NICE National Institute for Health and Care Excellence

NICE guideline

Multiple sclerosis in adults: management

Clinical guideline

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Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guideline replaces CG8.

This guideline is the basis of QS108.

Overview

This guideline covers diagnosing and managing multiple sclerosis in people aged 18 and over. It aims to improve the quality of life for adults with multiple sclerosis by promoting symptom management, comprehensive reviews and effective relapse treatment.

The guideline does not cover disease-modifying treatments. These are covered by the technology appraisals on NICE's webpage on multiple sclerosis.

Who is it for?

- Healthcare professionals
- Social care practitioners
- Commissioners and providers
- Adults with multiple sclerosis and their families and carers

Context

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

People with MS typically develop symptoms in their late 20s, experiencing visual and sensory disturbances, limb weakness, gait problems, and bladder and bowel symptoms. They may initially have partial recovery, but over time develop progressive disability. The most common pattern of disease is **relapsing–remitting MS** (RRMS) where periods of stability (remission) are followed by episodes when there are exacerbations of symptoms (relapses). About 85 out of 100 people with MS have RRMS at onset. Around two-thirds of people who start with RRMS may develop **secondary progressive MS**: this occurs when there is a gradual accumulation of disability unrelated to relapses, which become less frequent or stop completely. Also about 10 to 15 out of 100 people with MS have **primary progressive MS** where symptoms gradually develop and worsen over time from the start, without ever experiencing relapses and remissions.

The cause of MS is unknown. It is believed that an abnormal immune response to environmental triggers in people who are genetically predisposed results in immune-mediated acute, and then chronic, inflammation. The initial phase of inflammation is followed by a phase of progressive degeneration of the affected cells in the nervous system. MS is a potentially highly disabling disorder with considerable personal, social and economic consequences. People with MS live for many years after diagnosis with significant impact on their ability to work, as well as an adverse and often highly debilitating effect on their quality of life and that of their families.

This guideline covers diagnosis, information and support, treatment of relapse and management of MS-related symptoms. The guideline does not address all symptoms and problems associated with MS. Some areas are addressed in other NICE guidance for example urinary symptoms and swallowing, and these are referenced where appropriate. Many of the interventions used in a rehabilitation setting to alleviate symptoms such as tremor, weakness, cardiorespiratory fitness, sensory loss, visual problems (apart from oscillopsia), and secondary complications of immobility such as deconditioning and contractures have not been covered because these are beyond the scope of the guideline. Many of these problems are complex and need individual assessment and management strategies. These assessments and treatments need to be carried out by healthcare professionals with appropriate expertise in rehabilitation and MS.

The guideline does not address the use of disease-modifying treatments; there are NICE technology appraisals about these treatments.

The guideline is aimed primarily at services provided in primary and secondary care. It does not map out a model of service delivery. Many people with MS may also attend specialised tertiary services, often established particularly to provide and monitor disease-modifying therapies.

Drug recommendations

The guideline will assume that prescribers will use a drug's summary of product characteristics to inform decisions made with individual patients.

This guideline recommends some drugs for indications for which they do not have a UK marketing authorisation at the date of publication, if there is good evidence to support that use. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. The patient (or those with authority to give consent on their behalf) should provide informed consent, which should be documented. See the General Medical Council's Good practice in prescribing medicines – guidance for doctors for further information. Where recommendations have been made for the use of drugs outside their licensed indications ('off-label use'), these are indicated in the recommendations.

Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in making decisions about 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.

1.1 Diagnosing MS

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

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

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

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

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

neurological symptoms or signs.

1.1.4 Before referring a person suspected of having MS to a neurologist, exclude alternative diagnoses by performing blood tests including:

- full blood count
- inflammatory markers for example erythrocyte sedimentation rate, C-reactive protein
- liver function tests
- renal function tests
- calcium
- glucose
- thyroid function tests
- vitamin B_{12}
- HIV serology.

1.1.5 Do not diagnose MS on the basis of MRI findings alone.

1.1.6 Refer people suspected of having MS to a consultant neurologist. Speak to the consultant neurologist if you think a person needs to be seen urgently.

