How Is a Multiple Sclerosis Diagnosis Made?

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How Is Multiple Sclerosis Diagnosed?

Obtaining a diagnosis for multiple sclerosis (MS) can be time-consuming and frustrating.

Why?

According to the National Multiple Sclerosis Society, “At this time, there are no symptoms, physical findings or laboratory tests that can, by themselves, determine if a person has MS.” This means that physicians must use a combination of tools, as well as rule out other possible diagnoses before a diagnosis of MS can be made.

Some people are diagnosed with MS rapidly. Other people require repeat testing, and a diagnosis of MS takes a much longer time.

Nevertheless, achieving a definitive diagnosis as quickly as possible is important – not only is it essential for peace of mind, but beginning treatment in the earliest stage possible can prevent permanent neurological damage.

So, what does it take to achieve an MS diagnosis?

MS Symptoms

First of all, symptoms are typically present. Symptoms are what bring people to their physician in the first place – to discuss their concerns and seek a diagnosis.

The problem with MS symptoms? There is a laundry list – and no two people have the same symptoms.

Also, the symptoms are unpredictable – they may fluctuate over time. One person may have one symptom for a period of time, then have five symptoms, while another person may have five symptoms continuously.

The unpredictability can make MS challenging to diagnose.

MS symptoms include:

- Fatigue: this is one of the most common symptoms; it occurs in more than 80% of MS sufferers and can interfere with day-to-day life.
- Numbness or tingling: this is often of the first symptoms experienced by those with MS.
- Weakness: this is a result of deconditioning of muscles or nerve damage to muscles.
- Vertigo
- Sexual problems: this can be a result of damage to the central nervous system, as well as fatigue, spasticity, and psychological factors.

- Pain: about half of people with MS have chronic pain.
- Emotional changes
- Cognitive changes
- Bowel problems: constipation is common in people with MS.
- Bladder problems: bladder dysfunction occurs in about 80% of people with MS.
- Vision problems: changes in vision is one of the first symptoms for many people.
- Spasticity: stiffness and involuntary movement of the limbs, especially the lower extremities, is common.
- Gait difficulties: this can be multifactorial – related to weakness, spasticity, fatigue, and loss of balance.

Criteria for Diagnosis

There are specific criteria that must be met for a MS diagnosis to be achieved. We will discuss the methods in which the physician determines this criterion later on. The criteria are as follows:

- There must be evidence of damage in a minimum of two separate areas of the central nervous system (CNS) – this includes the brain, spinal cord, and optic nerves **AND**
- There must be evidence that damage occurred at least two different points in time **AND**
- All other potential diagnoses must be ruled out.

The International Panel on the Diagnosis of Multiple Sclerosis has updated the criteria various times over the past several years. The criteria are now referred to as the “Revised McDonald Criteria” and have been designed to make the diagnostic process more efficient.

Physician Examination

Before your physician can send you for various diagnostic tests, he or she will perform a physical examination. Their examination will determine if you should have further testing.

Your physician should start your appointment by completing a medical history – the history should include details about your personal history, as well as a family history. It should also include questions about your symptoms – when the symptoms began, how long they have been occurring, and any details that you feel are pertinent because some of the symptoms are subjective and can’t be observed by the physician.

Your physician will also perform a physical examination. It will include various neurological and muscular tests to determine the health of your nerves and muscles. He or she will be comparing both sides of the body, looking for areas of weakness, problems with vision, speech, and uncoordinated movements.

If there are any deficiencies, you’ll likely be sent for further testing.

