

What Is Myasthenia Gravis?

Myasthenia gravis is a rare autoimmune disorder that causes muscle weakness.

Myasthenia gravis is caused by antibodies that affect transmission of nerve signals to muscles, resulting in decreased muscle contraction. Individuals with myasthenia gravis sometimes have an enlarged thymus, a gland located in the chest that is involved with immune function, or a tumor in the thymus gland (**thymoma**).

Who Is Affected by Myasthenia Gravis?

Myasthenia gravis affects 10 to 20 people per 100 000 and is most common in women younger than 40 years and men older than 60 years. Newborns born to pregnant individuals with myasthenia gravis may develop symptoms of myasthenia gravis that typically resolve within a few months. Symptoms of congenital myasthenia gravis, a rare form of the disease that is an inherited disorder, develop soon after birth or in early childhood.

Symptoms of Myasthenia Gravis

Myasthenia gravis can cause muscle weakness of the eyes, face, throat, neck, diaphragm (the main muscle used in breathing), arms, and legs. Symptoms may include double vision, eyelid drooping, slurred or nasal speech, difficulty chewing, choking with swallowing, shortness of breath, and difficulty raising the arms, getting up out of a chair, or climbing stairs.

Two-thirds of individuals with myasthenia gravis initially only have eye muscle weakness. However, after 2 to 3 years, up to 75% develop weakness in additional muscles. The weakness in myasthenia gravis worsens with activity and improves with rest, so patients typically have more muscle weakness later in the day and with exercise. Heat, illness, and certain medications can increase muscle weakness in patients with myasthenia gravis.

What Is Myasthenic Crisis?

Myasthenic crisis is a medical emergency that involves severe weakness of breathing muscles. These patients need close monitoring in an intensive care unit and often require mechanical ventilation. Myasthenic crisis may be triggered by various conditions (such as infection, surgery, or stress) or certain medications, but about 50% of cases do not have a clear cause. Approximately 15% to 20% of individuals with myasthenia gravis develop a myasthenic crisis at least once in their life.

Diagnosis and Treatment of Myasthenia Gravis

Myasthenia gravis may be diagnosed by physical examination findings, myasthenia gravis-specific autoantibodies (present in most but not all patients), and specialized tests of nerve and muscle function called nerve conduction studies and electromyography. Indi-

Myasthenia gravis is an autoimmune condition that causes muscle weakness.

Early symptoms often include

Eyelid drooping and/or double vision caused by eye muscle weakness

Other symptoms may include

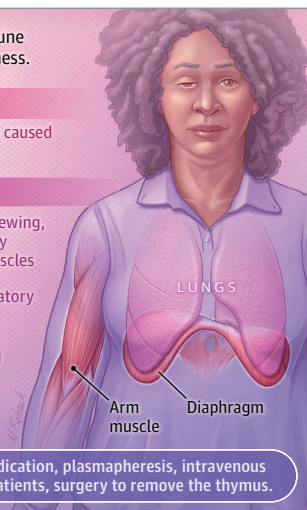
Slurred or nasal speech, difficulty chewing, or choking with swallowing caused by weakness of the facial and throat muscles

Shortness of breath caused by respiratory muscle (diaphragm) weakness

Difficulty lifting up the arms, getting out of a chair, and/or climbing stairs due to limb muscle weakness



Treatment options include medication, plasmapheresis, intravenous immunoglobulin, or in some patients, surgery to remove the thymus.



Individuals diagnosed with myasthenia gravis should have chest computed tomography (CT) or magnetic resonance imaging (MRI) to assess for an enlarged thymus or thymoma.

Myasthenia gravis may be treated with various medications (cholinesterase inhibitors, monoclonal antibodies, and/or immunosuppressive drugs). Patients with severe symptoms may receive plasmapheresis, a procedure that removes antibodies from the blood, or intravenous immunoglobulin, an injection of antibodies from healthy donors. In cases in which surgical removal of the thymus is necessary, patients may have less muscle weakness, and about half have complete remission of myasthenia gravis symptoms after surgery.

Some patients with myasthenia gravis who have eye muscle weakness may benefit from special prism eyeglasses for double vision, eyeglass frames with a bar to support a droopy eyelid, or surgery to repair the eyelid or realign the eyes.

Prognosis of Myasthenia Gravis

Individuals with myasthenia gravis typically have a normal life span. Some patients experience temporary or permanent remission of muscle weakness and may be able to stop taking medications for myasthenia gravis.

FOR MORE INFORMATION

National Institute of Neurological Disorders and Stroke
www.ninds.nih.gov/health-information/disorders/myasthenia-gravis

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