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Myasthenia Gravis

What is myasthenia gravis?

Myasthenia gravis (MG) is an autoimmune disease. It causes weakness in some types of muscles. These are the ones we can control, like those in our arms and legs. It might also affect the muscles we use to breathe. It does not affect muscles that we can't control, like heart muscles. There is no cure for MG. It's a condition that people have for life.

About 1 in 5000 people in the United States has MG.¹ However, many doctors think some cases are not diagnosed. So there may be more cases. People of both genders and all ethnic groups can have MG. It most often develops in young women and older men. But it can strike at any age.

Causes of MG

MG is caused by a problem with nerve cells that send signals to muscle cells. Nerves normally control muscles by sending a signal to the muscle cells. This makes the muscle contract. But in MG, antibodies block the signal. This prevents the muscle cell from contracting. The result is that muscles don't work as they should. They get tired too fast.

Symptoms of MG

People with MG have muscles that become weak when they are used and then improve after rest. In most people, this happens first in the eye muscles. The eyelid might droop or the person might have double vision. When MG only affects the eye muscles, it's called ocular MG. But MG usually affects other muscles too. That is, MG is usually generalized. People with generalized MG may also have:

- Trouble walking
- A change in facial expression
- Trouble chewing or swallowing
- Difficulty breathing
- Slurred speech
- Weakness in the arms, hands, fingers, legs, and neck

Most people with MG have an abnormal thymus. It's a gland in the neck that is part of the immune system. About 20% of people with MG develop a tumor of the thymus called a thymoma.¹ It's usually not cancer. But sometimes it can become cancer.

Most people with MG have a normal lifespan.



What is an autoimmune disease?

It's an illness in which your immune system attacks your own body. Your immune system normally protects you. It does this by making antibodies. These attack harmful substances like viruses. But in an autoimmune disease, your immune system doesn't work as it should. It attacks your own body tissues.

There are many kinds of autoimmune diseases. One kind is MG. Other examples are rheumatoid arthritis and type 1 diabetes. In each case, a different kind of body cell or structure is attacked. Scientists don't know why some people get these kinds of diseases. But they can cause serious damage to the body.

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Factors that can make symptoms worse

These factors may trigger symptoms or make them worse:

- Being stressed
- Being sick
- Being tired
- Having a high fever
- Being in bright sunlight
- Having an operation
- Getting an immunization
- Menstruating
- Taking certain medicines

How doctors treat MG

The symptoms of MG can usually be controlled. With treatment, most people with MG can lead normal or nearly normal lives. Several kinds of medicines are used. These can:

- Strengthen the chemical signal that nerve cells send to muscle cells.
- Reduce the amount of antibodies that the body makes. This kind of medicine may cause major side effects. So it must be used carefully.

An operation to remove the thymus gland can help. It's done when people have a thymoma. But it also helps about half of people with MG who don't have a thymoma.²

Several other procedures can also be used. When a person has severe symptoms, it may help to:

- Use a machine to remove his/her plasma. This is the part of the blood that contains antibodies. The machine replaces the person's plasma with new plasma. This removes the harmful antibodies from the person's body.
- Give the person helpful antibodies. These come from donated blood. They help the immune system work better. They are injected into a vein.

How to take care of yourself if you have MG

- Budget your energy.
- Rest your eyes or lie down briefly a few times a day.
- Work with your doctor to keep your general health good.
- Eat healthy foods from all the major food groups.
- Adjust your eating routine. Try to eat when you have good muscle strength.
- Use safety precautions at home. Install grab bars or railings where they might help.
- Use electric appliances like toothbrushes and can openers to help you.
- Wear an eye patch if you have double vision.
- Consider joining a support group.

References

1. Berrih-Aknin S, Frenkian-Cuvelier M, Eymard B. Diagnostic and clinical classification of autoimmune myasthenia gravis. *J Autoimmun.* 2014;48-49:143-148.
2. National Institute of Neurological Disorders and Stroke. Myasthenia gravis fact sheet. [ninds.nih.gov/disorders/myasthenia_gravis/detail_myasthenia_gravis.htm](https://www.ninds.nih.gov/disorders/myasthenia_gravis/detail_myasthenia_gravis.htm). Updated March 12, 2015. Accessed April 30, 2015.