Diagnostic Tests

Tests that will likely be ordered are the following:

- **Magnetic resonance imaging (MRI)** – An MRI detects changes in the brain and spinal cord, such as inflammation. However, the inflammation that an MRI may show can also be common with other conditions, such as hypertension, diabetes, as well as normal aging. This is why other testing must be performed in conjunction with MRIs. It is also important to note that a “clean” MRI does not always rule out MS; an estimated 5% of people have lesions that do not show on an MRI.
- **Lumbar puncture** – A lumbar puncture, which may also be called an “LP” or a “spinal tap,” is a procedure where cerebrospinal fluid (CSF) is drawn out of the spinal column. This fluid is then examined for disease. For someone with MS, there is often higher levels of proteins in the CSF.
- **Evoked potentials** – Evoked potentials, an electrical test of the nerves, “…can help doctors confirm if the condition has affected the parts of your brain that help you see, hear, and feel.” Wires are placed on the scalp to test the brain’s response to various activities that excite the nervous system.
- **Blood tests** – Blood tests are used to rule out other conditions that may cause similar symptoms to MS,

such as lupus, Sjogren's, vitamin and mineral deficiencies, and other inherited diseases. No single blood test is used to diagnose MS.

Treatment for MS

There is no cure for MS at this time. The current treatment plan for MS is to recover as quickly as possible from attacks, slow its progression, and manage symptoms.

Because treatment of MS is a multifaceted approach, so are the drugs that are used to treat it!

If you're having an **MS attack**, chances are your doctor will present you with one of two options – corticosteroids or plasmapheresis. Corticosteroids, such as oral prednisone or intravenous methylprednisolone, help to reduce inflammation of the nerves. Plasmapheresis is when the liquid portion of the blood is removed and separated from the blood. The blood cells are mixed with albumin (protein) and infused back into the body. This option is used when you aren't responding to corticosteroid treatment, or if symptoms are severe.

To modify the progression of MS, there are a lot of options. That being said, the medication will depend on the type of MS that you have. For primary-progressive MS, the only FDA-approved medication is *ocrelizumab (Ocrevus).* However, for relapsing-remitting MS, there are quite a few more options. Below, we've listed several, but the list is in no way extensive.

- ***Beta interferons*** are commonly used and are injected into the skin to reduce both the frequency and severity of relapses.
- ***Ocrelizumab (Ocrevus)*** can also be used to treat relapsing-remitting MS. It is given intravenously.
- ***Glatiramer acetate (Copaxone)*** is an injection and blocks the immune system's attack of the myelin sheath.
- ***Natalizumab (Tysabri)*** is a first-line treatment for people with severe MS or a second line treatment for others. It blocks the movement of immune cells from the bloodstream to the brain and spinal cord, which can be harmful.
- ***Alemtuzumab (Lemtrada)*** targets a protein on the surface of immune cells and depletes white blood cells; in doing so, it can limit nerve damage but also increase the risk of infection and autoimmune disorders. Receiving this special drug is also a lengthy process – only certified providers can administer it, as reactions are common and it must be given over a consecutive period of time.

To treat symptoms of MS, there are a variety of treatments available. The treatments, of course, depend on the symptoms. Physical therapy and occupational therapy is used to keep muscles strong and supple and to ensure that you have the tools to continue to perform daily tasks.

For example, it is common for legs to weaken due to MS. A physical therapist can help maintain strength and assist with gait abnormalities. *Pharmacotherapy* is prescribed to treat muscle stiffness and spasms (for example, baclofen or tizanidine), fatigue, sexual dysfunction, pain, depression, and bowel and bladder control problems.

The Bottom Line…

There is no "easy" way to diagnose MS – specific diagnostic criteria must be met first. To meet this criterion, a sequence of diagnostic tests may have to be ordered – and they may have to be ordered several times before you achieve a diagnosis.

Once you have been diagnosed with MS, you'll likely feel several emotions – relief that there is an answer to what you're feeling, but also fear of the unknown. This quote sums up MS, and all chronic conditions, quite nicely:

"You are not MS; you just have MS. You are you. Don't let this disease define who you are." – Stephen Moneymaker

Resources

National Multiple Sclerosis Society (Diagnosing MS)

WebMD (How Multiple Sclerosis is Diagnosed)

National Multiple Sclerosis Society (Diagnosing Tools)

National Multiple Sclerosis Society (MS Symptoms)