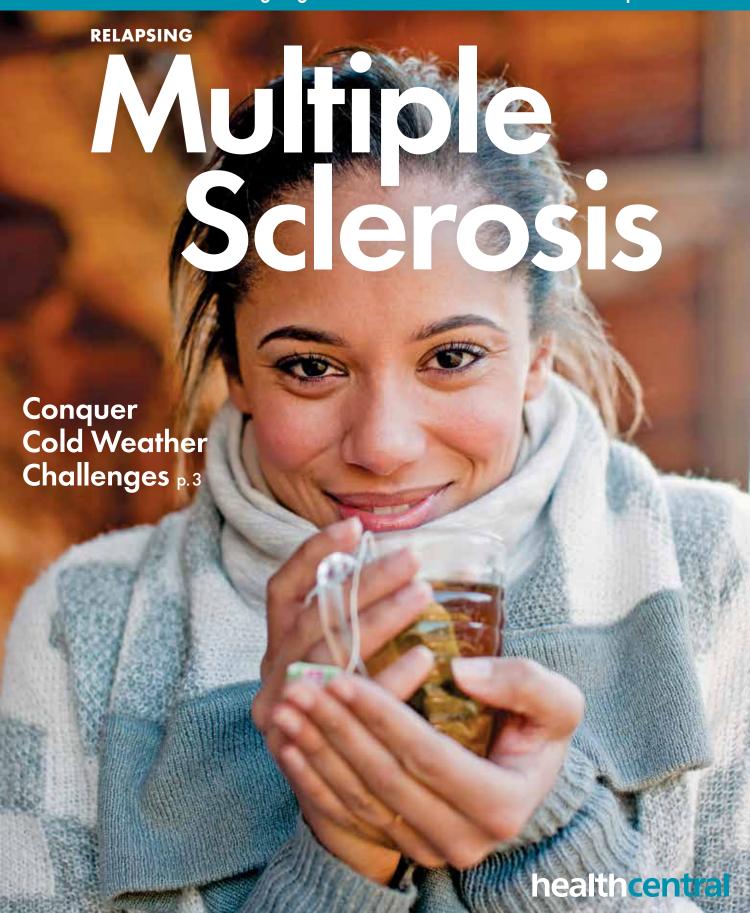
### Learning to Thrive With MS p.12

How to Deal With 'Cog Fog' + Blood Pressure Alert + Your Rx Options



**WELCOME** to HealthCentral's guide to **Relapsing Multiple Sclerosis**. In these pages, you'll learn about current research, how to make the most of every doctor visit, the latest treatments, and more. **For additional tips and info on MS, go to HealthCentral.com/msguide.** 



#### TAKE A NOT-SO-DEEP BREATH

Having trouble catching your breath? A recent study found that a less intense alternative to standard respiratory exercises may help with that.

Breathing problems are common in MS, and standard therapy, which focuses on the use of muscles in the diaphragm or chest, can be difficult for patients because of fatigue and muscle weakness.

Researchers in Spain compared two groups of MS patients who had trouble breathing. One group did conventional exercises, breathing in through the nose and exhaling through the mouth. The other did low-resistance inhaling exercises—called inspiratory muscle training—breathing through their mouths with a device that controlled the flow of air. After 12 weeks, improvements in inspiratory muscle strength and shortness of breath were greater in the low-resistance group. The findings suggest that inspiratory training may be a less taxing breathing therapy for some people with MS.



## PUMP UP YOUR BRAIN CELLS

WE KNOW that exercise is good for the body, even if we don't always get enough. Growing evidence shows that it's also good for the brain—especially for people with MS. For example, a study published in July 2020 in the *Journal of Neurology* found that people with MS who got regular physical exercise lost less tissue in the hippocampus—the area of the brain responsible for learning and memory—than MS patients who were more sedentary.

And reducing brain tissue loss didn't require a major workout program. Benefits were seen in study participants who jogged or walked for at least 15 minutes per week. "Even minimal activity is better for your health—and brain—than a sedentary approach," says lead investigator Alon Kalron, PhD, senior lecturer at the Sackler Faculty of Medicine at Tel Aviv University.

