Understanding How Doctors Test for MS

by MARIANNE BROWN

How to Test for MS

MS is an autoimmune disorder that affects the central nervous system (the spinal column and brain). It's a lifelong condition that can sometimes cause serious disability, although occasionally it can be mild. Here you will learn about how to test for MS and how doctors go about diagnosing it.

MS Symptoms

This condition can cause a wide range of symptoms. The main ones include:

- Fatigue
- Difficulty walking
- Vision problems, such as blurred vision
- Problems controlling the bladder
- Numbness or tingling in different parts of the body
- Muscle stiffness and spasms
- Problems with balance and coordination
- Problems with thinking, learning, and planning

Types and Causes of MS

MS starts with a gradual progression or by relapsing intermittent attacks.

The causes of MS are unknown. Researchers conclude it may be generic or caused from environmental factors. There is currently no cure, but treatments can reduce symptoms

When Should You Visit Your Doctor?

As we discussed earlier, there are many symptoms of MS, but there is a particular symptom that is cause for extra concern. If you experience regular sensations of pins and needles, or numbness in parts of the body quite often, then this is the catalyst for many people to visit their doctor.

When and How is MS Diagnosed?

According to research, MS is the most common cause of disability in younger adults. It is commonly diagnosed when a person is in their 20s and 30s, but it can develop at any age. It is more common in women than in men.

Unfortunately, there is no single test for diagnosis. Your doctor will talk to you about your family's medical history, your environment, job role, your symptoms, and test for other conditions first. It is important to rule out other

conditions/disorders prior to conducting different tests if MS is suspected.

I find it a useful to keep a diary to log symptoms with the times of day they occur, activities prior and during, how long it lasts, and the impact it has on my body. I also rate symptom effects. For example, I would rate 10 for the worst, ranging through to 1 for extremely mild. My doctor found this useful, and it may enable a quicker diagnosis.

Keep in mind, many other conditions can mimic MS:

- Infectious diseases like syphilis, Lyme disease, or HIV
- Autoimmune diseases like systemic lupus erythematosus, sarcoidosis, or Sjogren's syndrome
- Vitamin B12 deficiency
- Structural problems in the spine, such as a herniated disc
- Genetic disorders like leukodystrophies
- Brain or spinal cord tumor
- Rare hereditary disorders
- Some cancers

Neurological Exam

Your doctor will most likely arrange a neurological exam before deciding whether you meet the diagnosis criteria. Your doctor will test co-ordination and using various instruments, to look for certain symptoms:

- Function of the cranial nerves (these control the senses, as well as how you talk and swallow)
- Coordination
- Strength
- Reflexes
- Sensation

Blood Tests

These are used to rule out other conditions before you decide to continue with the specific MS tests, as it cannot diagnose MS.

Magnetic Resonance Imaging (MRI)

MRIs uses radio waves and magnetic fields to check on relative water content in the tissues within the body and spot irregularities. MRIs are considered the best test for diagnosing MS, as brain lesions appear in more than 95% of people with this condition.

MRIs will also be used to provide images of the brain and spinal cord. A special contrast material (gadolinium) injection is usually administered at the time of the scan, as it reacts to areas of inflammation and will "light up" when a lesion is active.

They look for something called demyelination. This a layer that protects the nerve fibers. It is called myelin and it is fatty and repels water. If the myelin is damaged, the fat content reduces, or can be stripped away completely. The area will hold more water and can be detected using this type of imaging.

MRIs are completely painless. I have had around 12 MRIs in my lifetime. If you are nervous about having your brain scanned, as I was, speak to your doctor about sedation.

Lumbar Puncture (Spinal Tap)

A hollow needle is inserted into the lower back, between the vertebrae and into the spinal canal. Then, a sample of cerebrospinal fluid (CSF) is taken for testing.

The procedure takes about 30 minutes under a local anesthetic. The test will look for signs of MS:

- Elevated levels of antibodies called IgG antibodies
- Proteins called oligoclonal bands
- An unusually high amount of white blood cells

The white blood cells in the spinal fluid can be up to seven times higher in someone with MS. It's estimated that only 5% to 10% of people with MS do not show any abnormalities in their CSF.

Evoked Potential Test

This measures the electrical activity in the brain when stimulated and is monitored by using scalp electrodes.

Your specialist checks for impaired transmissions along the optic nerve pathways (optic neuritis). Retinal disorders will be excluded before linking any impairment to MS.

New Tests (Under Development)

A company called IQuity released a blood test, called IsolateMS, to help diagnose this condition. Also, a blood test shows the potential to help predict the progression in MS.

According to a recent study in Norway, a protein called neurofilament light chain, or serum NF-L, is a promising biomarker that can show disease activity and treatment response in relapsing-remitting MS.

The research states that the serum NF-L proteins can be released following axonal damage, and this damage occurs alongside demyelination. But it has also been detected in areas void of demyelinating lesions.

The study evaluated the potential of serum NF-L as a biomarker before and during interferon therapy. It was found that serum NF-L is connected to the risk of MS after optic neuritis, a common MS symptom.

The study also found a connection between serum NF-L and a patient's reactions to some MS treatments.

The research is trying to establish noninvasive treatments for managing the progression of MS, helping to tailor treatments, and customizing treatments to each individual.