

# **Multiple sclerosis**

## **NICE guideline**

**Draft for consultation, April 2014**

If you wish to comment on this version of the guideline, please be aware that all the supporting information and evidence is contained in the full version.

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## 1 **Introduction**

2 Multiple sclerosis (MS) is an acquired chronic immune-mediated inflammatory  
3 condition of the central nervous system, affecting both the brain and spinal cord. It  
4 affects approximately 100,000 people in the UK. It is the commonest cause of  
5 serious physical disability in adults of working age.

6 People with MS typically develop symptoms in their late 20s, experiencing visual and  
7 sensory disturbances, limb weakness, gait problems, and bladder and bowel  
8 symptoms. They may initially have partial recovery, but over time develop  
9 progressive disability. The cause of MS is unknown. It is believed that an abnormal  
10 immune response to environmental triggers in people who are genetically  
11 predisposed, results in immune-mediated acute, and then chronic inflammation. This  
12 is followed by degeneration of the CNS.

13 MS is a potentially highly disabling disorder with considerable personal, social and  
14 economic consequences. People with MS may live for many years after diagnosis  
15 with significant impact on their ability to work, as well as an adverse and often highly  
16 debilitating effect on their quality of life and that of their families.

17 This guideline replaces NICE clinical guideline 8 (2003) and covers diagnosis,  
18 information and support, treatment of relapse and management of MS-related  
19 symptoms. The guideline does not address the use of disease-modifying treatments;  
20 there are NICE technology appraisals about these treatments and these are listed  
21 along with NICE guidelines about the management of bladder and bowel symptoms,  
22 neuropathic pain and depression in 'Related NICE guidance'.

23 The guideline is aimed primarily at services provided in primary and secondary care.  
24 Many people with MS may also attend specialised tertiary services, often established  
25 particularly to provide and monitor disease-modifying therapies.

## 26 ***Drug recommendations***

27 The guideline will assume that prescribers will use a drug's summary of product  
28 characteristics to inform decisions made with individual patients. This guideline  
29 recommends some drugs for indications for which they do not have a UK marketing  
30 authorisation at the date of publication, if there is good evidence to support that use.

1 The prescriber should follow relevant professional guidance, taking full responsibility  
2 for the decision. The patient (or those with authority to give consent on their behalf)  
3 should provide informed consent, which should be documented. See the General  
4 Medical Council's [Good practice in prescribing medicines – guidance for doctors](#) for  
5 further information. Where recommendations have been made for the use of drugs  
6 outside their licensed indications ('off-label use'), these drugs are marked with a  
7 footnote in the recommendations.

## 8 **Patient-centred care**

9 This guideline offers best practice advice on the care of adults with multiple  
10 sclerosis.

11 Patients and healthcare professionals have rights and responsibilities as set out in  
12 the [NHS Constitution for England](#) – all NICE guidance is written to reflect these.  
13 Treatment and care should take into account individual needs and preferences.  
14 Patients should have the opportunity to make informed decisions about their care  
15 and treatment, in partnership with their healthcare professionals. Healthcare  
16 professionals should follow the [Department of Health's advice on consent](#). If  
17 someone does not have the capacity to make decisions, healthcare professionals  
18 should follow the [Department of Health's advice on consent](#), the [code of practice that  
19 accompanies the Mental Capacity Act](#) and the supplementary [code of practice on  
20 deprivation of liberty safeguards](#). In Wales, healthcare professionals should follow  
21 [advice on consent from the Welsh Government](#).

22 NICE has produced guidance on the components of good patient experience in adult  
23 NHS services. All healthcare professionals should follow the recommendations in  
24 [Patient experience in adult NHS services](#).

## 25 **Strength of recommendations**

26 Some recommendations can be made with more certainty than others. The  
27 Guideline Development Group makes a recommendation based on the trade-off  
28 between the benefits and harms of an intervention, taking into account the quality of  
29 the underpinning evidence. For some interventions, the Guideline Development  
30 Group is confident that, given the information it has looked at, most patients would

1 choose the intervention. The wording used in the recommendations in this guideline  
2 denotes the certainty with which the recommendation is made (the strength of the  
3 recommendation).

4 For all recommendations, NICE expects that there is discussion with the patient  
5 about the risks and benefits of the interventions, and their values and preferences.  
6 This discussion aims to help them to reach a fully informed decision (see also  
7 'Patient-centred care').

### 8 ***Interventions that must (or must not) be used***

9 We usually use 'must' or 'must not' only if there is a legal duty to apply the  
10 recommendation. Occasionally we use 'must' (or 'must not') if the consequences of  
11 not following the recommendation could be extremely serious or potentially life  
12 threatening.