Millions of people worldwide who have MS

## LOWER THE PRESSURE

High blood pressure occurs in all groups of people, but until recently, there hasn't been much data on how common it is among those with MS. In order to find out, researchers examined 37 million U.S. electronic health records to compare the prevalence of hypertension among MS patients with that of the general population. The results were sobering: Hypertension was found to be 25 percent more common in people with MS than in people without MS.

The finding is important because "hypertension is associated with worse outcomes in MS patients," explains lead investigator Farren Briggs, PhD, assistant professor of neurology at Case Western Reserve University. Though it's extremely important to treat and manage hypertension, prevention is just as crucial. Talk with your doctor about the best ways to control your blood pressure.





## Why do my MS symptoms worsen in cold weather, and what can I do about it?

People with MS are more sensitive to extremes of temperature because it's more difficult for the damaged areas in the brain and spinal cord to conduct nerve impulses at such temperatures. It's not that cold or hot temperatures are making your MS worse, but they're causing damaged areas to have more trouble performing well under those circumstances. What you can do is dress in layers to keep warm, and then remove a layer or two if needed. Keep your hands and feet warm. Carry a warm drink with you unless your balance is impaired. And avoid being out in the cold for prolonged periods of time. In particular, muscle stiffness and spasticity tend to get worse in cold weather; these symptoms can be improved with stretching and physical therapy.

## ■ My mood and energy often decline during the darker winter months. What can help?

Get your vitamin D level checked at least once a year, and take a daily supplement of vitamin D (check with your doctor about the dose). If you're deficient in vitamin D, you can experience fatigue and low mood, and MRIs show that inflammation from MS can become more active. Try to get some sunlight, even when it's cold outside; this can boost your energy and your vitamin D level. Also, take short walks if you can, because staying physically active is important for both energy and mood.



## When there's snow or ice outside, I worry about falling. What can I do to decrease my risk of falls?

Get evaluated by your neurologist, and ask about pursuing physical therapy for balance issues and to find out if you might need a cane or a walker. If you are taking a medication for pain, anxiety, or muscle stiffness that makes you overly sleepy, tired, or unsteady, discuss with your physician how your dosing can be changed to make things safer for you. Always talk to your doctor before making any medication changes.

## ■ I take an MS disease-modifying drug and had a flu shot. Am I still at high risk for the flu?

Not all MS disease-modifying therapies increase the risk of infections, but some of them can impair your ability to respond to the influenza vaccine. However, even if the response is attenuated, it is not derailed. The flu vaccine reduces your risk of catching the flu and lessens the severity of symptoms if you do get it, though the vaccine is never 100 percent effective. Also, MS patients who are over 65 and those who have

a high level of disability—if they are wheelchair-bound or use a walker, regardless of their age—are at higher risk of flu complications.

#### ■ If I get the flu, is it likely to trigger a flare-up of my MS?

It's not very likely, but it's not impossible. A true MS flare or exacerbation means you actually formed a new lesion in the brain or spinal cord that is giving you *new* symptoms that last for 24 hours or longer. What's more common is that the infection can cause a flare-up of old MS symptoms, such as numbness and tingling. This is called a pseudoexacerbation, meaning it's a temporary worsening of old symptoms from old attacks. This does not mean that your MS is getting worse. As the infection clears, your symptoms should soon improve. ■



ELENA GREBENCIUCOVA,

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2 HealthCentral Guide HealthCentral Guide



More than 913,000 people in the U.S. have MS. But this challenging disease has become easier to live with for many of them, thanks to a better understanding of MS progression and newer, more effective treatments.

Percentage of people with MS who are female.

f you're sitting in an MS infusion center as you read this, you already know that multiple sclerosis is a chronic, progressive disease of the central nervous system in which the immune system mistakenly attacks myelin, a fatty substance that insulates your nerves and helps them communicate. Over time, these attacks can

in the extremities, vision issues, and locations of MS damage vary from symptoms, and course of the disease.

cause scarring (known as sclerosis or lesions) and hardening of nerve tissue in the spinal cord, brain, and eyes. The lesions can cause pain and weakness cognitive problems. Because the exact person to person, so do the severity,

Average age of people at MS diagnosis.

