

WHAT IS MOG ANTIBODY-ASSOCIATED DEMYELINATION?

Myelin oligodendrocyte glycoprotein (MOG) antibody-associated demyelination is an immune-mediated inflammatory process that affects the central nervous system (brain and spinal cord). MOG is a protein that exists on the outer surface of cells that create myelin (an insulating layer around nerve fibers). In a small number of patients, an initial episode of inflammation due to MOG antibodies may be the first manifestation of multiple sclerosis (MS). Most patients may only experience one episode of inflammation, but repeated episodes of central nervous system demyelination can occur in some cases.

WHAT ARE THE SYMPTOMS?

- **Optic neuritis** (inflammation of the optic nerve(s)) may be a symptom of MOG antibody-associated demyelination, which may result in painful loss of vision in one or both eyes.
- **Transverse myelitis** (inflammation of the spinal cord) may cause a variety of symptoms that include:
 - **Abnormal sensations.** Numbness, tingling, coldness or burning in the arms and/or legs. Some are especially sensitive to the light touch of clothing or to extreme heat or cold. You may feel as if something is tightly wrapping the skin of your chest, abdomen or legs.
 - **Weakness in your arms or legs.** Some people notice that they're stumbling or dragging one foot, or heaviness in the legs. Others may develop severe weakness or even total paralysis.
 - **Bladder and bowel problems.** This may include needing to urinate more frequently, urinary incontinence, difficulty urinating and constipation.
- **Acute disseminated encephalomyelitis (ADEM)** may cause loss of vision, weakness, numbness, and loss of balance, and altered mental status.

HOW IS IT DIAGNOSED?

- **Magnetic resonance imaging (MRI) scan.** An MRI scan uses a magnetic field and pulses of radio wave energy to make pictures of your body. During an MRI to check for optic neuritis, you might receive an injection of a contrast solution to make the optic nerve and other parts of your brain more visible on the images.
- **Blood tests.** A blood test is available to check for antibodies against MOG.

WHAT CAUSES MOG ANTIBODY DISEASE?

The exact cause of this disease is unknown. It's believed to develop when the immune system mistakenly targets the substance covering your optic nerve (myelin), resulting in inflammation and damage to myelin, which normally helps electrical impulses travel across neurons.

HOW IS IT TREATED?

The symptoms produced by MOG antibody-associated disease usually improve and resolve over time. In some cases, intravenous and/or oral steroids are used to help reduce inflammation. Steroid treatment is usually given by vein (intravenously). Intravenous steroid therapy may help speed recovery.

When steroid therapy fails and severe symptoms persist, intravenous immunoglobulin (IVIG) or plasma exchange therapy might help. In patients who develop recurrent disease, long-term immunosuppression may be necessary. For this reason, close clinical monitoring is always warranted following an episode of demyelination due to MOG antibody-associated disease.