

# Myasthenia Gravis

**M**yasthenia gravis is an autoimmune disease that gradually causes muscles to lose their strength and function. Autoimmune diseases are caused by the body making substances called **antibodies** that attack a person's own tissues. In myasthenia gravis, these antibodies are made against **receptors** in the **neuromuscular junction** (the area where nerve transmission makes a muscle do its work). Myasthenia gravis affects individuals differently, and each person may present with weakness in different sets of muscles. The April 20, 2005, issue of *JAMA* includes an article about diagnosing myasthenia gravis.

## SYMPTOMS OF MYASTHENIA GRAVIS

- Muscle weakness
- Double vision
- Weak eyelids
- Difficulty speaking or smiling
- Difficulty chewing and swallowing

Muscle weakness related to myasthenia gravis usually occurs after the muscle group is used and lessens if the muscle group has some rest. This is called **fatigable weakness** and is an important characteristic for the diagnosis of myasthenia gravis.

## DIAGNOSIS

Your doctor will take a medical history, asking especially about the type of muscle weakness, what makes it better, and what makes it worse. A physical examination may reveal weakness of the extremities, the eye muscles, or difficulty in facial expression. Several tests may be used to help diagnose myasthenia gravis:

- Ice pack or rest test (simple procedures that temporarily improve eyelid drooping)
- **Edrophonium test** (a medication given through an intravenous line, temporarily improving strength in patients with myasthenia gravis)
- Blood tests may show antibodies to the receptor at the neuromuscular junction
- Nerve conduction studies may show fatigable weakness in individual muscle groups

## TREATMENT

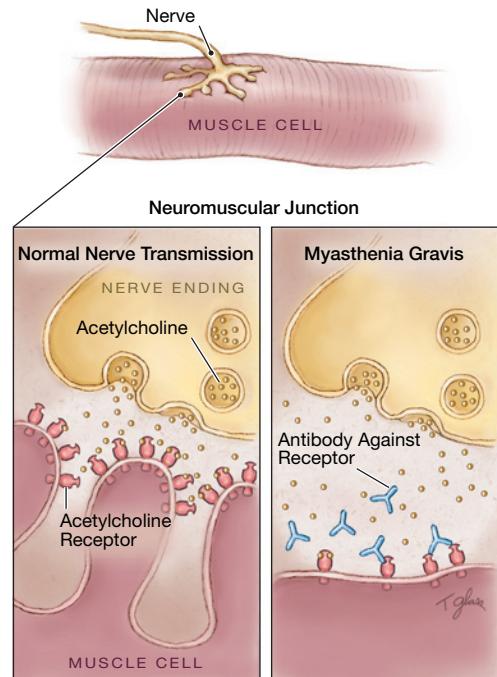
Symptoms of myasthenia gravis can usually be improved with medications that increase the amount of **acetylcholine** (a neurotransmitter) at the neuromuscular junction. Treatments involving the immune system include injections of intravenous immunoglobulin, immunosuppressive medications, and **plasmapheresis** (removal of antibodies from the blood). If an individual's myasthenia is found to be related to abnormalities in the **thymus gland** located at the base of the neck underneath the breastbone (**sternum**), a **thymectomy** (surgical removal of the thymus gland) may help to improve the symptoms. When **respiratory** (breathing) muscles fail, this is called a **myasthenic crisis**. This type of respiratory failure is an emergency. It may require intensive care and use of a ventilator to assist breathing. Some factors leading to a myasthenic crisis include infection, fever, medication effects, or even stress.

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- American Academy of Neurology  
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- Myasthenia Gravis Foundation of America  
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Sources: National Institute of Neurological Disorders and Stroke; American Academy of Neurology; Myasthenia Gravis Foundation of America