#### Who's at Risk

For first-timers at the infusion center. you may still be wondering how and why you ended up with MS. Here are some possible risk factors:

- Female gender; estimates vary, but about three times as many women as men have MS.
- Where you live or grew up; MS is more prevalent farther from the equator.
- Northern European ethnicity
- Family history of the disease
- Certain genes
- Exposure to certain infections, like Epstein-Barr, human herpes virus 6, and Chlamydia pneumoniae
- Low levels of vitamin D
- Smoking
- Obesity (a recently identified risk)

#### **Diagnosing RRMS**

Four forms of the disease have been identified: clinically isolated syndrome (CIS); relapsing-remitting MS (RRMS); primary-progressive MS (PPMS); and secondary-progressive MS (SPMS).

CIS is characterized by an episode of neurological symptoms that lasts at least 24 hours, caused by inflammation of or damage to myelin in the central nervous system. Some people who experience CIS go on to develop MS of one form or another, and some don't.

About 85 percent of people with MS are initially diagnosed with RRMS. Several factors distinguish RRMS from other forms of MS, according to the National Multiple Sclerosis Society.

- Diagnosis at an earlier age
- More brain lesions, with more inflammatory cells, as seen on magnetic resonance imaging (MRI) scans; in contrast, people with PPMS tend to have more spinal cord lesions than brain lesions, with fewer inflammatory cells.
- Some people with RRMS develop SPMS, which entails a steady worsening of symptoms over time.

Without treatment, the transition generally occurs after 10 to 20 years, but early, aggressive treatment may slow the progression.

#### **Symptoms of RRMS**

Common symptoms in the early stages are vision problems, muscle weakness, stiffness, spasms, tingling and numbness in the limbs, coordination and balance problems, and fatique.

Many people with RRMS notice that certain activities or situations, such as taking a hot bath or being under a lot of stress, seem to trigger flare-ups. The term "flare-up" (as well as "relapse," "attack," and "exacerbation") is commonly used to refer to a period of new symptoms or intensifying old symptoms.

If damage to your central nervous system progresses with RRMS, you may develop health issues ranging from depression and mood changes to difficulties with memory and concentration, urinary urgency and frequency, bowel problems such as constipation, and sexual difficulties.

How people experience RRMS varies widely. Some have flare-ups, lasting anywhere from days to months before easing up, while others notice gradual but steady physical and cognitive decline over time. Still others live for years with only occasional, small reminders they have MS.

There's no way to predict what course the illness will take, but with the appropriate therapy, most people with MS don't become disabled, says Brian R. Apatoff, MD, PhD, associate professor of neurology and neuroscience at Weill Cornell Medical College and director of the Multiple Sclerosis Institute in New York City.

The outlook is much better than it used to be, notes Dr. Apatoff. "Research in MS is one of the most active areas in neurology, with several new therapies in the pipeline," he says. "MS is one of neurology's bright, shining areas of investigation." ■

For more info on multiple sclerosis, go to **HealthCentral.com/msguide**.

HealthCentral Guide HealthCentral Guide 5

#### **Doctor Discussion Guide:**

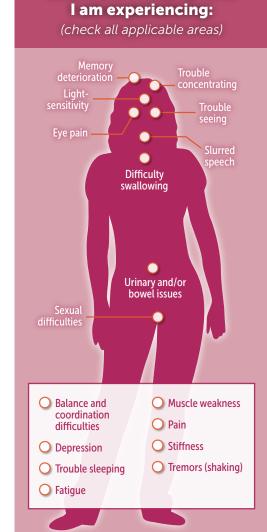
## RELAPSING MULTIPLE SCLEROSIS

Monitoring your symptoms and receiving the right care can make all the difference when managing your multiple sclerosis. You can take an active role in your health by not only asking questions, but also presenting your doctor with a complete picture of what you're experiencing. Toward that end, fill out the guide below so that you're prepared to have a detailed discussion with your doctor. Doing so will help your doctor to best help you.

