

## Understanding Multiple Sclerosis

*THIS FACT SHEET explains what multiple sclerosis is, what we know about its cause and who develops it. It describes diagnosis, types of MS, symptoms, treatment and discusses ways of managing the condition.*

### What is Multiple Sclerosis?

Multiple sclerosis (MS) is a condition that affects the central nervous system (the brain and the spinal cord) in a variety of ways. MS may affect a person's mobility, their ability to coordinate muscles or their eyesight. It may impair functions such as bladder control, speech, concentration or memory. MS affects each person differently.

### What Causes MS?

Scientists don't know what causes MS but they do know that it provokes an "auto-immune reaction". This means that the body fails to recognise its own tissue (in this case, myelin tissue) as part of itself and the immune system swings into action to destroy it, as it would any "invader" such as a virus or bacteria.

Most healthy nerve fibres are wrapped in myelin tissue, a fatty substance that insulates the nerves and assists the communication flow between the brain and the body. In MS, the myelin sheath becomes inflamed. Sometimes the inflammation dies down, but if it continues, the myelin is damaged and a scar forms. Scientists have called these scars "plaques" or "sclerosis" (from the Greek word for scar). This process is called demyelination.

The scars can distort or completely block the nerve impulses (the messages to and from the brain and body). The inflammation occurs randomly over time and throughout the central nervous system, causing scarring in many places.

### Who Develops MS?

More than 16,000 Australians have MS. Symptoms usually appear for the first time between the ages of 20 and 50. Women are affected more often than men at a ratio of about 3:1.

MS is also more common in temperate zones. For example in Queensland, MS affects roughly 12 people per 100,000 compared to 76 people per 100,000 in Tasmania.

**Inheriting MS:** Researchers are looking into patterns of inheritance within families. They have found some genetic factors that seem to be involved in MS, but it is as yet unclear whether they are involved in all cases of MS, and whether these factors are sufficient on their own to cause MS. Between 10% and 20% of people with MS also have a relative with the condition.

### Diagnosis

Diagnosing MS can be difficult as there is no single test available. It can only be diagnosed by recording a person's clinical history, then having a medical examination and specific tests. Scanning tests, in particular MRI (Magnetic Resonance Imaging), can reveal scar damage in the brain that may be caused by MS. (See Fact Sheet 3: Tests and Technology).

A confirmed diagnosis may take years if the condition is moving very slowly. This dragged-out process can be very trying for the person with suspected MS and their family.

## Types of MS

There are four main types of MS:

- > Primary progressive
- > Relapsing/remitting
- > Secondary progressive
- > Progressive/relapsing

**Primary progressive:** About 10% of people with MS experience this form, which is the gradual onset of disability that does not recover or reverse.

**Relapsing/remitting:** This is the most common form of MS, about 85% of people start with this form. Symptoms develop suddenly during “attacks” or “episodes”. These may ease off over days, weeks or months or resolve completely. Other attacks may leave persisting problems. The intervals between attacks vary widely, from several weeks to several years apart.

**Secondary progressive:** The relapsing/remitting form of MS develops into secondary progressive MS for many people – the attacks become fewer but the person’s disabilities gradually become more pronounced, with no recovery.

**Progressive/relapsing:** This form of MS is rare and involves the progression of disability together with relapses from the onset.

## Symptoms

MS is unpredictable and no two people will have the same set of symptoms.

Symptoms affect three main categories of function:

- > Motor function
- > Sensory function
- > Cognitive (thinking and behaviour)

**Motor function:** A disturbance in motor function means a disturbance in movement and coordination. For example, walking may become slow, ungainly or staggering. Fine movements may be affected, such as writing, doing up buttons or picking up small objects.

Speech may become slurred or hesitant, tremor might occur in the hands and a person may have difficulty controlling bladder or bowel function. (See Fact Sheet 9: Continence Problems; Fact Sheet 7: Speech and Communication Problems).

MS-specific fatigue can be extremely disabling and people with MS may need to modify what they do and organise their time to manage it. (See Fact Sheet 11: Managing Fatigue).

Some people are also affected by changes in body temperature that may be brought on by a hot shower, becoming overheated from exercise or hot weather. This slows down or stops the transmission of messages along the nerves, temporarily making their symptoms worse until the body temperature falls again. Air conditioning, cooling vests and cool drinks can help.

**Sensory function:** Skin sensations of touch, pain and temperature can be affected so that a person may have areas of numbness or pins and needles. They may find the touch of bed-clothes painfully irritating or have areas on their body where they feel no sensation of hot or cold, in which case they need to take special care around hot water or hot objects to avoid burns.

Sight is often affected and people may experience difficulty with double vision, focussing or coping with harsh lights at night. (See Fact Sheet 12: Vision Problems).

If sensory messages from the limbs are disturbed, the person may not “feel” where their limbs are, which can affect balance.

**Cognitive function:** Scarring in the brain may affect some areas of thinking. For example, some people with MS have difficulty concentrating for prolonged periods, and poor memory can make learning new skills and systems difficult.

A person may have less control over their moods or behaviour. For example, they may cry very easily, develop a shorter fuse over small things or have trouble getting motivated to do things. Depression is also common.

(See Fact Sheet 6: Changes in Thinking and Behaviour).

## Treatment

There is currently no cure for MS. Treatment involves a combination of medication and therapies.

**Medication:** Drugs that moderate the immune system are able to reduce the number of episodes experienced in the relapsing/remitting form of MS and slow the rate at which a person becomes disabled. These drugs are the beta interferons (brand names: Avonex, Betaferon, Rebif) and glatiramer acetate (brand name: Copaxone).

Severe attacks of MS can be treated with steroid medications given either intravenously or orally. This decreases the duration of the attack by reducing inflammation of the myelin tissue.

**Alternative therapies:** Alternative therapies, such as massage, acupuncture, yoga, meditation and chiropractic may complement a person's medical treatment. (See Fact Sheet 5: Assessing Alternative Treatments).

## Managing MS

Much can be done to help people with MS remain independent, comfortable and productive. Managing MS well involves establishing good relationships with a general practitioner (GP) and neurologist who supervise overall care. After diagnosis, it can be difficult to know when to seek help for changes that may or may not be caused by MS – a GP can help determine the best course of action.

**Coping strategies and support:** A variety of health care professionals help to manage the unique, complex and changing needs of a person with MS – everything from employment issues to managing mood swings and bladder problems – as well as the needs of their family and carers.

For example, occupational therapists may discuss home alterations, personal aids and energy-conserving strategies to manage fatigue. Social

workers might discuss home care services or help organise emotional support, such as counselling.

Joining support networks is another excellent way to obtain information while adjusting to the condition.

## What is the Outlook?

MS is rarely fatal. Most people live a normal life-span. While some people become entirely dependent, many remain relatively independent and mobile over many years. There is a terrific amount happening in the world of international research, in which Australia is heavily involved.

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