### 13 ***Interventions that should (or should not) be used – a 'strong'*** 14 ***recommendation***

15 We use 'offer' (and similar words such as 'refer' or 'advise') when we are confident  
16 that, for the vast majority of patients, an intervention will do more good than harm,  
17 and be cost effective. We use similar forms of words (for example, 'Do not offer...')  
18 when we are confident that an intervention will not be of benefit for most patients.

### 19 ***Interventions that could be used***

20 We use 'consider' when we are confident that an intervention will do more good than  
21 harm for most patients, and be cost effective, but other options may be similarly cost  
22 effective. The choice of intervention, and whether or not to have the intervention at  
23 all, is more likely to depend on the patient's values and preferences than for a strong  
24 recommendation, and so the healthcare professional should spend more time  
25 considering and discussing the options with the patient.

26

## 1 **Key priorities for implementation**

2 The following recommendations have been identified as priorities for implementation.

### 3 **Diagnosing MS**

- 4 • Refer people suspected of having multiple sclerosis (MS) to a consultant  
5 neurologist. **[1.1.5]**
- 6 • A consultant neurologist should make the diagnosis of MS on the basis of  
7 established up-to-date criteria, such as the revised 2010 McDonald criteria<sup>1</sup>, after:
  - 8 – assessing episodes are consistent with an inflammatory process
  - 9 – excluding alternative diagnoses
  - 10 – establishing that lesions have developed at different times and are in different  
11 anatomical locations for a diagnosis of relapsing–remitting MS
  - 12 – establishing progressive neurological deterioration over 1 year or more for a  
13 diagnosis of primary progressive MS. **[1.1.6]**
- 14 • Do not diagnose MS on the basis of MRI findings alone. **[1.1.7]**

### 15 **Information and support**

- 16 • The consultant neurologist should ensure that people with MS and their family  
17 members or carers are offered verbal and written information at the time of  
18 diagnosis. This might include, but should not be limited to, information about:
  - 19 – what MS is
  - 20 – treatments, including disease-modifying treatments
  - 21 – symptom management
  - 22 – how support groups, local services, social services and national charities are  
23 organised and how to get in touch with them
  - 24 – legal requirements such as notifying the Driver and Vehicle Licensing Agency  
25 (DVLA) and legal rights including social care, employment rights and benefits.  
26 **[1.2.3]**
- 27 • Offer the person with MS a face-to-face follow-up appointment with a healthcare  
28 professional with an expertise in MS to take place within 6 weeks of diagnosis.  
29 **[1.2.5]**

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<sup>1</sup> Polman CH, Reingold SC, Banwell B et al. (2011) Diagnostic criteria for multiple sclerosis: 2010 revisions to the McDonald criteria. *Annals of Neurology* 69: 292–302.

1 **Coordination of care**

- 2 • Care for people with MS using a coordinated multidisciplinary approach.  
3 Depending on the needs of the person, involve the following professionals with  
4 expertise in managing MS:  
5 – consultant neurologists and MS nurses,  
6 – physiotherapists and occupational therapists  
7 – speech and language therapists, psychologists, dietitians, social care providers  
8 and continence support specialists  
9 – GP. **[1.3.1]**

10 **Non-pharmacological treatment for MS symptoms**

- 11 • Consider supervised exercise programmes involving moderate progressive  
12 resistance training and aerobic exercise to treat:  
13 – MS-related fatigue  
14 – mobility problems. **[1.7.10]**

15 **Treating acute relapse of MS with steroids**

- 16 • Offer treatment for relapse of MS with oral methylprednisolone 0.5 g daily for  
17 5 days. **[1.8.6]**  
18 • Develop local guidance and pathways for treating relapses of MS. Ensure follow-  
19 up is included in the pathway and guidance. **[1.8.10]**

20

## 1      1            **Recommendations**

2      The following guidance is based on the best available evidence. The [full guideline](#)  
3      **[hyperlink to be added for final publication]** gives details of the methods and the  
4      evidence used to develop the guidance.

### 5      **1.1            *Diagnosing MS***

6      1.1.1          Be aware that clinical presentations in multiple sclerosis (MS) include:

- 7                    • loss or reduction of vision in 1 eye with painful eye movements
- 8                    • double vision
- 9                    • ascending sensory disturbance and/or weakness
- 10                   • problems with balance, unsteadiness or clumsiness
- 11                   • altered sensation travelling down the back and sometimes into the
- 12                   limbs when bending the neck forwards (Lhermitte's symptom).

