

# Myasthenia Gravis

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## What is myasthenia gravis?

**Myasthenia** [mahy-uh-s-THÉE-nee-uh] **gravis** is a disease where the body's immune system attacks the connection between the nerve and muscle, causing weakness.

## What causes it? What are the risk factors?

Myasthenia gravis is an **autoimmune** [aw-toh-i-MY00N] disease. It occurs when the parts of the immune system that normally attack bacteria and viruses (antibodies) accidentally attack the connection between the nerve and muscle, also known as the **neuromuscular** [noor-oh-MUHS-kyuh-ler] **junction**.

The antibodies block a chemical called **acetylcholine** [uh-seet-I-KOH-leen], which is released by the nerve ending to activate the muscle, creating movement. Blocking this chemical causes weakness.

Risk factors for myasthenia gravis include having a personal or family history of autoimmune diseases. Men over 60 and women under 40 are at higher risk.

## What are the symptoms?

The most common symptoms are drooping eyes, double vision, difficulty chewing, choking on food, and muscle weakness. Symptoms may get worse as the day goes on, or after any exercise of the muscles such as strenuous physical activity (for the large muscles), eating (for chewing/swallowing muscles), or reading (for the eye muscles). Mild symptoms may get better with rest.

Severe symptoms include having trouble breathing and not being able to swallow. This becomes more likely when rest fails to resolve mild symptoms.

## How is it diagnosed?

Your doctor will ask you about your symptoms, perform a physical examination, and review all of your blood work and other tests. More blood work might be ordered to look for signs that the immune system might be attacking the muscles. A doctor may also perform a nerve conduction study known as **electromyography** [ih-lek-troh-mahy-OG-ruh-fee] or EMG. An EMG records the electrical activity of muscles.

## What are the complications?

If symptoms become severe, you may not be able to breathe normally or swallow saliva or food. This results in **aspiration** [as-puh-REY-shuhn], where food or saliva goes into your airway. Serious complications like these can result in injury or even death if left untreated.

## How is it treated?

Mild symptoms are treated with a medicine called **pyridostigmine** [pih-rid-oh-STIG-meen], which increases your bodies levels of acetylcholine. More severe or persistent symptoms are treated with medicines that help control the immune system. Severe episodes may be treated with **immune globulins** [GLOB-yuh-lins] (IVIG) or **plasma exchange**, a treatment for removing the antibodies from the blood.



## When should I call a doctor?

Call your doctor if you experience:

- Symptoms that do not resolve with rest
- Severe muscle weakness
- Difficulty breathing or swallowing that is worse than normal

If you have trouble breathing or choke badly, you might need to call 911 and go directly to the emergency room.

You can help reduce myasthenia gravis symptoms by making lifestyle changes such as:

- Scheduling frequent rest periods
- Eating small mouthfuls of soft foods and taking your time chewing
- Staying out of the heat and avoiding unprotected exposure to cold
- Trying to stay free of stress
- Using an eye patch when double vision is bothersome.
- Avoiding alcohol
- Washing your hands, avoiding people who are sick, and getting a yearly flu shot
- Asking your doctor if any medicines you are taking could make your condition worse



## Questions for my doctor:

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