1.1.7 Only a consultant neurologist should make the diagnosis of MS on the basis of established up-to-date criteria, such as the revised 2010 McDonald criteria, after:

- assessing that episodes are consistent with an inflammatory process
- excluding alternative diagnoses
- establishing that lesions have developed at different times and are in different anatomical locations for a diagnosis of relapsing–remitting MS
- establishing progressive neurological deterioration over 1 year or more for a diagnosis of primary progressive MS.

1.1.8 If a person is suspected of having MS but does not fulfil the diagnostic criteria,

plan a review. Discuss the timing of the review with the person and ensure they know who to contact for advice if they develop further neurological symptoms or if current symptoms worsen.

1.1.9 Offer people suspected of having MS, information about support groups and national charities.

Optic neuritis and neuromyelitis optica

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

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

1.2 Providing information and support

1.2.1 NICE has produced guidance on the components of good patient experience in adult NHS services. This includes recommendations on communication, information and coordination of care. Follow the recommendations in the NICE guideline on patient experience in adult NHS services.

Information at the time of diagnosis

1.2.2 The consultant neurologist should ensure that people with MS and, with their agreement their family members or carers, are offered oral and written information at the time of diagnosis. This should include, but not be limited to, information about:

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

1.2.3 Discuss with the person with MS and their family members or carers whether they have social care needs and if so refer them to social services for assessment. Ensure the needs of children of people with MS are addressed.

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

Ongoing information and support

1.2.5 Review information, support and social care needs regularly. Continue to offer information and support to people with MS or their family members or carers even if this has been declined previously.

1.2.6 Ensure people with MS and their family members or carers have a management plan that includes who to contact if their symptoms change significantly.

1.2.7 Explain to people with MS that the possible causes of symptom changes include:

- another illness such as an infection
- further relapse
- change of disease status (for example progression).

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

1.2.9 When appropriate, explain to the person with MS (and their family members or carers if the person wishes) about advance care planning and power of attorney.

1.3 Coordination of care

1.3.1 Care for people with MS using a coordinated multidisciplinary approach. Involve professionals who can best meet the needs of the person with MS and who have expertise in managing MS including:

- consultant neurologists
- MS nurses

- physiotherapists and occupational therapists
- speech and language therapists, psychologists, dietitians, social care and continence specialists
- GPs.

1.3.2 Offer the person with MS an appropriate single point of contact to coordinate care and help them access services.

1.4 Modifiable risk factors for relapse or progression of MS

Exercise

1.4.1 Encourage people with MS to exercise. Advise them that regular exercise may have beneficial effects on their MS and does not have any harmful effects on their MS.

Vaccinations

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

1.4.3 Discuss with the person with MS:

- the possible benefits of flu vaccination **and**
- the possible risk of relapse after flu vaccination if they have relapsing–remitting MS.

1.4.4 Offer flu vaccinations to people with MS in accordance with national guidelines, which recommend an individualised approach according to the person's needs.

Pregnancy

1.4.5 Explain to women of childbearing age with MS that:

- relapse rates may reduce during pregnancy and may increase 3–6 months after childbirth before returning to pre-pregnancy rates

- pregnancy does not increase the risk of progression of disease.

1.4.6 If a person with MS is thinking about pregnancy, give them the opportunity to talk with a healthcare professional with knowledge of MS about:

- fertility
- the risk of the child developing MS
- use of vitamin D before conception and during pregnancy
- medication use in pregnancy
- pain relief during delivery (including epidurals)
- care of the child
- breastfeeding.

Smoking

1.4.7 Advise people with MS not to smoke and explain that it may increase the progression of disability. (See the NICE guideline on stop smoking interventions and services.)

1.5 MS symptom management and rehabilitation

The guideline does not make recommendations for all symptoms that occur in people with MS. Some symptoms are addressed in other NICE guidelines and these are referenced where appropriate.

1.5.1 Determine how often the person with MS will need to be seen based on:

- their needs, and those of their family and carers **and**
- the frequency of visits needed for different types of treatment (such as review of disease-modifying therapies, rehabilitation and symptom management).

Fatigue

1.5.2 Assess and offer treatment to people with MS who have fatigue for anxiety, depression, difficulty in sleeping, and any potential medical problems such as

anaemia or thyroid disease.

1.5.3 Explain that MS-related fatigue may be precipitated by heat, overexertion and stress or may be related to the time of day.