1. On a scale of 1 to 5, since my last visit my symptoms have: (circle on scale below)



- 2. When the seasons change from winter to spring, how will the transition from cold to warmer temperatures affect my MS?
- 3. What changes should I make to ease my MS symptoms as the weather changes?
- 4. How might the flu and/or seasonal allergies affect my MS?
- 5. What changes should I make to get a better night's sleep and reduce MS fatigue?



Below are the symptoms

# healthcentral LIVE BOLD · LIVE NOW



Sharing details about your MS symptoms with your doctor can get you the best care possible.

hen you're living with multiple sclerosis, your condition may change over time, so your treatment needs may change, too.

But because MS symptoms often fluctuate from day to day, and office visit to office visit, tracking the progression or slowing of the disease is complicated. The best way for you and your doctor to know how well you are responding to your current treatment plan is by spending some time with each other at regular office visits.

Your physician will probably want to see you every three to six months in the first one or two years after your

diagnosis. After that, you'll most likely visit your doctor every six months or once a year. Be sure to keep up with the recommended appointment schedule, and check in between visits if you're having any new symptoms, medication side effects, or other issues. Monitoring your health over time, getting essential tests, and having your treatment adjusted as needed can make all the difference in living with MS.

#### What's That Test?

To measure MS progression and your response to treatment, your doc may give you some of the following tests:

#### Magnetic resonance imaging (MRI):

This technology produces highly detailed images of your body. With an MRI of the brain and spinal cord, doctors can spot lesions characteristic of MS, as well as other changes.

- Neurological exam: Your physician will check your reflexes, coordination, gait (how you walk), and balance.
- Vision: It's not uncommon for people with MS to experience blurred or double vision, so your doctor will look for optic nerve damage.
- Other senses: Some people with MS lose part or all of their ability to taste or smell, develop hearing troubles, or have problems with their ability to feel pain and other sensations. Since such issues can indicate progression of the disease, your doctor will sometimes test these senses.
- Cognitive function: MS can affect the way your brain works, so you may have tests that evaluate speech processing, working memory, reasoning and planning, visual perception, and language. ■

#### MAKING THE MOST OF YOUR OFFICE VISITS

#### 1. SEE AN MS SPECIALIST

if you can. Check with the National MS Society (nationalmssociety.org/ Resources-Support/ Find-Doctors-Resources) or the Consortium of Multiple Sclerosis Centers (go to mscare.org and click on MS Centers Directory under Connect) to find one.

#### 2. TRACK CHANGES in

your health (positive and negative). Using a journal or an app, regularly record anything new going on between appointments. This makes it easier to recognize problems as they occur. Bring your notes to all of your healthcare appointments.

#### changing symptoms that may indicate your MS is progressing, including

3. BE AWARE of new or

vision issues, vertigo, limb weakness or numbness, poor balance or coordination, falling, trouble walking or talking, memory loss, fatigue, and bladder or bowel problems.

4. DON'T WAIT for an appointment if you're having a flare-up. Call your neurologist. Sometimes the best way to manage symptoms is through immediate therapy. Other times, you may just need to ride it out. You and your doc can decide on the

best approach for you.





Seeing the road ahead isn't easy after an MS diagnosis. This young chemistry professor has managed to find a way to thrive.

> helsea Sherman was 20 years old when she first realized that something wasn't quite right. It was 2013, and Sherman was a student at Arizona State University, studying biochemistry to prepare for medical school and a career as a doctor.

One day she noticed that the left side of her tongue was numb and her left arm felt uncoordinated. Her doctor could find nothing wrong, and she

was referred to a neurologist. Days before her appointment, Sherman's symptoms became so severe that she was admitted to the hospital. That's when she was told she *might* have MS.

The symptoms subsided, but in 2016, the year Sherman got her bachelor's degree in biochemistry, she had her second MS relapse. It came in the form of optic neuritis, a common symptom of relapsing-remitting MS (RRMS). This inflammation of her

optic nerve caused her to go completely blind in one eye for a year. Still, there was no solid MS diagnosis.

In 2017, Sherman applied to medical school and was rejected. That same year, she developed tinnitus, or ringing in the ears, a somewhat rare MS symptom. This led to an appointment with an MS specialist, who formally diagnosed her with RRMS and prescribed medication.

