of gastro-
11 oesophageal reflux or constipation. See the recommendations on
12 [diagnosing and investigating gastro-oesophageal reflux disease](#) in the
13 NICE guideline on gastro-oesophageal reflux disease in children and
14 young people, and the NICE guideline on [constipation in children and](#)
15 [young people](#).

16 1.27.4 Consider referring children with sleep disorders associated with
17 neurodevelopmental disorders or learning disabilities (intellectual
18 disabilities) to community paediatric services.

19 1.27.5 Refer children urgently for neurological assessment if they have
20 symptoms suggestive of new-onset epileptic seizures in sleep.

21 1.27.6 Refer children with narcolepsy, with or without cataplexy, for neurological
22 assessment.

23 1.27.7 Refer children with symptoms of sleep apnoea to ear, nose and throat or
24 paediatric respiratory services, as appropriate, and offer advice on weight
25 loss if the child is obese.

26 1.27.8 Refer children with neuromuscular disorders urgently for a respiratory
27 assessment if they have early-morning headaches or new-onset sleep
28 disturbance.

1 **1.28** ***Speech problems in children***

2 1.28.1 Consider referring children aged over 2 years with abnormal speech
3 development to speech and language services.

4 1.28.2 Be aware that delay or regression in speech and language in children can
5 be a symptom of autism. Follow the recommendations on [recognising](#)
6 [children and young people with possible autism](#) and [referring children and](#)
7 [young people to the autism team](#) in the NICE guideline on recognition,
8 referral and diagnosis of autism spectrum disorder in under 19s:

9 1.28.3 Check whether slurred or disrupted speech in a child is a side effect of
10 prescribed medicines, recreational drugs or alcohol.

11 1.28.4 Refer urgently children with new-onset slurred or disrupted speech that is
12 not attributable to prescribed medicines, recreational drugs or alcohol for
13 neurological assessment.

14 **1.29** ***Squint***

15 1.29.1 Refer children immediately to acute paediatric services if new-onset squint
16 occurs together with ataxia, vomiting or headache, in line with the
17 recommendation on [brain and central nervous system cancers in children](#)
18 [and young people](#) in the NICE guideline on suspected cancer.

19 1.29.2 Refer children immediately to ophthalmology services if new-onset squint
20 occurs together with loss of red reflex in one or both eyes.

21 1.29.3 Refer children with non-paralytic squint to ophthalmology services.

22 **1.30** ***Tics and involuntary movements in children***

23 1.30.1 Do not refer children with simple motor tics that are not troublesome to the
24 child.

25 1.30.2 Advise parents or carers of children with a tic disorder to discuss the
26 disorder with the child's school, emphasising that the tic is an involuntary
27 movement and the child should not be reprimanded for it.

- 1 1.30.3 Do not offer medicine for motor tics in children without specialist referral
2 and advice (see recommendation 1.30.6).
- 3 1.30.4 Be aware that tics and stereotypies (repetitive or ritualistic movements
4 such as body rocking) are more common in children with autism or a
5 learning (intellectual) disability.
- 6 1.30.5 Refer children immediately for neurological assessment if they have
7 sudden-onset chorea, ataxia or dystonia.
- 8 1.30.6 For children with a tic disorder that has a significant impact on their quality
9 of life, consider referral according to local pathways, as follows:
- 10 • referral to mental health services if the tic disorder is associated with
11 symptoms of anxiety or obsessive compulsive behaviour
- 12 • referral to the neurodevelopmental team if the tic disorder is associated
13 with symptoms suggestive of autism or ADHD
- 14 • referral for neurological assessment if the tic disorder is severe.
- 15 **1.31 Tremor in children**
- 16 1.31.1 Refer children presenting with tremor for urgent neurological assessment
17 if:
- 18 • they have additional neurological signs and symptoms such as
19 unsteadiness or
- 20 • the onset of the tremor was sudden.
- 21 1.31.2 Be aware that isolated postural tremor in children may be a side effect of
22 sodium valproate or a beta-adrenergic agonist.
- 23 1.31.3 Consider thyroid function tests for children with postural tremor and other
24 symptoms or signs suggestive of thyroid overactivity.
- 25 1.31.4 Refer children with postural tremor for occupational therapy only if the
26 tremor is affecting activities of daily living such as writing, eating or
27 dressing.