13      1.1.2          Be aware that people with MS usually present with neurological symptoms  
14      or signs as described in recommendation 1.1.1, and:

- 15                   • are aged under 50 **and**
- 16                   • may have a history of previous neurological symptoms **and**
- 17                   • have symptoms that have evolved over more than 24 hours **and**
- 18                   • have symptoms that may persist over several days or weeks and then  
19                   improve.

20      1.1.3          Do not routinely suspect MS if a person's main symptoms are fatigue,  
21      depression or dizziness unless they have a history or evidence of focal  
22      neurological symptoms or signs.

23      1.1.4          Before referring a person suspected of having MS to a neurologist,  
24      perform blood tests including:

- 25                   • full blood count
- 26                   • inflammatory markers for example erythrocyte sedimentation rate, C-  
27                   reactive protein
- 28                   • liver function tests



- 1           • renal function tests  
2           • electrolytes  
3           • calcium  
4           • glucose  
5           • thyroid function tests  
6           • vitamin B<sub>12</sub>  
7           • HIV serology.
- 8   1.1.5   Refer people suspected of having MS to a consultant neurologist.
- 9   1.1.6   A consultant neurologist should make the diagnosis of MS on the basis of  
10           established up-to-date criteria, such as the revised 2010 McDonald  
11           criteria<sup>2</sup>, after:
- 12           • assessing episodes are consistent with an inflammatory process  
13           • excluding alternative diagnoses  
14           • establishing that lesions have developed at different times and are in  
15           different anatomical locations for a diagnosis of relapsing–remitting MS  
16           • establishing progressive neurological deterioration over 1 year or more  
17           for a diagnosis of primary progressive MS.
- 18   1.1.7   Do not diagnose MS on the basis of MRI findings alone.
- 19   1.1.8   If a person is suspected<sup>3,4</sup> of having MS but does not fulfil the diagnostic  
20           criteria, plan a review.
- 21   1.1.9   Discuss the timing of the review with the person suspected of having MS  
22           and ensure they know what to do if they develop further neurological  
23           symptoms such as those in recommendation 1.1.1.
- 24   1.1.10   Offer people suspected of having MS information about support groups  
25           and national charities.

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<sup>2</sup> Polman CH, Reingold SC, Banwell B et al. (2011) Diagnostic criteria for multiple sclerosis: 2010 revisions to the McDonald criteria. *Annals of Neurology* 69: 292–302.

<sup>3</sup> Polman CH, Reingold SC, Banwell B et al. (2011) Diagnostic criteria for multiple sclerosis: 2010 revisions to the McDonald criteria. *Annals of Neurology* 69: 292–302.

<sup>4</sup> The McDonald criteria refers to ‘suspected MS’ as ‘possible MS’.

1 **Optic neuritis and neuromyelitis optica**

2 1.1.11 If a person has an episode of isolated optic neuritis, confirmed by an  
3 ophthalmologist, refer them to a consultant neurologist for further  
4 assessment.

5 1.1.12 Diagnosis of neuromyelitis optica should be made by an appropriate  
6 specialist based on established up-to-date criteria.

7 **1.2 *Providing information and support***

8 **Information and support**

9 1.2.1 NICE has produced guidance on the components of good patient  
10 experience in adult NHS services. This includes recommendations on  
11 communication, information and coordination of care. Follow the  
12 recommendations in [Patient experience in adult NHS services](#) (NICE  
13 clinical guideline 138).

14 1.2.2 Ask the person with MS to specify what information they want and how it  
15 is delivered. Ask the person with MS if they are happy for that information  
16 to be shared with a family member or carer.

17 **Information at the time of diagnosis**

18 1.2.3 The consultant neurologist should ensure that people with MS and their  
19 family members or carers are offered verbal and written information at the  
20 time of diagnosis. This might include, but should not be limited to,  
21 information about:

- 22 • what MS is
- 23 • treatments, including disease-modifying treatments
- 24 • symptom management
- 25 • how support groups, local services, social services and national  
26 charities are organised and how to get in touch with them
- 27 • legal requirements such as notifying the Driver and Vehicle Licensing  
28 Agency (DVLA) and legal rights including social care, employment  
29 rights and benefits.

1 1.2.4 Discuss with the person with MS and their family members or carers  
2 whether they may have social care needs and if so refer to social services  
3 for assessment.

4 1.2.5 Offer the person with MS a face-to-face follow-up appointment with a  
5 healthcare professional with expertise in MS to take place within 6 weeks  
6 of diagnosis.