Since then, Sherman hasn't had a relapse, but she still experiences tinnitus and fatigue. "My tinnitus is frustrating—and constant," she says. "When it's bad, all I can do is try to distract myself by listening to a podcast or music to cover it up. As for my fatique, there are times when it's so difficult to concentrate that all I can do is lie down and wait for it to pass."

#### A Time of Transition

Yet MS hasn't stopped Sherman from moving forward in life, although she did change her career goals. "I realized how important it was to prioritize my own health, so I decided to pivot away from medical school," says



Sherman works out almost daily to prepare for an upcoming powerlifting competition.



Opting not to pursue a career in medicine, Sherman is now an adjunct professor of chemistry.

Sherman, who lives in Phoenix with her husband. John Michael Sherman. "My heart just wasn't in it anymore."

Instead, she earned a master's degree in chemistry at Grand Canyon University in Phoenix. In 2020, she was hired as an adjunct professor of chemistry at Central Arizona College, where she works today.

Even with her health challenges, Sherman is living a full life. In the past year, she notes, "I married the love of my life, and got a home and a dog."

#### **Becoming an 'MS Warrior'**

Sherman has made it her mission to share positivity. "When I was first diagnosed. I was heartbroken. When I googled my disease, it took me to a very sad place," she says. "I certainly couldn't find anything that would tell me what it's like to be diagnosed and what life might be like later on."

That's why she set out to share her optimistic outlook on Instagram. "I'm happy to show people what a future can be like," she says. Of her handle, @mswarrior.chelsea, she says, "It embodies everything I am and everything I want to be."

Thanks to her posts. Sherman has become a role model for others with MS who worry that an active lifestyle is no longer possible. In 2019, she took part in a bikini bodybuilding competition, and lately she's been training for a powerlifting competition. "That's where I'll be representing people with MS and showing how strong we really are," she says.

Sherman is inspired every day by notes she gets from people who find her on social media. "People will write things like. 'I was just diagnosed and found your page. You've made this time in my life so much easier," she says. "Or they'll tell me what it's been like for them living with MS. They'll write, 'I had a relapse, I'm so bummed and I feel like I can't get up today.' It's those people I hope to help lift up."

In return, the posts Sherman sees from others with MS help her stay hopeful. "People with MS on Instagram have shown me that they can thrive with their disease," she says. "I've met people with MS who have run marathons, become authors, and launched their own businesses. They've shown me that we can live the best versions of our lives."

Having a supportive husband is a plus as well. "The most meaningful thing he does is that he listens to me," she says. "While others would have run away, he stayed, he listened, and he showed me he cared."

The couple's rescue dog—a Chiweenie/Jack Russell mix—has helped, too, "Our dog's name is Gus Gus, but we call him Noodle. It's good having him around. Having a dog has really helped me to reduce my stress."

Ultimately, Sherman says she doesn't define herself by her disease. "Instead, I define myself by how I respond to it," she says. "There are many things in my life that define me, but my multiple sclerosis is not one of them. I won't ever let my MS consume me." ■

For more info on multiple sclerosis, go to HealthCentral.com/msguide

12 HealthCentral Guide HealthCentral Guide 13



#### Your doctor will help you find out about the many MS therapies available these days.

hirty years ago, not a single drug was approved to treat MS. Today, there are some 20 meds for relapsing-remitting MS (RRMS). Many of these are also approved for other forms of the disease.

That's good news, but the range of choices can make planning MS treatment a little complicated. Your doctor will consider the nature and severity of your illness, along with your specific symptoms, to determine which medication is best for you.

Treatments known as diseasemodifying therapies (DMTs), which focus on slowing the course of the disease, are a key part of MS care. DMTs can't cure the condition, but they can moderate the accumulation of lesions in the brain and spinal cord while lessening the frequency and severity of attacks. They can also help delay the progression of disability. DMTs can be injected, given via intravenous (IV) infusion, or taken orally (see sidebar).

Your treatment plan may also involve medications aimed at controlling symptoms of MS, such as fatigue, depression, muscle stiffness and spasms, and bladder and bowel problems. There are a few nondrug therapies that have been shown to help ease certain symptoms as well.

