



## **Education**

### **Multiple Sclerosis**

#### **What is multiple sclerosis?**

Multiple sclerosis (MS) is a disease of the central nervous system (the brain and spinal cord). People who have multiple sclerosis may lose coordination and muscle control. However, many people with multiple sclerosis are only mildly affected by the disease and continue to lead their lives much as they did before their diagnosis.

There are two different patterns of MS symptoms. The more common pattern is episodes of symptoms for days or weeks followed by periods of no symptoms for weeks or months. This type of MS is called relapsing-remitting disease.

The less common pattern is steady worsening of symptoms from the first signs of illness. This is called primary progressive disease.

#### **How does it occur?**

The cause of multiple sclerosis is still unknown. For reasons not yet understood, the fatty substance called myelin, which covers nerve fibers, is damaged in random areas. The myelin normally insulates entire nerve fibers. It helps the conduction of nerve messages to and from the brain. The areas of myelin that are damaged are called plaques. The damage can prevent nerves from sending signals to other body parts. The symptoms of multiple sclerosis depend on where these plaques are in the central nervous system.

Currently, most scientists believe that the loss of myelin is caused by an autoimmune process. This means the body mistakenly reacts to some part of itself as foreign and attacks it. In the case of MS, the body destroys areas of its own myelin.

#### **What are the symptoms?**

Common first symptoms of MS are:

- vague feelings of weakness, clumsiness, or exhaustion
- blurry vision
- one or more areas of skin that feel numb or tingly.

Other possible symptoms include:

- double vision
- weakness in your arms or legs
- muscle stiffness
- dizziness
- loss of bladder control
- depression
- memory loss.

Usually the symptoms come and go unpredictably. The times when you are having symptoms are called episodes. The episodes may last a few days or weeks at a time. The times between episodes, when you are not having symptoms, are called remissions. Many people with MS are able to function quite normally between episodes.

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## How is it diagnosed?

The best test for MS is MRI (magnetic resonance imaging). MRI produces x-ray-like images that are better than other methods for seeing certain areas of the central nervous system. With MRI it is possible to see the places where myelin has been damaged.

If the diagnosis is still uncertain after MRI, your health care provider may do a test that measures how fast your nerves conduct impulses. Also, a sample of fluid from your spine may be analyzed for protein changes that are often found in people who have MS.

More than one MRI may be done over time. Several MRIs may show plaques appearing in different areas of the central nervous system at different times. This confirms the diagnosis of multiple sclerosis.

## How is it treated?

There is not yet a cure for MS. However, treatment with medicine can help shorten episodes of symptoms and increase the time between episodes. For example, steroids may shorten the time an episode of symptoms lasts.

The goals of long-term treatment are:

- to help lengthen the time between episodes of symptoms
- to prevent damage to the nerves.

Drugs that prevent the immune system from attacking the myelin are used to prevent episodes.

- The drugs most commonly used for this purpose are beta interferons.
- A new drug, glatiramer acetate, is being prescribed to reduce the number of attacks in the relapsing-remitting form of the disease.
- A chemotherapy drug called mitoxantrone may be used for MS that is worsening. It is given 4 times a year and must be given into the vein.

There are also medicines that can help control specific symptoms of MS, such as depression, fatigue, urinary symptoms, and tremors or spasms. Ask your health care provider about medicines to help with these symptoms.

Much research is being done to find treatments that work better to prevent MS symptoms and long-term nerve damage.

Getting enough rest is an important factor in treating MS. Always try to get plenty of rest, especially when you are having symptoms.

## How long do the effects last?

You may have many episodes and remissions. Some people never have more than a few mild, infrequent symptoms. However, with time, the episodes may become more frequent or last longer. Some loss of function may continue between episodes. In some cases the disease eventually results in severe disability.

## What kind of ongoing care do I need?

The most important aspect of care is emotional support. You may feel anxiety, anger, and fear. A mental health professional or other counselor may be able to help with the depression that often comes with MS.

Caring for someone with active MS requires a team approach. In addition to doctors (often including a neurologist) nurses, and counselors, other members of your health care team may be a physical therapist, occupational therapist, or social worker. For example, a physical therapist can help you develop strength, coordination, balance, and stamina. The goal is to enable you to be as independent as possible while helping you deal with the intense emotional consequences of a disease that can become disabling.

## What can be done to help prevent multiple sclerosis?

Because the cause of MS is not known, we do not yet know how to prevent it.

For more information, call or write:

National Multiple Sclerosis Society Phone: 800-FIGHT-MS (344-4867) Web site: <http://www.nmss.org> Educational

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materials, local chapters, referrals to doctors, physical therapists, lending library, on-line information specialists.

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