

What doctors want patients to know about multiple sclerosis



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For some people, awareness of multiple sclerosis (MS) begins not in a clinic, but in the public eye. When actors, musicians or television personalities share their diagnoses, they put a human face on a disease that is often misunderstood. Christina Applegate, Selma Blair, Jamie-Lynn Sigler, Montel Williams and Jack Osbourne are among the well-known figures who have spoken openly about living with MS, helping to spark conversations about symptoms, disability and resilience.

Behind the headlines, multiple sclerosis remains a chronic, immune-mediated disease of the central nervous system that affects nearly 1 million people in the U.S. Its course and impact can vary widely from person to person, making diagnosis and long-term management challenging. As public stories raise awareness, physicians and researchers continue to focus on earlier detection, expanding treatment options and comprehensive care that supports physical function and quality of life for people living with MS.

The AMA's What Doctors Want Patients to Know™ series gives physicians a platform to share what they want patients to understand about today's health care headlines

In this installment, [Augusto A. Miravalle, MD](#), a neurologist with Rush University Medical Center, took time to discuss what patients need to know about multiple sclerosis.

[Rush University System for Health](#) is part of the [AMA Health System Member Program](#), which provides enterprise solutions to equip leadership, physicians and care teams with resources to help drive the future of medicine.

MS is a disease of the central nervous system

“Multiple sclerosis is a disease of the central nervous system—the brain and the spinal cord—and it is an autoimmune disease,” said Dr. Miravalle. “What that means is the immune system is the one that is in a sense attacking the myelin, which is the sheath around the nerves in the brain and the spinal cord.”

“We still don’t know the cause of MS, but we know that there are certain factors that actually predispose people to a higher risk of developing multiple sclerosis,” he said.

These are the most common early MS symptoms

“Usually, we see that the involvement of the optic nerve that allows us to see is very commonly affected—around 60% of the time—as a first symptom,” said Dr. Miravalle.

“Patients present with difficulty with eye vision, with blurry vision, as well as pain with eye movement.”



Augusto A. Miravalle, MD

“Any situation that a person experiences decreased visual acuity along with pain that lasts for at least 24 hours—and the duration is key—that should prompt a consultation with a doctor or ideally a neurologist,” he said. “Other symptoms also could be things like numbness or tingling or weakness.”

“And again, the duration is key, so something transient lasting for a minute or two is usually not MS, but something that actually lasts for at least 24 hours, often more than weeks, with persistence of symptoms and deficits, that usually should be a red flag,” Dr. Miravalle added.

Certain geographic locations have higher prevalence of MS

“The number of patients in the U.S. is thought to be around 1 million and the incidence and prevalence of MS truly varies depending on geographies,” said Dr. Miravalle. “Even within the U.S. you have areas that have a higher incidence of MS and in the world too.”

“You have countries that have more or less, but roughly speaking, that prevalence goes anywhere from 0.3 to at the highest three individuals per 100,000,” he said. “In the world, usually it’s anything closer to the poles. So, the closer you get to the North Pole or the South Pole, the higher the incidence of MS.”

“Conversely, the closer you are to the equator, the lower the incidences of MS,” Dr. Miravalle said. “Then within the U.S., for example, you have pockets of high incidence around Michigan, here in the Chicago area, in the northeast area as well as in the Rockies.”

With multiple sclerosis, “time is brain”

“The big gap now is understanding that in multiple sclerosis—like in many other neurological disorders—time is brain,” said Dr. Miravalle. “One misconception is that there is time and patients have time to wait until things get worse before they act.”

“One of the things we’re trying to do is raise awareness and educate people that the best tools we have in MS is to prevent things from happening,” he said. “And that prevention is very effective when used earlier in the course of the disease.”

There are guidelines for diagnosing multiple sclerosis

“We now have strict guidelines and criteria on how to diagnose MS. It’s called the McDonald criteria,” said Dr. Miravalle. “We follow those and it’s a combination of taking a careful history of symptoms, looking at a physical exam, confirming some findings on examination.”

“History is critical. We need patients to tell us their symptoms, their story and how they evolved over time,” he said. “Also, we have to do some blood work and often we do MRIs of the brain, spinal cord and, very rarely, but possibly, we could do further studies such as spinal taps to look into the spinal fluid.”

Types of MS depend on relapses

“Traditionally, multiple sclerosis has been divided or assigned labels, if you wish, based on the clinical course—so how patients clinically present,” said Dr. Miravalle. “We often observe that around 80% to 90% of patients will have a course that has relapses or clinical attacks early on.

“And that’s what we call that relapsing-remitting multiple sclerosis,” he added, noting “a small proportion of patients who don’t have relapses at onset, that’s what we call primary progressive multiple sclerosis.”

The exact cause of MS is unknown

“Historically the cause of multiple sclerosis has been linked to some sort of environmental factor plus genes. The combination between the two is what leads to a higher risk of all these factors in the environment,” said Dr. Miravalle. “The strongest association is with the virus that causes mono—the Epstein-Barr virus.”