1 Putting this guideline into practice

2 [This section will be completed after consultation]

3 NICE has produced [tools and resources](#) to help you put this guideline into practice.

4 [Optional paragraph if issues raised] Some issues were highlighted that might need
5 specific thought when implementing the recommendations. These were raised during
6 the development of this guideline. They are:

- 7 • [add any issues specific to guideline here]
- 8 • [Use 'Bullet left 1 last' style for the final item in this list.]

9 Putting recommendations into practice can take time. How long may vary from
10 guideline to guideline, and depends on how much change in practice or services is
11 needed. Implementing change is most effective when aligned with local priorities.

12 Changes recommended for clinical practice that can be done quickly – like changes
13 in prescribing practice – should be shared quickly. This is because healthcare
14 professionals should use guidelines to guide their work – as is required by
15 professional regulating bodies such as the General Medical and Nursing and
16 Midwifery Councils.

17 Changes should be implemented as soon as possible, unless there is a good reason
18 for not doing so (for example, if it would be better value for money if a package of
19 recommendations were all implemented at once).

20 Different organisations may need different approaches to implementation, depending
21 on their size and function. Sometimes individual practitioners may be able to respond
22 to recommendations to improve their practice more quickly than large organisations.

23 Here are some pointers to help organisations put NICE guidelines into practice:

24 1. **Raise awareness** through routine communication channels, such as email or
25 newsletters, regular meetings, internal staff briefings and other communications with
26 all relevant partner organisations. Identify things staff can include in their own
27 practice straight away.

- 1 **2. Identify a lead** with an interest in the topic to champion the guideline and motivate
2 others to support its use and make service changes, and to find out any significant
3 issues locally.
 - 4 **3. Carry out a baseline assessment** against the recommendations to find out
5 whether there are gaps in current service provision.
 - 6 **4. Think about what data you need to measure improvement** and plan how you
7 will collect it. You may want to work with other health and social care organisations
8 and specialist groups to compare current practice with the recommendations. This
9 may also help identify local issues that will slow or prevent implementation.
 - 10 **5. Develop an action plan**, with the steps needed to put the guideline into practice,
11 and make sure it is ready as soon as possible. Big, complex changes may take
12 longer to implement, but some may be quick and easy to do. An action plan will help
13 in both cases.
 - 14 **6. For very big changes** include milestones and a business case, which will set out
15 additional costs, savings and possible areas for disinvestment. A small project group
16 could develop the action plan. The group might include the guideline champion, a
17 senior organisational sponsor, staff involved in the associated services, finance and
18 information professionals.
 - 19 **7. Implement the action plan** with oversight from the lead and the project group.
20 Big projects may also need project management support.
 - 21 **8. Review and monitor** how well the guideline is being implemented through the
22 project group. Share progress with those involved in making improvements, as well
23 as relevant boards and local partners.
- 24 NICE provides a comprehensive programme of support and resources to maximise
25 uptake and use of evidence and guidance. See our [into practice](#) pages for more
26 information.
- 27 Also see Leng G, Moore V, Abraham S, editors (2014) Achieving high quality care –
28 practical experience from NICE. Chichester: Wiley.

1 **Context**

2 Around 10% of visits to GPs and hospital emergency departments are made by
3 people with symptoms or signs associated with neurological conditions. Many of
4 these people will need referral to a specialist for diagnosis and treatment, but others
5 can have their condition managed in primary care.

6 Currently there is a lack of support to help non-specialists identify when a referral for
7 specialist investigation of neurological symptoms or signs should be made. This has
8 led to delays in referral for people with treatable or potentially serious neurological
9 conditions, and unnecessary referrals for others. Although many specialist
10 professional and charitable bodies have produced guidance on specific neurological
11 conditions, there is a need for overarching guidance that covers a wide range of
12 neurological symptoms and signs.

13 This guideline provides advice on initial assessment of common neurological
14 symptoms and signs in adults and children presenting in primary care or emergency
15 departments. It offers information on recognising possible neurological conditions
16 and making referrals for specialist care.

17 ***More information***

To find out what NICE has said on topics related to this guideline, see our web
page on [neurological conditions](#).

18

19 **ISBN:**