



# Multiple sclerosis information

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## for health and social care professionals

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### Mobility

Mobility can be defined as the ability “to independently and safely move oneself from one place to another”. In MS, altered movement is one of the more common symptoms and may be due to focal weakness or tightness in a muscle group.

Although this section considers a physiotherapeutic approach to these problems, it must be remembered that mobility can be adversely affected by altered sensation, fatigue, visual disturbance, ataxia, pain or depression. These symptoms and effects are dealt with elsewhere in this book, as is spasticity, which can be a major contributory factor to mobility problems.

Other factors with a major impact on mobility and which may need to be considered include:

- wheelchair and seating
- walking aids: sticks, elbow crutches, delta walkers, rollators (4 wheeled walkers)
- splinting and orthotics
- appropriate home adaptations: hoists, stair lifts, transfer aids, bath aids, railings.

This section describes the physiotherapeutic approach, considers group exercise, the importance of good positioning and individual exercises to encourage this, and describes the use of functional electrical stimulation (FES) and fampridine.

### A physiotherapy approach

Physiotherapy aims to prevent unnecessary complications such as contractures, poor gait patterns, pressure sores and muscle imbalance. It addresses poor co-ordination, balance issues and reduces the risk of falls. It promotes exercise which is valuable in the reduction of fatigue, weakness and social isolation through becoming house-bound. Physiotherapy may also help with depression, which affects a high proportion of people living with MS. One of the goals of physiotherapy is to educate and to motivate people to reach their full potential at any stage of their condition. Thus, physiotherapy promotes well-being and quality of life of the individual throughout the whole spectrum of their condition.

### Physical problems can be divided into

- primary problems which arise as a direct result of neurological damage
- secondary problems which arise as complications of altered movement and which are preventable.

It is important to distinguish between habilitation and rehabilitation. The former enables the individual to continue with their present lifestyle, whilst the latter enables them to return to the best level possible following a relapse or period of inactivity.

The therapy regime should be realistic and relevant in order to lead to improvement. Wherever possible, people with MS should be encouraged to start exercise early in their disease course. Maintaining ability is easier than regaining ability. One challenge in MS is the individual's ability to comply with a routine. It is difficult for fit people to persevere with exercises without becoming bored and disheartened; if you add the problem of pain, fatigue and disability then motivation can become an even greater challenge. Group sessions in a proactive atmosphere can be useful at all stages, however some people may prefer to exercise at home.

### Group physiotherapy

Groups need to meet in a venue which is local, easily accessible, with ramps, good transport and parking and with disabled toilets nearby. Group therapy should be pitched at the appropriate level of ability and should suit different interests. It should be viewed as a supplement to individual therapy.

Groups have many advantages including:

- the opportunity to educate and teach preventative strategies to more than one person. Groups are more economical than one to one so can often continue to provide support by running for longer periods. Ongoing individual physiotherapy for people with MS is not a reality in most areas
- improved attendance and motivation to increase activity levels
- a positive way of monitoring progress, and picking up any problems before complications arise and therefore making appropriate referrals to other professionals when required
- social interaction leading to friendships, mutual support and empowerment through sharing new ideas and coping strategies

- promotion of a positive mental attitude by encouraging individuals to go out of the house
- reduction of stress level by incorporating elements of relaxation and teaching better breathing techniques.

Each person should be assessed individually before entering a class, and be given a home exercise regime when appropriate. At each class, a realistic goal could be set for every attendee to work on before the following class.

The goals of a group exercise routine include:

- maintaining good posture - looking at positioning in chairs, wheelchairs, cars or at work
- maintaining correct dynamic and static balance mechanisms
- maintaining standing to encourage weightbearing
- avoiding muscle imbalance - maintaining muscle strength and length, so a good daily stretching regime needs to be established
- pacing to reduce fatigue
- reducing complications
- developing a healthy self-image
- developing body awareness which allows better strategies for standing and walking
- increasing stamina and blood circulation
- maintaining supple joints and reducing pain
- improving motivation and compliance with exercises
- improving mood.

Group activities can be beneficial for those who are newly diagnosed and/or have minimal disability. If groups are kept small then those who are moderately disabled can also benefit but they may need some individual input from carers or physiotherapists. If appropriate, partners or carers may be involved and shown how to help with a basic stretching routine, positioning and manual handling. Those with severe disability need on-going support, long-term care facilities and

realistic, regular and long-term input from a physiotherapist. A multidisciplinary approach is vital for both the person with MS and the carer.

Exercises can be made more attractive by variety:

- hydrotherapy - individually and in groups
- equipment - treadmills, Swiss balls, poles, weights, cycles, vibrating plates, standing frame, parallel bars, pulleys, parachutes
- games - involving coordination, hand-eye control, cognitive skills and functional movements, from simple throwing and catching to competitive work
- T'ai Chi, yoga, Chi Qung, Pilates, circuit training, dance (movement with music) and other similar classes
- attendance at a gym and local exercise referral schemes
- hippotherapy - a physiotherapeutic treatment using the movement of the horse to challenge balance, core stability, increase body awareness and stretch tight soft tissue structures.