1.5.4 Offer amantadine to treat fatigue in people with MS.

In October 2014, this was an off-label use of amantadine. See NICE's information on prescribing medicines.

1.5.5 Consider mindfulness-based training, cognitive behavioural therapy or fatigue management for treating MS-related fatigue.

1.5.6 Advise people that aerobic, balance and stretching exercises including yoga may be helpful in treating MS-related fatigue.

1.5.7 Do not use vitamin B_{12} injections to treat fatigue in people with MS.

1.5.8 Consider a comprehensive programme of aerobic and moderate progressive resistance activity combined with cognitive behavioural techniques for fatigue in people with MS with moderately impaired mobility (an EDSS [Expanded Disability Status Scale] score of greater than or equal to 4).

Mobility

1.5.9 Ensure people with MS and mobility problems have access to an assessment to establish individual goals and discuss ways in which to achieve them. This would usually involve rehabilitation specialists and physiotherapists with expertise in MS.

1.5.10 Do not use fampridine to treat lack of mobility in people with MS because it is not a cost effective treatment.

This recommendation does not apply to people who have already started treatment with fampridine in the NHS who should be able to continue treatment until they and their NHS clinician think it appropriate to stop.

Mobility or fatigue

1.5.11 Consider supervised exercise programmes involving moderate progressive resistance training and aerobic exercise to treat people with MS who have mobility problems and/or fatigue.

Mobility and/or fatigue with balance problems

1.5.12 Consider vestibular rehabilitation for people with MS who have fatigue or mobility problems associated with limited standing balance.

Treatment programmes for mobility and/or fatigue

1.5.13 Encourage people with MS to keep exercising after treatment programmes end for longer term benefits (see the NICE guideline on behaviour change: individual approaches).

1.5.14 Help the person with MS continue to exercise, for example by referring them to exercise referral schemes.

1.5.15 If more than one of the interventions recommended for mobility or fatigue are suitable, offer treatment based on which the person prefers and whether they can continue the activity after the treatment programme ends.

Spasticity

1.5.16 In people with MS assess and offer treatment for factors that may aggravate spasticity such as constipation, urinary tract or other infections, inappropriately fitted mobility aids, pressure ulcers, posture and pain.

1.5.17 Encourage people with MS to manage their own spasticity symptoms by explaining how doses of drugs can be adjusted within agreed limits.

1.5.18 Ensure that the person with MS:

- has tried the drug at an optimal dose, or the maximum dose they can tolerate
- stops the drug if there is no benefit at the maximum tolerated dose (but note any special precautions needed when stopping specific drugs)

- has their drug treatment reviewed at least annually once the optimal dose has been reached.

1.5.19 Consider baclofen or gabapentin as a first-line drug to treat spasticity in MS depending on contraindications and the person's comorbidities and preferences. If the person with MS cannot tolerate one of these drugs consider switching to the other.

In October 2014, this was an off-label use of gabapentin. See NICE's information on prescribing medicines and the 2019 Drug Safety Update from the Medicines and Healthcare products Regulatory Agency (MHRA).

1.5.20 Consider a combination of baclofen and gabapentin for people with MS if:

- individual drugs do not provide adequate relief **or**
- side effects from individual drugs prevent the dose being increased.

See the summary of product characteristics for gabapentin and baclofen and the British national formulary, and use caution when using these drugs in combination. In October 2014, this was an off-label use of gabapentin. See NICE's information on prescribing medicines and the 2019 Drug Safety Update from the MHRA.

1.5.21 Consider tizanidine or dantrolene as a second-line option to treat spasticity in people with MS.

1.5.22 Consider benzodiazepines as a third-line option to treat spasticity in MS and be aware of their potential benefit in treating nocturnal spasms.

1.5.23 For guidance on THC:CBD spray for treating spasticity in people with MS see the NICE guideline on cannabis-based medicinal products. **[amended 2019]**

1.5.24 If spasticity cannot be managed with any of the above pharmacological treatments, refer the person to specialist spasticity services.

Oscillopsia

1.5.25 Consider gabapentin as a first-line drug to treat oscillopsia in people with MS.

In October 2014, this was an off-label use of gabapentin. See NICE's information on prescribing medicines and the 2019 Drug Safety Update from the MHRA.

