



Multiple Sclerosis

This fact sheet provides information on multiple sclerosis (MS). Our fact sheets are designed as general introductions to each subject and are intended to be concise. Sources of further support and more detailed information are listed in the Useful Contacts section. Each person is affected differently by MS and you should speak with your doctor or specialist for individual advice.

What is multiple sclerosis (MS)?

Multiple sclerosis (MS) is a condition of the central nervous system.

People with MS experience damage to the outer coating of the nerve fibres that carry messages (nerve impulses) from the brain along the spinal cord and to the rest of the body. This coating is called the myelin sheath.

Some of this damage might be repaired by the body but often small areas of scarring are left (sclerosis) and the damaged nerves are unable to transmit messages as effectively as before.

The Central Nervous System

The central nervous system is made up of the brain and spinal cord.

Messages (nerve impulses) from the brain travel along the spinal cord and control the activities of the body such as the movement of the arms and legs and the function of the organs.

The peripheral nervous system (the network of nerves outside the central nervous system) carries messages between the central nervous system and the rest of the body.

The cranial nerves which carry messages to the face and eyes are part of the peripheral nervous system. These nerves can be affected by MS, causing face pain (trigeminal neuralgia) and visual problems.

There are different types of MS and each person is affected differently. It is difficult to predict whether an individual will experience a mild form of MS or develop a more severe form causing serious disability. Some people experience sudden attacks of symptoms that subsequently improve or disappear completely (relapsing remitting MS). Some people with relapsing remitting MS find that

they stop making recoveries and go on to experience a gradual worsening of their symptoms (secondary progressive MS). Other people find that, from the onset, their symptoms gradually worsen over time (primary progressive MS). Some people recover fully from their symptoms and do not experience any further attacks for several years (benign MS).

What causes MS?

The nerve damage experienced by people with MS is caused by a problem with the body's immune system. Our immune system defends us from harmful bacteria and viruses but, in the case of MS, it mistakenly attacks a healthy part of the body, the myelin sheath. This is called an autoimmune reaction. We do not know exactly what causes the autoimmune reaction.

MS is not considered as hereditary however people are at a slightly increased risk of developing MS if someone in their family has the condition. Whilst genes play a part, there also seems to be an environmental factor as MS is more common in people who live in cooler climates and less common in people who live in warmer climates near the equator.

MS is most common in younger adults and nearly three-quarters of people affected experience their first symptoms between the ages of 20 and 40 years. Women are two to three times more likely than men to be affected by MS.

What are the symptoms of MS?

MS symptoms depend on which part of the central nervous system is affected and differ for each individual. People with MS are unlikely to experience all of the symptoms but they might experience more than one.

The main symptoms of MS:

- Weakness or numbness in the arms or legs
- Unusual sensations (pins and needles, tingling)
- Visual problems (blurred vision, pain behind the eye)
- Balance, co-ordination and mobility problems
- Muscle spasms
- Fatigue and lack of energy
- Bladder and bowel problems

People with MS might also experience emotional problems, anxiety and depression. Other possible symptoms include pain, hearing problems, sexual problems, memory problems, and cognitive problems (for example, difficulties organising and planning everyday tasks). Speech and swallowing problems are also possible.

Tests and investigations

As a complex and unpredictable condition, MS is not always straightforward to diagnose. MS cannot be diagnosed after just one hospital test and doctors will usually carry out a series of tests and investigations. The symptoms of MS are similar to those of many other conditions which need to be ruled out as part of the process. The first stages of an MS diagnosis will involve checking your medical history and carrying out a thorough neurological examination.

MRI scan

An MRI scan (Magnetic Resonance Imaging scan) produces detailed pictures of the brain using strong magnetic fields and radio waves. The scan can show whether you have any small areas of scarring or damage to the myelin sheath associated with MS. You might also have an MRI scan of your spinal cord. (You might like to read our brain and spine scans fact sheet for further information.)

Evoked potentials

Evoked potentials are a group of tests carried out by neurology specialists to measure how efficiently nerves are transmitting messages (nerve impulses).