Education plays a vital role at all stages of MS. The person with MS needs to be involved in the treatment plan as an active participant, as well as learning about the condition and how to minimise complications and to maximise potentials. He/she needs to take responsibility for the quality of routine which, to be effective, should be carried out regularly, if possible daily. Management is a 24 hours a day, seven days a week challenge. In order to achieve maximum benefit, long-term care and support are needed, involvement of family, carers and friends, and forward planning of activities to ensure pacing and maximum enjoyment of life.

### Posture and positioning

Posture describes the position one holds one's body in, whether sitting, standing or even lying down. If one has 'good posture', it will prepare and allow one to move in the way one wants.

It is common for people with MS to adopt a compensatory posture, which, in the long term can exacerbate symptoms (eg spasms, pain) and worsen mobility problems.

### Posture should be assessed:

#### In a chair:

- Does the person slump?
- Are they seated one-sided?
- Have they got diminished breath control/quiet voice/ability to swallow?
- Do they have to hold on with their hands to keep their trunk stable?
- Does their head stay upright through the course of the day?

#### In a wheelchair:

- All the above questions apply in addition to:
  - Is the chair giving the required support to the individual's back, head, seat, thighs and feet?
  - Is the chair contributing to poor posture?
  - Is the chair light enough to be self-propelled?
  - Is the person comfortable?

#### In bed:

- Do they lie in the 'windswept' position (body flat and legs turned to one side)?
- Do they hold their head to one side?
- Do they go into spasms?
- Are the heels rubbing too much?
- Do they seem comfortable?

Changes in positioning can become habitual, leading to further problems of poor circulation, increased risk of infections, pressure sores, shortening of muscles, stiffening of joints, increased spasms and general discomfort and pain.

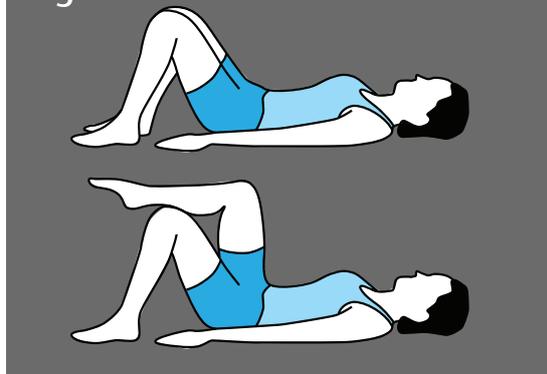
Many people are unaware of postures that they adopt because of the brain's ability to adapt when its equilibrium is compromised. For example, if one leg does not 'work' or 'feel right', the body will adopt a one-sided stance in order to stand up while shifting the weight away from the problematic side. If that compensation is not corrected, then the changes in posture could become permanent. A physiotherapist can advise on measures to prevent and/or correct postural problems and improve comfort when seated and when in bed.

### Individual exercises

A variety of simple exercises can be done at home. All of these exercises can be done in a chair; some can also be done in bed.

**Breathing exercises** (e.g. deep breathing, whistling, singing, blowing in a balloon) will encourage diaphragmatic control and increased air flow and

Figure 1



circulation. Subsequently, people will usually sit up straighter and improve their posture automatically.

**Stretching exercises** that elongate the trunk muscles eg stretching forward across a table while sitting; holding a stick or a cardboard tube and raising it above the head or reaching out to the side; yoga-type exercises.

**Balance exercises** are very valuable to improve postural awareness (eg standing in front of the kitchen counter and with a chair behind, trying to stand unsupported; balance from one leg to the other, from heel to toe and then find 'the middle' so that the body weight is distributed equally on both feet; Tai Chi).

**Core stability exercises** aimed at improving the control of the trunk in response to disturbances generated by movements of the limbs eg bridging, pelvic tilt, quadruped arm and/or leg stretch, Pilates-type exercises (Figure 1).

Using a regular trigger for daily activity can make exercise easy to remember. This could be exercising whilst waiting for the kettle to boil or checking posture when looking in the mirror to comb hair.

### Functional electrical stimulation

People with MS often experience foot drop where the foot drags along the ground or hangs down when walking. Functional electrical stimulation (FES) applies electrical stimulation to unresponsive or weak muscles and forces functional movement.

To be suitable for the treatment, the individual needs to be able to walk, even if only a few metres with a stick or crutch. By wearing a foot switch triggered stimulator, the person with MS - with corrected dropped foot - can maintain use of walking muscles for longer.

In January 2009, NICE issued guidance that FES can be offered routinely as a treatment option for people with foot drop caused by damage to the brain or spinal cord.

The use of FES is growing, with an increasing number of centres offering the treatment. An assessment by a physiotherapist trained in the use of FES is required to ensure that the treatment will be suitable for the individual. The physiotherapist will also make sure that the pads are placed properly and that the equipment is being used most effectively.

