

Patient information from BMJ

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Myasthenia gravis

Myasthenia gravis causes weakness in many of the body's muscles, including those that control breathing, speaking, and movement. It is a long-term condition with no cure. But there are treatments that can help relieve the symptoms.

What is myasthenia gravis?

Myasthenia gravis is a rare, long-term condition that is caused by the genes you inherit from your parents. It's also what's called an autoimmune condition. This means that the body's immune system isn't working properly.

The immune system normally makes antibodies that fight infections. But in people with myasthenia gravis, the immune system makes antibodies that attack the cells in your own body instead.

This causes weakness in many of the body's muscles which gets worse the more active you are. But it improves after you rest for a while.

The muscles that are most commonly affected are the ones that control the eyes and face, and those that help us to swallow and chew. But any muscle can be affected, including those that help us to breathe.

Myasthenia gravis affects both men and women. It tends to affect men in the middle or later years of life, while in women it appears much earlier.

What are the symptoms?

The main symptom of myasthenia gravis is weakness affecting some muscles. This means that those muscles will get tired very quickly and might not function normally without frequent rest.

People with myasthenia gravis tend to be affected in one of three different ways:

- Weakness in the muscles around the eyes. This can cause drooping eyelids and difficulty controlling facial expressions.
- Weakness in the muscles in the mouth and throat. This can make it hard to speak, chew, and swallow. It can also make it hard to control facial expressions.

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- More general muscle weakness in other areas of the body. This can cause weakness in a particular limb, and problems with breathing.

How is it diagnosed?

Doctors can often diagnose myasthenia gravis just by asking you about your symptoms and examining you. But there are also tests that can help with an accurate diagnosis such as blood tests and tests of your nervous system.

A computed tomography (CT) scan of your chest can spot problems with a small gland called the thymus. The thymus plays a part in the immune system. Most people with myasthenia gravis will have an enlarged thymus.

About 15 in 100 people with myasthenia gravis will have what's called a thymoma.^[1] This is a type of cancer where a tumour develops in the thymus.

Thymomas can usually be removed successfully in surgery. This removes the cancer, but it does not cure myasthenia gravis. So you will probably still need treatment.

Your doctor might also check how well your lungs are working. This can help to tell how likely you are to have what's called a **myasthenic crisis** at some point. This is when the muscles temporarily become so weak that breathing becomes difficult.

If you have a myasthenic crisis you will need urgent medical treatment to help you breathe. Your doctor should discuss with you how to spot the symptoms and what to do if it happens.

What treatments work?

The treatment for myasthenia gravis depends on how serious your symptoms are. With the right care, most people with the condition live normal lives. People with mild symptoms that don't happen often usually don't need any treatment at all.

Medicines

If you have mild or moderate symptoms, your doctor will probably suggest you take medicines to help control them. These might include:

- Cholinesterase inhibitors. These medications help your muscles to work.
- A specific type of steroid called corticosteroid. These are used to reduce inflammation (swelling). They are especially helpful in people whose eyes are affected by myasthenia gravis.
- Other medicines such as immunosuppressants (which try to calm your immune system) and rituximab (a type of antibody medicine).

All medicines can cause side effects in some people. Your doctor should discuss these with you. If you get side effects, tell your doctor. There may be other options if you do get side effects.

Surgery

Most people with myasthenia gravis do better after an operation called a **thymectomy**.

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This is surgery to remove the thymus (a small gland found in the chest). In people with myasthenia gravis, the thymus is usually larger than normal.

Removing the thymus is a helpful treatment even if there is no thymoma (cancer). So it's recommended for most people with myasthenia gravis.

After a thymectomy, symptoms are usually less severe. But you might not feel the full benefit for several months or even years after the operation.

Your doctor will let you know if you should have a thymectomy. This may depend on what type of antibodies you have and whether you are in the early stage of the condition. It will also depend on which treatments you have tried first.

Thymectomy is a helpful treatment option but there are risks with surgery. These include damage to nearby nerves, infection, and pulmonary embolism (a blood clot in the lungs).

Treatments for severe symptoms

If your symptoms are severe, your doctor might suggest other treatments.

Plasma exchange is a treatment where your blood is filtered through a machine that removes the antibodies that are attacking your immune system.

This treatment is often used for people who have severe symptoms and need treatment in hospital. You start to feel the benefits very quickly, but they only last for a few weeks.

IVIG. This stands for **intravenous immunoglobulin**. It helps your immune system to work normally. Like plasma exchange, it is often used as a short-term treatment in emergencies.

Other medicines that can help include ones called **monoclonal antibodies**. This is a longer-term treatment that works by changing the way the immune system works.

What will happen to me?

Myasthenia gravis doesn't usually affect how long people live, and most people with the condition live normal lives.

Whatever treatment you have, you should have regular check-ups in a neurology clinic, with a doctor who specialises in conditions that affect the nervous system (a neurologist).

How often you will need to see the neurologist will depend on how severe your symptoms are.

Many people find that they get much better with treatment, although this can take years.

You might also have periods when your symptoms get worse temporarily. This can be caused by many things, such as infections. If you feel yourself getting suddenly worse, get medical help straight away. Severe episodes may be due to what's called a myasthenic crisis. This is a **medical emergency** because it causes difficulty breathing. You may need help with breathing using a ventilator if this happens.

References

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1. Romi F. Thymoma in myasthenia gravis: from diagnosis to treatment. *Autoimmune Dis.* 2011;2011:474512.

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