1.5.26 Consider memantine as the second-line treatment for oscillopsia in people with MS.

In October 2014, this was an off-label use of memantine. See NICE's information on prescribing medicines.

1.5.27 Refer the person with MS for specialist advice if there is no improvement of oscillopsia after treatment with gabapentin and memantine or side effects prevent continued use.

Emotional lability

1.5.28 Consider amitriptyline to treat emotional lability (involuntary laughing and crying related to a frontal lobe lesion) in people with MS.

In October 2014, this was an off-label use of amitriptyline. See NICE's information on prescribing medicines.

Pain

1.5.29 Treat neuropathic pain in people with MS according to the NICE guideline on neuropathic pain in adults and refer to pain services if appropriate.

1.5.30 Be aware that musculoskeletal pain is common in people with MS and is usually secondary to problems with mobility and posture. Assess musculoskeletal pain, offer treatment to the person and refer them as appropriate.

Cognition including memory

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

1.5.32 Be aware that anxiety, depression (see the NICE guideline on depression in adults with a chronic physical health problem), difficulty in sleeping and fatigue

can impact on cognitive problems. If a person with MS experiences these symptoms and has problems with memory and cognition, offer them an assessment and treatment.

1.5.33 Consider referring people with MS and persisting memory or cognitive problems to both an occupational therapist and a neuropsychologist to assess and manage these symptoms.

1.6 Comprehensive review

1.6.1 Ensure all people with MS have a comprehensive review of all aspects of their care at least once a year.

1.6.2 Ensure the comprehensive review is carried out by healthcare professionals with expertise in MS and its complications. Involve different healthcare professionals with expertise in specific areas of the review if needed.

1.6.3 Tailor the comprehensive review to the needs of the person with MS assessing:

- MS symptoms:
  - mobility and balance including falls
  - need for mobility aids including wheelchair assessment
  - use of arms and hands
  - muscle spasms and stiffness
  - tremor
  - bladder (see the NICE guideline on urinary incontinence in neurological disease), bowel (see the NICE guideline on faecal incontinence in adults) and sexual function
  - sensory symptoms and pain
  - speech and swallowing (see the NICE guideline on nutrition support for adults)
  - vision
  - cognitive symptoms
  - fatigue
  - depression (see the NICE guideline on depression in adults with a chronic physical health problem) and anxiety (see the NICE guideline on generalised anxiety disorder and panic disorder in adults)
  - sleep
  - respiratory function.
- MS disease course:
  - relapses in last year.

- General health:
  - weight
  - smoking, alcohol and recreational drugs
  - exercise
  - access to routine health screening and contraception
  - care of other chronic conditions.
- Social activity and participation:
  - family and social circumstances
  - driving and access to transport
  - employment
  - access to daily activities and leisure.
- Care and carers:
  - personal care needs
  - social care needs
  - access to adaptations and equipment at home.

1.6.4 Refer any issues identified during the comprehensive review of the person with MS to members of the MS multidisciplinary team and other appropriate teams so that they can be managed.

1.6.5 Ensure people with MS are offered a medication review in line with the NICE guidelines on medicines adherence and medicines optimisation.

1.6.6 Ensure people with MS have their bone health regularly assessed and reviewed in line with the NICE guideline on osteoporosis.

1.6.7 Ensure people with MS and severely reduced mobility are regularly assessed and reviewed for risk of contractures (shortening of tendons, muscles or ligaments that limits joint movement).

1.6.8 Check people with MS and severely reduced mobility at every contact for areas at risk of pressure ulcers (see the NICE guideline on pressure ulcers).

1.6.9 Discuss the care provided by carers and care workers as part of the person's care plan. Ensure carers know about their right to a carer's assessment (see the NICE guideline on supporting adult carers for recommendations on identifying, assessing and meeting the caring, physical and mental health needs of families and carers).

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

1.7 Relapse and exacerbation

Treating acute relapse of MS with steroids

1.7.1 Develop local guidance and pathways for timely treatment of relapses of MS. Ensure follow-up is included in the guidance and pathway.

1.7.2 Non-specialists should discuss a person's diagnosis of relapse and whether to offer steroids with a healthcare professional with expertise in MS because not all relapses need treating with steroids.

Recognising a relapse

1.7.3 Diagnose a relapse of MS if the person:

- develops new symptoms **or**
- has worsening of existing symptoms

and these last for more than 24 hours in the absence of infection or any other cause after a stable period of at least 1 month.