### Fampridine (Fampyra)

Fampridine, a potassium channel blocker, may be effective for those whose walking impairment has been caused by reduced nerve transmission. Fampridine works by blocking some of the chemical processes in nerves to allow electrical signals to continue travelling along damaged nerves to stimulate muscles.

Fampridine, taken as one 10mg tablet twice daily, is licensed for the improvement of walking in adult patients with MS who have walking disability (EDSS 4-7).

In clinical trials, approximately one third to one half of people taking fampridine found walking speed improved, with an average improvement of about 25%. Initial treatment should be limited to a two week trial to identify responders. A timed walking test eg timed 25 foot walk, should be used to evaluate improvement. Side effects can include dizziness, nausea, some agitation or wakefulness, back pain and balance disorders. At higher doses the risk of more serious side effects, including seizures, increases. For this reason it is important not to exceed the recommended daily dose.

### Further resources

Ashburn A, Lennon S, Mokone S. Developing a physiotherapy service for patients with multiple sclerosis. *Int J Ther Rehabil* 1997;4(12):654-70.

DeSouza L, Bates D, Moran G. Multiple sclerosis. In: Stokes M, editor. *Neurological physiotherapy*. London: Mosby International Ltd; 1998. p133-48.

Edwards S. *Neurological rehabilitation*. Edinburgh: Churchill Livingstone; 2001.

Freeman JA, Gear M, Pauli A, et al. The effect of core stability training on balance and mobility in ambulant individuals with multiple sclerosis: a multicentre series of single case studies. *Mult Scler* 2010;16(11):1377-84.

Gear M, Freeman J, Hunter H. Core stability training in MS. *Way Ahead* 2011;15(3):8-9

Goodman AD, Brown TR, Edwards KR, et al. A phase 3 trial of extended release oral dalfampridine in multiple sclerosis. *Ann Neurol* 2010;68(4):494-502.

Kasser S. Exercising with multiple sclerosis: insights into meaning and motivation. *Adapt Phys Activ Q* 2009;26(3):274-89.

Lord SE, Wade DT, Halligan PW. A comparison of two physiotherapy treatment approaches to improve walking in multiple sclerosis: a pilot randomized controlled study. *Clin Rehabil* 1998;12(6):477-86.

National Institute for Health and Clinical Excellence. Functional electrical stimulation for drop foot of central neurological origin. NICE Interventional procedure guidance 278. London: NICE; 2009.

National Institute for Health and Clinical Excellence. Multiple sclerosis: management of multiple sclerosis in primary and secondary care. NICE Clinical Guideline 8. London: NICE; 2003.

Pope P. Night-time postural support for people with multiple sclerosis. *Way Ahead* 2007;11(4):6-8.

Solari A, Filippini G, Gasco P, et al. Physical rehabilitation has a positive effect on disability in multiple sclerosis patients. *Neurology* 1999;52(1):57-62.

Schyns F, Paul L, Finlay K, et al. Vibration therapy in multiple sclerosis: a pilot study exploring its effects on tone, muscle force, sensation and functional performance. *Clin Rehabil* 2009;23(9):771-81.

Silkwood-Sherer D, Warmbier H. Effects of hippotherapy on postural stability in persons with multiple sclerosis: a pilot study. *J Neurol Phys Ther* 2007;31(2):77-84.

Snook EM, Motl RW. Effect of exercise training on walking mobility in multiple sclerosis: a meta-analysis. *Neurorehabil Neural Repair* 2009;23(2):108-16.

Wiles CM, Newcombe RG, Fuller KJ, et al. Controlled randomised crossover trial of the effects of physiotherapy on mobility in chronic multiple sclerosis. *J Neurol Neurosurg Psychiatry* 2001;70(2):174-9.

### MS Trust resources

Are you sitting comfortably?  
a self-help guide to good posture  
and positioning

Falls: managing the ups and downs of MS

Functional electrical stimulation (FES) factsheet  
Fampridine (Fampyra) factsheet

Exercises for people with MS  
[www.mstrust.org.uk/exercises](http://www.mstrust.org.uk/exercises)



We hope you find the information in this book helpful. If you would like to speak with someone about any aspect of MS, contact the MS Trust information team and they will help find answers to your questions.

This book has been provided free by the Multiple Sclerosis Trust, a small UK charity which works to improve the lives of people affected by MS. We rely on donations, fundraising and gifts in wills to be able to fund our services and are extremely grateful for every donation received, no matter what size.

## MS Trust information service

### Helping you find the information you need

The MS Trust offers a wide range of publications, including a newsletter for health and social care professionals Way Ahead and the MS Information Update, which provides an ongoing update on research and developments in MS management.

For a full list of MS Trust publications, to sign up for Way Ahead and much more visit our website at [www.mstrust.org.uk](http://www.mstrust.org.uk)



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