### 7 **Ongoing information and support**

8 1.2.6 Review information and support needs regularly, even if people with MS  
9 or their family members or carers initially appear unwilling to accept it.

10 1.2.7 Advise people with MS and their family members or carers about what to  
11 do if their symptoms change significantly and the possible causes of these  
12 changes including:

- 13 • another illness such as an infection
- 14 • further relapse
- 15 • change of disease status (for example progression)
- 16 • new MS symptoms.

17 1.2.8 Talk to people with MS and their family members or carers about the  
18 possibility that the condition might lead to cognitive problems.

19 1.2.9 When appropriate explain to people with MS about power of attorney and  
20 advanced care planning.

### 21 **1.3 *Coordination of care***

22 1.3.1 Care for people with MS using a coordinated multidisciplinary approach.  
23 Depending on the needs of the person, involve the following professionals  
24 with expertise in managing MS:

- 25 • consultant neurologists and MS nurses
- 26 • physiotherapists and occupational therapists
- 27 • speech and language therapists, psychologists, dietitians, social care  
28 providers and continence support specialists

1           • GP.

2   1.3.2    Offer the person with MS an appropriate single point of contact.

3   **1.4       Regular review**

4   1.4.1    Discuss how often to have a formal review taking into account the needs  
5           of the person with MS and of their family members or carers, and the  
6           course the disease is taking. For most people this will be at least once a  
7           year.

8   1.4.2    At formal review, ask the person about any changes they have  
9           experienced since their last formal review, in particular assess:

10           • MS symptoms:

11           – mobility and balance including falls

12           – use of arms and hands

13           – muscle spasms and stiffness

14           – tremor

15           – bladder, bowel and sexual function

16           – sensory symptoms and pain

17           – speech and swallowing

18           – vision

19           – cognitive symptoms

20           – fatigue

21           – depression and anxiety

22           – sleep.

23           • General health:

24           – weight

25           – smoking, alcohol and recreational drugs

26           – exercise

27           – access to routine health screening and contraception.

28           • Social activity and participation:

29           – family and social circumstances

30           – driving

- 1           – employment
- 2           – access to daily activities and leisure.
- 3           • Care and carers:
- 4           – personal care needs
- 5           – social care needs
- 6           – access to adaptations and equipment at home
- 7           – informal and formal carers care plan
- 8           – carer’s needs.

9   1.4.3    Ensure people with MS, especially those with reduced mobility, are  
10           regularly assessed and reviewed for:

- 11           • bone health
- 12           • risk of contractures<sup>5</sup>
- 13           • areas at risk of pressure ulcers.

14   1.4.4    Refer people with MS to palliative care services for symptom control and  
15           for end of life care when appropriate.

## 16   **1.5        Modifiable risk factors for relapse of MS**

### 17   **Exercise**

18   1.5.1    Encourage people with MS to exercise and advise them that exercise  
19           does not have any harmful effects on their MS. Advise people that regular  
20           exercise may have beneficial effects on their MS.

### 21   **Vaccinations**

22   1.5.2    Be aware that live vaccinations may be contraindicated in people with MS  
23           who are being treated with disease-modifying therapies.

24   1.5.3    Discuss with the person with MS the possible risk of relapse after flu  
25           vaccination for people with relapsing–remitting MS.

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<sup>5</sup> A contracture is a shortening in the soft tissues (that is, tendons, muscles or ligaments) around a joint that limits the passive (and active) range of movement at that joint.

1 1.5.4 Offer flu vaccinations to people with MS in accordance with national  
2 guidelines<sup>6</sup>.

### 3 **Pregnancy**

4 1.5.5 Explain to women of childbearing age with MS that:

- 5 • relapse rates may reduce during pregnancy and may increase 3–6
- 6 months after childbirth
- 7 • pregnancy does not increase the risk of progression of disease.

8 1.5.6 If a person with MS is thinking about pregnancy, give them the opportunity  
9 to discuss with an appropriate healthcare professional issues such as:

- 10 • fertility
- 11 • in vitro fertilisation (IVF)
- 12 • the risk of the child developing MS
- 13 • use of vitamin D before conception and during pregnancy
- 14 • medication use in pregnancy
- 15 • pain relief during delivery (including epidurals)
- 16 • care of the child
- 17 • breastfeeding.

### 18 **Smoking**

19 1.5.7 Advise people with MS not to smoke because it may increase the  
20 progression of disability.