1.7.4 Before diagnosing a relapse of MS:

- rule out infection – particularly urinary tract and respiratory infections **and**
- discriminate between the relapse and fluctuations in disease or progression.

1.7.5 Assess and offer treatment for relapses of MS, that affect the person's ability to perform their usual tasks, as early as possible and within 14 days of onset of symptoms.

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

Treating a relapse

1.7.7 Offer treatment for relapse of MS with oral methylprednisolone 0.5 g daily for 5 days.

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

- in whom oral steroids have failed or not been tolerated **or**
- who need admitting to hospital for a severe relapse or monitoring of medical or psychological conditions such as diabetes or depression.

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

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

Information about treating a relapse with steroids

1.7.11 Discuss the benefits and risks of steroids with the person with MS, taking into account the effect of the relapse on the person's ability to perform their usual tasks and their wellbeing.

1.7.12 Explain the potential complications of high-dose steroids, for example temporary effects on mental health (such as depression, confusion and agitation) and worsening of blood glucose control in people with diabetes.

1.7.13 Give the person with MS and their family members or carers (as appropriate) information that they can take away about side effects of high-dose steroids in a format that is appropriate for them.

1.7.14 Ensure that the MS multidisciplinary team is told that the person is having a relapse, because relapse frequency may influence which disease-modifying therapies are chosen and whether they need to be changed.

Medical, therapy and social care needs at time of relapse or exacerbation

1.7.15 Identify whether the person having a relapse of MS or their family members or carers have social care needs and if so refer them to social services for assessment.

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

1.7.17 Explain that a relapse of MS may have short-term effects on cognitive function.

1.7.18 Identify whether the person with MS having a relapse or exacerbation needs additional symptom management or rehabilitation.

1.8 Other treatments

Vitamin D

1.8.1 Do not offer vitamin D solely for the purpose of treating MS.

Omega fatty acids compounds

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

Recommendations for research

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.

1.9 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.

1.10 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 each 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.

1.11 Mobility

What is the optimal frequency, intensity and form of rehabilitation for mobility problems in people

with MS?

Why this is important

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

1.12 Spasticity

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

Why this is important

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

1.13 Vitamin D

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

Why this is important

Despite considerable success with agents that substantially reduce relapse frequency in the initial inflammatory, relapsing–remitting phase, over half of people eventually develop non-relapsing,

secondary progressive MS 1 to 2 decades after the onset of relapsing–remitting MS. While a variety of symptomatic treatments is available, progression in secondary progressive MS is currently intractable, and immunomodulatory strategies used for relapsing–remitting MS have not proven effective when extended into secondary progressive MS (for example, beta interferon). Direct neuroprotection strategies (for example tetrahydrocannabinol) have also been ineffective. The critical and as yet unmet challenge therefore is to find effective and well-tolerated treatments for secondary progressive MS.

Finding more information and committee details

You can see everything NICE says on this topic in the NICE Pathway on multiple sclerosis.

To find NICE guidance on related topics, including guidance in development, see our topic page for neurological conditions.

For full details of the evidence and the guideline committee's discussions, see the full guideline. You can also find information about how the guideline was developed, including details of the committee.

NICE has produced tools and resources to help you put this guideline into practice. For general help and advice on putting NICE guidelines into practice, see resources to help you put guidance into practice.

Update information

November 2019: Recommendation 1.5.23 on the use of Sativex (a THC:CBD spray) to treat spasticity in people with MS has been replaced with a cross-reference to recommendations on THC:CBD spray in the NICE guideline on cannabis-based medicinal products.

July 2019: Because of a risk of abuse and dependence, gabapentin is controlled under the Misuse of Drugs Act 1971 as a class C substance and scheduled under the Misuse of Drugs Regulations 2001 as schedule 3 (as of 1 April 2019). A footnote in this guideline has been amended to reflect this change.

Minor changes since publication

September 2020: We have linked to the NICE guideline on supporting adult carers in recommendation 1.6.9. We have incorporated footnote text into the recommendations to meet accessibility requirements.

November 2018: After a surveillance review, some recommendations have had links to other relevant NICE guidance added or updated, and some links to external sites have been updated.

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Accreditation