“In individuals who are infected by this virus, particularly later on in life around 15 or older, that’s when the immune system can actually react in an autoimmune way,” he explained. “The geographical predisposition to MS also suggests that there is something in the environment that makes people more or less predisposed.”

“Other factors besides the Epstein-Barr virus, which can actually increase the risk of MS by 32-fold, is vitamin D deficiency. Individuals with low vitamin D could be at higher risk of MS,” Dr. Miravalle said. “And then things like smoking as well as childhood obesity. Those are the strongest factors that we know that will increase the risk.”

“Then you have, of course, genetic factors. So having a family member with MS will increase the risk of multiple sclerosis, but also there are over 200 genes that have been linked to an increased risk of MS,” he said. “Most people don’t have a family relative with MS, but if they inherit those genes and they grow up in places with those epidemiological factors, they will be at a higher risk of developing MS.”

Women are diagnosed with MS at a higher rate than men

“Multiple sclerosis affects women about 2–3 times more frequently than men, a disparity that has increased over the past several decades in many regions of the world,” said Dr. Miravalle. “Epidemiologic studies suggest that women now account for nearly 70–75% of new MS diagnoses.”

“The reasons for this gender difference are multifactorial and likely reflect a combination of hormonal influences—for example, estrogen and progesterone modulation of immune responses—genetic susceptibility and environmental factors such as vitamin D exposure, obesity, smoking and reproductive timing.”

Disability is a leading complication of MS

“MS, prior to the institution of medications that we have approved, used to be the leading cause of disability in young individuals in the U.S.,” said Dr. Miravalle. “Disability, of course, is one of those consequences that could be anywhere from cognitive difficulties—not being able to perform their job, having difficulty with attention, concentration, memory—to things like extreme fatigue that sometimes is disabling.”

Then there is also “moderate disability, such as weakness in the legs. Some people have an aggressive form of MS that they’re, unfortunately, paralyzed and they can’t walk,” he said. “It’s a serious disease. We often don’t see those outcomes anymore now that we have highly effective therapies that allow us to stop the disease from progressing.”

There is no cure for MS

“We don’t have a cure for MS unfortunately, and no treatment is perfect, so there is always a conversation around the benefits of these medications as well as side effects,” said Dr. Miravalle. “And because the disease is autoimmune, the treatments that we have are designed to, in a sense, alter these immune responses in different strategies.”

“We have treatments that are going to cause some degree of immune suppression and then also medications that perhaps reduce those immune responses,” he said.

MS medications improve life expectancy

“Prior to the use of these medications, we used to observe the patients with MS at anywhere between five to 10 years lower life expectancy than individuals without MS,” said Dr. Miravalle. “However, one of the advantages of these medications is that now we see that people with MS live as long as anyone else.”

At Rush, we are very proactive. We are the only center here in the region and one of the few in the country that offers a comprehensive brain health program for MS patients where we look not only into medications, but also things like diet, [exercise](#), weight control, risk factor modifications, smoking cessation,” he said. “When you add all of these strategies, patients not only live the same amount of years, but actually their quality of life is better.”

Lifestyle changes can also help with MS

In addition to medications for multiple sclerosis, lifestyle changes can also improve the quality of life for patients with MS, “particularly exercise,” said Dr. Miravalle. “The more we

learn about the role of exercise in neurological conditions, but also in [healthy aging](#), it's becoming clear that there is a dose dependent benefit."

"Individuals who exercise consistently—around two and a half hours a week or more—have a profound benefit in terms of the way the brain can function, but also the way the brain can resist the damage from multiple sclerosis," he explained.

Reduce your risk of MS symptom flare-ups

"First, have your team. MS is very hard to control by yourself, so create your team, whether it is your friends, family or loved ones to be able to troubleshoot these situations," said Dr. Miravalle. "But also, your health care team. You often need to have a neurologist, a nurse practitioner, but also a counselor, a physical therapist and a nutritionist."

It is also important to have "clear communication, right? So being able to pick up the phone or type in the computer, and have that active or proactive communication is key."

Take steps to ensure social engagement

"This is an important area that we are starting to learn about: the importance of social engagement in brain health," said Dr. Miravalle. "We know that [social isolation](#) contributes to, for example, a higher risk of dementia."

"People with MS being isolated also predisposed individuals to an increased risk of [depression](#), [anxiety](#) and fear," he said, emphasizing that "social groups are important. They don't have to necessarily be a support group. It can be a class or you go for a walk or learn a new hobby."

"Create your social network. It's critical and doesn't necessarily have to be guided towards multiple sclerosis," said Dr. Miravalle. "It has to be something that you enjoy."

More is needed to reduce barriers to care

“Unfortunately, in the U.S., only 30% of MS patients have access to medications,” said Dr. Miravalle. “So, there’s still a big problem in terms of access to therapies, access to care and barriers—whether it’s geographical, economical or otherwise.”

“It’s important to continue to educate people on what resources are available and work together towards decreasing those barriers,” he said.