MYASTHENIA GRAVIS & LAMBERT-EATON SYNDROME

AUTOANTIBODY EVALUATIONS TO EXPEDITE DIAGNOSIS AND TREATMENT
WHAT ARE MYASTHENIA GRAVIS & LAMBERT-EATON SYNDROME?

Myasthenia gravis and Lambert-Eaton syndrome are autoimmune disorders of neuromuscular transmission caused by antibodies binding to extracellular muscle membranes and ion channels in nerve, respectively. In myasthenia gravis, antibodies bind to the acetylcholine receptors or the muscle-specific kinase (MuSK) antibody in the muscle membrane. In Lambert-Eaton syndrome, antibodies bind to voltage-gated calcium channels in nerve terminals that regulate acetylcholine release.

CLINICAL DIAGNOSIS & NEOPLASTIC ACCOMPANIMENTS

MYASTHENIA GRAVIS
Characteristic findings are weakness and fatiguability that are improved by rest or anticholinesterase medication. EMG demonstrates decrement in compound muscle action potential (CMAP) during repetitive-motor nerve stimulation. Chest CT or MRI may reveal thymic enlargement, thymoma, or thymic carcinoma.

Other neoplastic accompaniments other than thymoma include gynecological cancers, prostate cancer, breast cancer, bladder cancer, and lung cancer.

LAMBERT-EATON SYNDROME
Characteristic clinical findings include proximal weakness, sometimes including craniofacial involvement. This can be improved by brief exercise. Limited dysautonomia is frequently encountered, and this can include dry mouth and eyes, impaired sweating, and erectile dysfunction. The EMG findings demonstrate baseline CMAP reduction and facilitation of the CMAP after brief exercise or high-frequency nerve stimulation.

Neoplastic accompaniments include small-cell lung carcinoma in about 90% of paraneoplastic cases.

ALGORITHMIC APPROACH TO DIAGNOSIS

Autoantibody profiles aid the diagnosis of myasthenia gravis and Lambert-Eaton syndrome. However, characteristic clinical and electrophysiological features are also required for the diagnosis. Seronegativity does not exclude the diagnosis.

Our diagnostic algorithms consist of tests that are always performed, and then additional testing is performed depending on the initial results. The additional testing in that setting involves looking for other antibody markers, which would support a diagnosis of myasthenia gravis or thymoma.

ALGORITHMS AVAILABLE FOR MYASTHENIA GRAVIS & LAMBERT-EATON SYNDROME:

- Myasthenia Gravis Evaluation with MuSK Reflex
- Myasthenia Gravis: Adult Diagnosis
- Myasthenia Gravis: Pediatric Diagnosis
- Myasthenia Gravis: Thymoma Diagnosis
- Myasthenia Gravis/Lambert-Eaton Syndrome Diagnosis

Our laboratory-driven algorithms, based on proven Mayo Clinic diagnostic approaches, are available at: mayomedicallaboratories.com/algorithms
EVALUATIONS AVAILABLE

- Myasthenia Gravis Evaluation with MuSK Reflex, Serum (Mayo ID: MGRM)
- Myasthenia Gravis (MG) Evaluation, Adult (Mayo ID: MGA1)
- Myasthenia Gravis (MG) Evaluation, Pediatric (Mayo ID: MGP1)
- Myasthenia Gravis (MG) Evaluation, Thymoma (Mayo ID: MGT1)
- Myasthenia Gravis (MG)/Lambert-Eaton Syndrome (LES) Evaluation (Mayo ID: MGL1)

STAND-ALONE TESTING

- Acetylcholine Receptor (Muscle AChR) Binding Antibody, Serum (Mayo ID: ARBI)
- Striational (Striated Muscle) Antibodies, Serum (Mayo ID: STR)
- Muscle-Specific Kinase (MuSK) Autoantibody, Serum (Mayo ID: MUSK)

MYASTHENIA GRAVIS EVALUATIONS

ANTIBODIES EVALUATED

<table>
<thead>
<tr>
<th>Antibody Evaluated</th>
<th>MGA1</th>
<th>MGRM</th>
<th>MGP1</th>
<th>MGL1</th>
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<tbody>
<tr>
<td>ACh Receptor (Muscle) Binding Ab</td>
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<td>ACh Receptor (Muscle) Modulating Ab</td>
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TAT: 3d

Test Code: MGA1, MGRM, MGP1, MGL1, MGT1

KEY

- Antibody Evaluated
- Reflex-Only

Follow-up testing is available for individual antibodies using Mayo Test ID: PNEFS and PNEFC
TAP INTO THE EXPERTISE OF MAYO CLINIC

The Mayo Clinic Neuroimmunology Laboratory was the first to introduce comprehensive serological evaluations to aid the diagnosis of neurological autoimmunity. The laboratory continues to discover and clinically validate novel autoantibody profiles that inform neurological decision-making and guide the search for cancer.

The clinical and research activities of the Mayo Clinic Neuroimmunology Laboratory focus on autoimmunity affecting the brain, optic nerve, retina, spinal cord, autonomic and somatic nerves and muscle. The neuroimmunology laboratory complements Mayo Clinic’s Autoimmune Neurology Clinic.

FOR MORE INFORMATION ABOUT AUTOIMMUNE NEUROLOGY TESTING
MayoMedicalLaboratories.com/neurology