NEUROMYELITIS OPTICA (NMO) SPECTRUM DISORDERS
AQUAPORIN-4-IgG CELL-BINDING ASSAYS OFFER INCREASED SENSITIVITY AND SPECIFICITY
WHAT IS NEUROMYELITIS OPTICA (NMO)?

Neuromyelitis optica (NMO) is an inflammatory, demyelinating disease of the central nervous system. It is characterized by severe relapsing attacks of optic neuritis and transverse myelitis which, unlike the attacks in multiple sclerosis, commonly spare the brain in the early stages.

The spectrum of NMO was traditionally restricted to the optic nerves and the spinal cord. However, since Mayo Clinic physician Dr. Vanda Lennon discovered an antibody called aquaporin-4 (AQP4), which targets the water channel on astrocytes, a much broader category called NMO spectrum disorders has evolved and can include patients with:

- Single or recurrent episodes of optic neuritis who test positive for AQP4-IgG
- Single or recurrent episodes of transverse myelitis who test positive for AQP4-IgG

THE IMPORTANCE OF EARLY & ACCURATE DIAGNOSIS

DIFFERENTIATING BETWEEN NMO AND MULTIPLE SCLEROSIS

Although NMO spectrum disorders have very similar clinical and radiologic characteristics to multiple sclerosis (MS), the diseases are treated very differently.

- A majority of NMO patients, typically women, are initially misdiagnosed with MS
- NMO is treated by immunosuppressant therapy and MS is treated by immunomodulation therapy, which may worsen NMO

STOP THE ATTACKS. STOP THE DISABILITY.

Unlike MS, the neurological disability caused by NMO spectrum disorders is based on the number of attacks rather than a progressive phase of the illness.

- Initiating therapy early in the course to eliminate recurrence of attacks will minimize patient disability
- If not treated appropriately, within 5 years, 50% of NMO patients lose functional vision in at least 1 eye or are unable to walk

IF NOT TREATED APPROPRIATELY, WITHIN 5 YEARS, 50% OF NMO PATIENTS LOSE FUNCTIONAL VISION IN AT LEAST 1 EYE OR ARE UNABLE TO WALK
NEW METHOD FOR TESTING AVAILABLE AT MAYO CLINIC

Mayo Clinic studies, involving thousands of patients, have found the cell-based AQP4 antibody assay to be more sensitive and specific than ELISA methods. The improved sensitivity and specificity of the AQP4 test offered by Mayo Medical Laboratories will assist clinicians in distinguishing early-stage NMO spectrum disorders from MS.

**WHEN TO ORDER THIS TEST**

- **SINGLE EPISODE OF OPTIC NEURITIS**
  - **CONSIDER ORDERING**
  - AQUAPORIN-4-IgG CELL-BINDING ASSAY

- **LONG SPINAL CORD LESION**
- **SHORT SPINAL CORD LESION**
- **MULTIPLE EPISODES OF OPTIC NEURITIS**
  - **DEFINITELY ORDER**
  - AQUAPORIN-4-IgG CELL-BINDING ASSAY

**WHAT TESTS SHOULD BE ORDERED?**

- Neuromyelitis Optica (NMO)/Aquaporin-4-IgG Cell-Binding Assay, Serum* (Mayo ID: NMOCS)
  - TAT: 2 days negative / 3 days positive
- * Serum is generally more sensitive than CSF for detection of NMO/Aquaporin-4-IgG
- Neuromyelitis Optica (NMO)/Aquaporin-4-IgG Cell-Binding Assay, CSF (Mayo ID: NMOCC)
  - TAT: 2 days negative / 3 days positive

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### RECOMMENDED

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5x **THE LIKELIHOOD HAVING A FALSE-POSITIVE RESULT WITH ELISA METHODOLOGY IS AT LEAST 5X GREATER WHEN COMPARED WITH THE Mayo Clinic CELL-BINDING ASSAY**

EXPERTISE AT 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 are focused 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 NMO TESTING, VISIT

MayoMedicalLaboratories.com/NMO