The most common test is visual evoked potentials (VEP). A VEP test involves asking someone to look at a particular image (for example, a flashing screen) and measuring how long it takes for nerve impulses picked up by the eye to be transmitted to the part of the brain responsible for vision. Some people with MS experience an abnormally long delay in the transmission of these nerve impulses.

Lumbar puncture

The brain and spinal cord are surrounded by a clear liquid called cerebrospinal fluid (CSF). For some people, the signs of MS are indicated by abnormalities in their CSF.

To take a sample of this fluid, a needle is passed between two vertebrae (spinal bones) at the lower end of the spine into the space containing the CSF. A small amount is drawn off in a syringe and sent to a laboratory where it will be checked for abnormalities.

What are the treatments?

Unfortunately, there is currently no cure for MS. However, different treatments are available. The treatments you might have will depend on your individual situation.

- You might receive treatments for your specific symptoms. For instance, if you have physical symptoms (mobility problems, muscle spasms) you might benefit from physiotherapy, or you might be given specific drug treatments for bladder and bowel problems, muscle spasms, pain, fatigue or depression.
- If you experience an attack of MS symptoms (a relapse) you might be given steroid drugs to help speed up your rate of recovery. Steroids are used to suppress the immune system which is mistakenly attacking the healthy myelin sheath. They are usually given in short courses to reduce the risk of unwanted side effects. Your doctor will discuss with you the possible side effects of steroid treatment.
- You might be given drug treatments to reduce the number of attacks you experience and to slow the progression of MS. These disease-modifying drugs can also reduce the impact and severity of your symptoms. There are different types of disease-modifying drug. Your specialist will discuss the options with you.

Other treatments

Some people affected by MS find complementary and alternative therapies helpful. They are unlikely to provide a specific treatment for your MS but they might help to improve your general well-being.

There are different dietary regimes which purport to be helpful for people with MS, especially diets low in fat. It is worth remembering that everyone can improve their general health and well-being with a healthy, balanced diet.

Future treatments

Researchers are investigating a variety of potential treatments for MS. Some researchers are hopeful that stem cell treatments will be helpful for people with MS. Currently, research into stem cell treatments is only in its initial stages.

Living with MS

Coming to terms with a diagnosis of MS and living with the condition is challenging and will take a lot of adjustment. Although MS is unpredictable, taking an active approach towards managing your condition can help you to understand your situation and to stay positive. This could include:

- Choosing to lead a healthy lifestyle;
- Making informed decisions related to your treatment;
- Keeping a record of your symptoms to help you better understand your MS and adjust your lifestyle and activities to suit;
- Attending a self-management course (see: www.selfmanagementuk.org).

Long-term support

As MS is a long-term condition, it is important that you are in regular contact with your GP and specialist and are able to ask questions or raise your concerns. Your symptoms and treatments should be reviewed regularly. Many people find that the specialist support and advice of an MS Nurse Specialist is helpful. It might also be helpful for you to attend a local support group in your area.

Useful contacts

Brain and Spine Helpline

0808 808 1000

www.brainandspine.org.uk

Run by neuroscience nurses, providing support and information on all aspects of neurological conditions for patients, their families and carers, and health professionals.

MS Society

MS National Centre

372 Edgware Road

London NW2 6ND

0808 800 8000

www.mssociety.org.uk

Support and information on MS. They also run a discussion forum on their website for people affected by MS.

MS Trust

Spirella Building

Bridge Road

Letchworth Garden City

Hertfordshire SG6 4ET

0800 032 38 39

www.mstrust.org.uk

Support and information on MS.

The Brain and Spine Foundation provides support and information on all aspects of neurological conditions. Our publications are designed as guides for people affected by brain and spine conditions - patients, their families and carers. We aim to reduce uncertainty and anxiety by providing clear, concise, accurate and helpful information, and by answering the common questions that people ask. Any medical information is evidence-based and accounts for current best practice guidelines and standards of care.

Brain and Spine Foundation

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Helpline: 0808 808 1000

www.brainandspine.org.uk

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