## 21 **1.6 *Pharmacological treatment for MS symptoms***

### 22 **Spasticity**

23 1.6.1 Involve people with MS in treatment decisions and encourage them to  
24 manage their own spasticity symptoms by explaining how doses of drugs  
25 can be adjusted within agreed margins.

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<sup>6</sup> 'Chronic neurological disease: conditions in which respiratory function may be compromised, due to neurological disease (e.g. polio syndrome sufferers). Clinicians should consider on an individual basis the clinical needs of patients including individuals with cerebral palsy, multiple sclerosis and related or other similar conditions; or hereditary and degenerative disease of the nervous system of muscles; or severe disability.' (Department of Health 2013)

- 1 1.6.2 Ensure that the person with MS has tried the drug at an optimal dose, or  
2 the maximum dose they can tolerate.
- 3 1.6.3 Stop a drug if there is no benefit at the maximum tolerated dose.
- 4 1.6.4 Once the optimal dose has been reached, review drug treatment for  
5 spasticity at least annually.
- 6 1.6.5 Offer baclofen or gabapentin<sup>7</sup> as a first-line drug for treating spasticity in  
7 MS depending on contraindications and the person's comorbidities and  
8 preferences.
- 9 1.6.6 If the person with MS cannot tolerate one of these drugs consider  
10 switching to the other.
- 11 1.6.7 Consider a combination of baclofen and gabapentin<sup>8</sup> for people with MS if  
12 • individual drugs do not provide adequate relief **or**  
13 • side effects from individual drugs prevent the dose being increased.
- 14 1.6.8 Consider tizanidine or dantrolene as a second-line option to treat  
15 spasticity in people in MS.
- 16 1.6.9 Consider benzodiazepines as a third-line option to treat spasticity in MS  
17 and be aware of their potential benefit in treating nocturnal spasms.
- 18 1.6.10 Do not offer nabiximols to treat spasticity in people with MS.

## 19 **Mobility**

- 20 1.6.11 Do not use fampridine to treat lack of mobility in people with MS.

## 21 **Fatigue**

- 22 1.6.12 Offer amantadine<sup>9</sup> to people with MS and fatigue.

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<sup>7</sup> At the time of consultation (April 2014), gabapentin did not have a UK marketing authorisation for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Good practice in prescribing medicines – guidance for doctors](#) for further information.

<sup>8</sup> At the time of consultation (April 2014), gabapentin did not have a UK marketing authorisation for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Good practice in prescribing medicines – guidance for doctors](#) for further information.

1 1.6.13 Do not use vitamin B<sub>12</sub> injections to treat fatigue in people with MS.

2 **Oscillopsia**<sup>10</sup>

3 1.6.14 Consider gabapentin<sup>11</sup> as the first-line treatment for oscillopsia in people  
4 with MS.

5 1.6.15 Consider memantine<sup>12</sup> as the second-line treatment for oscillopsia in  
6 people with MS.

7 1.6.16 Refer the person with MS for specialist advice if there is no improvement  
8 after treatment or side effects prevent continued use.

9 **Emotional lability**<sup>13</sup>

10 1.6.17 Consider amitriptyline<sup>14</sup> to treat emotional lability in people with MS.

11 **Pain**

12 1.6.18 Treat neuropathic pain in people with MS according to the NICE clinical  
13 guideline on [neuropathic pain – pharmacological management](#) and refer  
14 to pain services if appropriate.

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<sup>9</sup> At the time of consultation (April 2014), amantadine did not have a UK marketing authorisation for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Good practice in prescribing medicines – guidance for doctors](#) for further information.

<sup>10</sup> The subjective sensation of horizontal and/or vertical movement of the visual field that is unexplained by movement of the observer or environment.

<sup>11</sup> At the time of consultation (April 2014), gabapentin did not have a UK marketing authorisation for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Good practice in prescribing medicines – guidance for doctors](#) for further information.

<sup>12</sup> At the time of consultation (April 2014), memantine did not have a UK marketing authorisation for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Good practice in prescribing medicines – guidance for doctors](#) for further information.

<sup>13</sup> Involuntary laughing and crying related to a brain stem lesion.

<sup>14</sup> At the time of consultation (April 2014), amitriptyline did not have a UK marketing authorisation for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Good practice in prescribing medicines – guidance for doctors](#) for further information.



1 **1.7** ***Non-pharmacological treatment for MS symptoms***

2 **Cognition including memory**

3 1.7.1 Be aware that the symptoms of MS can include cognitive problems,  
4 including memory problems that the person may not immediately  
5 recognise or associate with their MS.

