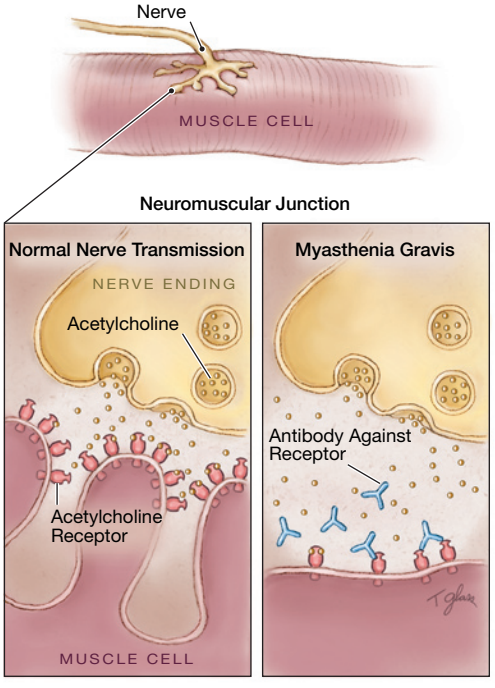
Myasthenia Gravis

Myasthenia 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.

FOR MORE INFORMATION

- National Institute of Neurological Disorders and Stroke
  800/352-9424
  www.ninds.nih.gov
- American Academy of Neurology
  800/879-1960
  www.aan.com
- Myasthenia Gravis Foundation of America
  800/541-5454
  www.myasthenia.org

INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page link on *JAMA*'s Web site at www.jama.com.

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

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