Medication decisions come down to evaluating the balance between a drug's benefits and risks. "We may choose drugs that have fewer side effects but take longer to begin working in a patient who has a very slowly worsening disease," explains Robert Glenn Smith, MD, PhD, a neurologist at Houston Methodist Hospital in Texas. "Or we may choose a drug that's a lot more aggressive in its beneficial effects, but has more side effects, for somebody with more active disease."

Like many things in life, there is no one-size-fits-all treatment approach for MS, and finding what works best for you may require a bit of trial and error. Try not to get discouraged if it takes a few attempts before a match is made. With so many options available, eventually something will click. ■

#### **DMT TYPES**



**INJECTABLES:** The injectable DMTs are interferon beta-1a (Avonex, Rebif), interferon beta-1b

(Betaseron, Extavia), glatiramer acetate (Copaxone, Glatopa), peginterferon beta-1a (Plegridy), and the monoclonal antibody ofatumumab (Kesimpta), which was approved in 2020 by the U.S. Food and Drug Administration. "The interferons and glatiramer acetate are overall the safest, but may not be as effective as some of the newer drugs," says neurologist Shaheen E. Lakhan, MD, PhD, senior vice president of research and development at Click Therapeutics in New York City.



**INFUSIONS:** The DMTs administered via IV infusion are alemtuzumab (Lemtrada), mitox-

antrone, natalizumab (Tysabri), and ocrelizumab (Ocrevus). Depending on the medication, infusion time can range from as little as five minutes to several hours, and infusions are repeated anywhere from daily to yearly for varying periods of time. The side effects differ by drug, so be sure to ask your doctor about those.



**ORAL MEDS:** The DMTs taken as pills include dimethyl fumarate (Tecfidera), fingolimod (Gilenya),

and teriflunomide (Aubagio). Newer oral medications are siponimod (Mayzent), cladribine (Mavenclad), ozanimod (Zeposia), diroximel fumarate (Vumerity), and monomethyl fumarate (Bafiertam). Like most meds, oral drugs have side effects and risks. Work with your doctor to choose your best option.

## Clear the MS 'Cog Fog'

Expert advice for getting through your day when your brain doesn't function like it used to

WHEN YOU LIVE with multiple sclerosis, you may notice that your memory, speech, and ability to concentrate are being affected. These cognitive changes are often referred to as "cog fog."

"The brain is an efficiency system, and any small change in its structure can affect its function," says Victoria Leavitt, PhD, a clinical neuropsychologist and assistant professor of neuropsychology at Columbia University Irving Medical Center in New York City.

Fortunately, there are practical ways to manage MS-related cog fog. Try the following strategies to help you move smoothly through your day.

Follow a script. If you spend a lot of your workday on the phone and have trouble finding the right words to speak, try this work-around. "Create little note cards ahead of time with whatever you are going to say written on them," Dr. Leavitt says. "If you find yourself at a loss for words, you can pick up a card and read it."

#### Prepare a schedule.

"I have people tell me they are doing something and then someone interrupts them and they have trouble picking up where they left off," says Dr. Leavitt. To help with multitasking, write out your daily schedule in advance, and refer to it during the day, checking off items as you complete them, she suggests.

Fight fatigue. Break down large tasks and do the hardest ones first, says Kathy M. Zackowski, PhD,



OTR, senior director of patient management, care, and rehabilitation research for the National Multiple Sclerosis Society. "Fatigue affects your cognition, so don't leave cognitively challenging tasks for the end of the day," she says. Building 10-minute breaks into your day will also help.

#### Play memory games.

"Stimulating your brain by playing a computer game seems to be effective for some people." says Dr. Zackowski. All sorts of do-anywhere digital games-some of them free—are available for iOS and Android.

Get evaluated. "The most important thing is to understand your personal profile of strengths and weaknesses," explains Dr. Leavitt. "Then, if there is a problem, you can work on developing specific strategies that can help you."

Dr. Leavitt recommends seeing a neuropsychologist. preferably at an MS center. When it comes to MS, she says, "the only way to measure cognition is through cognitive tests, usually administered by neuropsychologists. Clinical brain scans (MRI) do not show us how someone is functioning cognitively." ■



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