6 1.7.2 Assess and offer treatment to people with MS and evidence of memory  
7 and cognitive problems for anxiety, depression, difficulty in sleeping and  
8 fatigue.

9 1.7.3 Consider referring people with MS and persisting memory or cognitive  
10 problems to a neuropsychologist or memory service.

11 1.7.4 Consider involving an occupational therapist in managing cognitive  
12 problems in people with MS.

13 **Fatigue**

14 1.7.5 Assess and offer treatment to people with MS who have fatigue for  
15 anxiety, depression, difficulty in sleeping, and any potential medical  
16 problems such as anaemia or thyroid disease.

17 1.7.6 Be aware that MS-related fatigue may be precipitated by heat,  
18 overexertion and stress or may be related to the time of day.

19 1.7.7 Consider mindfulness, cognitive behavioural therapy or fatigue  
20 management for treating MS-related fatigue.

21 1.7.8 Advise people that hatha yoga may be helpful in treating MS-related  
22 fatigue.

23 **Mobility**

24 1.7.9 Establish individual goals with people with MS to treat mobility problems.

25 **Exercise programmes for fatigue and mobility**

26 1.7.10 Consider supervised exercise programmes involving moderate  
27 progressive resistance training and aerobic exercise to treat:

- 1           • MS-related fatigue  
2           • mobility problems.
- 3 1.7.11    Consider a comprehensive programme of aerobic and resistance activity  
4           combined with cognitive retraining for fatigue in people with MS with  
5           moderately impaired mobility (an EDSS<sup>15</sup> score of less than 4).
- 6 1.7.12    Consider vestibular rehabilitation for people with MS who have fatigue or  
7           mobility problems associated with limited standing balance.
- 8 1.7.13    If a choice of treatments is available for mobility or fatigue, offer treatment  
9           according to the person with MS's preference and their ability to continue  
10          the activity when the supervised treatment programme ends.
- 11 1.7.14    Encourage people with MS to keep exercising after the programme ends  
12          for longer term benefits.
- 13 1.7.15    Help the person with MS continue to exercise, for example by referring  
14          them to exercise referral schemes.

## 15 **1.8       *Treating acute relapse of MS with steroids***

### 16 **Recognise a relapse**

- 17 1.8.1     Diagnose a relapse of MS if the person:
- 18           • develops new symptoms **or**  
19           • has worsening of existing symptoms lasting more than 24 hours in the  
20           absence of infection or any other cause after a stable period of at least  
21           1 month.
- 22 1.8.2     Before diagnosing a relapse of MS:
- 23           • rule out infection – particularly urinary tract and respiratory infections  
24           **and**  
25           • discriminate between the relapse and fluctuations in disease or  
26           progression.

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<sup>15</sup> Expanded Disability Status Scale.

1 1.8.3 Assess and offer treatment for relapse of MS as early as possible and  
2 within 14 days of onset of symptoms.

3 1.8.4 Do not routinely diagnose a relapse of MS if symptoms are present for  
4 more than 3 months.

5 1.8.5 Non-specialists should discuss a person's diagnosis of relapse and  
6 whether to offer steroids with a healthcare professional with an expertise  
7 in MS.

### 8 **Treating a relapse**

9 1.8.6 Offer treatment for relapse of MS with oral methylprednisolone 0.5 g daily  
10 for 5 days.

11 1.8.7 Consider intravenous methylprednisolone 1 g daily for 3–5 days as an  
12 alternative for people with MS:

- 13 • with severe relapses **or**
- 14 • in whom oral steroids have failed or not been tolerated **or**
- 15 • who need admitting for monitoring of medical or psychological  
16 conditions such as diabetes or depression.

17 1.8.8 Do not prescribe steroids at lower doses than methylprednisolone 0.5 g  
18 daily for 5 days to treat an acute relapse of MS.

19 1.8.9 Do not give people with MS a supply of steroids to self-administer at home  
20 for future relapses.

21 1.8.10 Develop local guidance and pathways for treating relapses of MS. Ensure  
22 follow-up is included in the pathway and guidance.

### 23 **Information about treating a relapse with steroids**

24 1.8.11 Discuss the benefits and risks of steroids with the person with MS, taking  
25 into account the effect of the relapse on the person's function and  
26 wellbeing.

1 1.8.12 Explain the potential complications of high-dose steroids, such as effects  
2 on mental health, depression and worsening of blood sugar control in  
3 people with diabetes and MS.

4 1.8.13 Give the person with MS and their family members or carers (as  
5 appropriate) written information about side effects of high-dose steroids.

6 1.8.14 Ensure that the MS multidisciplinary team is told that the person is being  
7 treated for relapse, because relapse frequency may influence which  
8 disease-modifying therapies are chosen and whether they need to be  
9 changed.

## 10 **Medical and social care needs at time of relapse**

11 1.8.15 Identify whether the person with MS having a relapse or their family  
12 members or carers have social care needs and if so refer to social  
13 services for assessment.

14 1.8.16 Offer inpatient treatment to the person having a relapse of MS if their  
15 relapse is severe or if it is difficult to meet their medical and social care  
16 needs at home.

17 1.8.17 Be aware that a relapse of MS may have short-term effects on cognitive  
18 function.

## 19 **1.9 Other treatments**

### 20 **Vitamin D**

21 1.9.1 Do not offer vitamin D to treat MS.

### 22 **Omega fatty acids compounds**

23 1.9.2 Do not offer omega-3 or omega-6 fatty acid compounds to treat MS.  
24 Explain to people that there is no evidence that they affect relapse  
25 frequency or progression of MS.

## 2 **Research recommendations**

The Guideline Development Group has made the following recommendations for research, based on its review of evidence, to improve NICE guidance and patient care in the future. The Guideline Development Group's full set of research recommendations is detailed in the full guideline.

### **2.1 Cognitive rehabilitation**

What is the clinical and cost effectiveness of cognitive rehabilitation for people with MS?

#### **Why this is important**

Cognitive impairment affects 43–70% of people with MS and can affect their ability to carry out everyday activities. People with MS who have cognitive problems often engage in fewer social and vocational activities, are less likely to be in employment, can have problems carrying out routine household tasks, can have difficulties with driving and are more vulnerable to psychiatric illness. Caring for a person with MS is also likely to be more difficult if they have cognitive impairment and outcomes from research should include effect on caregivers.

### **2.2 Continued relapses**

Is intravenous methylprednisolone more clinically and cost effective than oral methylprednisolone in people with relapsing–remitting MS and people with secondary progressive MS with continued relapses?

#### **Why this is important**

It has been estimated that 8000 to 10,000 MS relapses will occur per year in the UK, which place a burden on individual patients and the NHS. The primary treatment of acute relapses is with corticosteroids, using a variety of different dosing regimens with both intravenous and oral administration. There is large variation in practice around the UK. The available evidence does not directly compare equivalent doses of oral and intravenous methylprednisolone in the subacute setting in which it is usually delivered.

## 1 **2.3** *Mobility*

2 What is the optimal frequency, intensity and form of rehabilitation for mobility  
3 problems in people with MS?

### 4 **Why this is important**

5 Reduced mobility is one of the most common problems in MS and 85% of people  
6 with MS report a gait disturbance as their main complaint. Gait is a complex function  
7 and many of the symptoms of MS, such as fatigue, weakness, spasticity and ataxia  
8 can impact on its quality. Following an assessment by a physiotherapist with  
9 expertise in MS, some gait-related problems can be improved by the use of devices.  
10 One of the main contributors to poor gait is muscle weakness which may be primary  
11 (for example, because of the disease process) or secondary (as a result of  
12 deconditioning). The latter is common as people with MS are known to reduce their  
13 activity levels soon after diagnosis. Allowing people to regain and then maintain  
14 maximal strength is important so that they can function optimally and remain  
15 independent for as long as possible.

## 16 **2.4** *Spasticity*

17 What non-pharmacological interventions are effective in reducing spasticity in people  
18 with MS?

### 19 **Why this is important**

20 Spasticity is a common symptom affecting up to 80% of people with MS. Many  
21 people with MS also experience spasms, which are sudden, involuntary, often  
22 painful movements affecting any part of the body. Spasticity can range from a feeling  
23 of tightness or stiffness in a limb, especially the legs, which cause mild problems with  
24 walking, to a tightening of the muscles throughout the body which is so severe that  
25 the person is unable to move voluntarily and is confined to a wheelchair or bed. If left  
26 unmanaged in the severe stage, it can lead to the secondary complications of  
27 muscle shortening, permanent contractures and pain. Although medications exist  
28 which reduce spasticity, many people with MS cannot tolerate the side effects,  
29 especially of tiredness, which can compound their fatigue. This means that other,  
30 non-pharmacological interventions need to be identified which can reduce spasticity  
31 and improve function and independence in people with MS.

1 **2.5 Vitamin D**

2 Can vitamin D slow down the progression of disability in MS?

3 **Why this is important**

4 Despite considerable success with agents that substantially reduce relapse  
5 frequency in the initial inflammatory, relapsing–remitting phase, over half of people  
6 eventually develop non-relapsing, secondary progressive MS 1 to 2 decades after  
7 the onset of relapsing–remitting MS. While a variety of symptomatic treatments is  
8 available, progression in secondary progressive MS is currently intractable, and  
9 immunomodulatory strategies used for relapsing–remitting MS have not proven  
10 effective when extended into secondary progressive MS (for example,  
11 cyclophosphamide, beta interferon, and myelin basic protein). Direct neuroprotection  
12 strategies (for example, lamotrigine and tetrahydrocannabinol) have also been  
13 ineffective. The critical and as yet unmet challenge therefore is to find effective and  
14 well-tolerated treatments for secondary progressive MS.

15 **3 Other information**

16 **3.1 Scope and how this guideline was developed**

17 NICE guidelines are developed in accordance with a [scope](#) that defines what the  
18 guideline will and will not cover.

**How this guideline was developed**

NICE commissioned the National Clinical Guideline Centre to develop this guideline. The Centre established a Guideline Development Group (see section 4), which reviewed the evidence and developed the recommendations.

The methods and processes for developing NICE clinical guidelines are described in [The guidelines manual](#).

19

## 1 **3.2 Related NICE guidance**

2 Details are correct at the time of consultation on the guideline (April 2014). Further  
3 information is available on [the NICE website](#).

### 4 **Published**

#### 5 **General**

- 6 • [Patient experience in adult NHS services](#) NICE clinical guideline 138 (2012)
- 7 • [Medicines adherence](#) NICE clinical guideline 76 (2009)

#### 8 **Condition-specific**

- 9 • [Behaviour change: individual approaches](#) NICE public health guidance 49 (2014)
- 10 • [Neuropathic pain – pharmacological management](#) NICE clinical guideline 173  
11 (2013)
- 12 • [Urinary incontinence in neurological disease](#) NICE clinical guideline 148 (2012)
- 13 • [Osteoporosis: assessing the risk of fragility fracture](#) NICE clinical guideline 146  
14 (2012)
- 15 • [Percutaneous venoplasty for chronic cerebrospinal venous insufficiency in  
16 multiple sclerosis](#) NICE interventional procedure guidance 420 (2012)
- 17 • [Infection control](#) NICE clinical guideline 139 (2012)
- 18 • [Percutaneous venoplasty for chronic cerebrospinal venous insufficiency for  
19 multiple sclerosis](#) NICE interventional procedure guidance 420 (2012)
- 20 • [Generalised anxiety disorder and panic disorder \(with or without agoraphobia\) in  
21 adults](#) NICE clinical guideline 113 (2011)
- 22 • [End of life care for adults](#) NICE quality standard 13 (2011) [Depression in adults](#)  
23 NICE clinical guideline 90 (2009)
- 24 • [The treatment and management of depression in adults with chronic physical  
25 health problems](#) NICE clinical guideline 91 (2009)
- 26 • [Functional electrical stimulation for drop foot of central neurological origin](#) NICE  
27 interventional procedure guidance 278 (2009)
- 28 • [Faecal incontinence](#) NICE clinical guideline 49 (2007)
- 29 • [Natalizumab for the treatment of adults with highly active relapsing-remitting  
30 multiple sclerosis](#) NICE technology appraisal guidance127 (2007)
- 31 • [Dementia](#) NICE clinical guideline 42 (2007)



- 1 • [Nutrition support in adults](#) NICE clinical guideline 32 (2006)
- 2 • [Deep brain stimulation for tremor and dystonia \(excluding Parkinson's disease\)](#)
- 3 NICE interventional procedure guidance 188 (2006)
- 4 • [The management of pressure ulcers in primary and secondary care](#) NICE clinical
- 5 guideline 29 (2005) (update currently in progress) c
- 6 • [Pressure relieving devices](#) NICE clinical guideline 7 (2003)
- 7 • [Guidance on beta interferon and glatiramer acetate for the treatment of multiple](#)
- 8 [sclerosis](#) NICE technology appraisal guidance 32 (2002)
- 9 • [Guidance on the use of computerised cognitive behavioural therapy for anxiety](#)
- 10 [and depression](#) NICE technology appraisal guidance 51 (2002)

#### 11 **Under development**

12 NICE is developing the following guidance (details available from [the NICE website](#)):

- 13 • Pressure ulcers in primary and secondary care (update). Publication expected
- 14 May 2014.

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