

Sleep tight



Researchers try to find ways to help people with MS get a good night's rest.

by Lori De Milto

Getting a good night's sleep is essential to staying healthier and focusing on daily activities. But about half of those living with multiple sclerosis have sleep disorders such as sleep apnea or insomnia. These sleep disorders can be caused by the MS itself, by the symptoms of MS, or by the medications used to treat MS.

Lack of healthy sleep can lead to or worsen problems for people with MS, including fatigue, cognitive dysfunction (the ability to remember, think, focus and solve problems) and mood swings, along with physical symptoms such as balance problems, spasticity and pain. Among studies on sleep disorders in MS funded by the National Multiple Sclerosis Society, researchers are studying possible treatments for sleep apnea and insomnia in adults, and how sleep habits and physical activity affect disease symptoms in children and teens with MS.

Treatment for obstructive sleep apnea may improve cognitive function

Obstructive sleep apnea (OSA) causes poor quality sleep because breathing repeatedly stops and starts when the throat muscles block the airway. Up to 20 percent of all people may have OSA and, although large-scale population studies are lacking, recent estimates from regional samples suggest that up to 50 percent of people with MS may be at risk for OSA. Researchers don't know why OSA is more common in people with MS, but say it may be due to damage in areas of the brain that control breathing during sleep. Studies on the issue are underway.



**Tiffany J. Braley,
MD, recommends
talking to your
primary care
provider about
sleep problems and
how they're
affecting your life.**

Photo courtesy of Dr.
Tiffany J. Braley

In people without MS, OSA is a well-known cause of poor cognitive performance. In a study of 38 people with MS, Tiffany J. Braley, MD, found that OSA also reduced cognitive function, which is already a challenge for many people with MS. "Treatments for cognitive function are very limited, but sleep apnea is treatable," says Dr. Braley, assistant professor of neurology and director of the Multiple Sclerosis and Clinical Neuroimmunology Fellowship Program at the University of Michigan's Multiple Sclerosis and Sleep Disorders Centers.

Now Dr. Braley is studying whether a common treatment for OSA, positive airway pressure (PAP), can improve cognitive function in people with MS. PAP treatment involves a machine that uses mild air pressure to keep the upper airway open during sleep, preventing OSA. Studies of people who don't have MS have shown that PAP treatment may improve cognitive function.

In a study being conducted at the University of Michigan, up to 175 participants with MS and OSA (confirmed by a sleep study) will be assigned to immediate PAP treatment or treatment in three months. Both groups will have a cognitive test at the start of the study and then another test three months later. Researchers will compare the two groups. This study is open to new participants. For more information about the requirements for joining the study, visit [CPAP to Treat Cognitive Dysfunction in MS](#). The study started in 2015 and is anticipated to end in 2021.

Tips for healthy sleep

“A lot of times, sleep disturbances in people with MS go undiagnosed and untreated,” says Catherine F. Siengasukon, PhD. Both she and Tiffany J. Braley, MD, recommend talking to your primary care provider or MS specialist about sleep problems and how they’re affecting your life. “Sleep problems are largely treatable,” Dr. Braley adds. Good sleep hygiene is often the first step in treating sleep difficulties:

- Go to bed and wake up at the same time every day.
- Use the bed only for sleep.
- Limit naps.
- Develop a relaxing bedtime routine to wind-down before bedtime.
- Avoid caffeine in the late afternoon and evening.
- Avoid alcohol or nicotine in the evening.
- Avoid screen time close to bedtime.
- Get regular exercise, but since exercising close to bedtime can disrupt sleep for some people, you may need to exercise earlier in the day.

For teens with MS, good sleep hygiene is also important, but teens need to be motivated to change their behavior. “We have our patients explore the reasons they are fatigued or depressed and come up with solutions on their own. Kids must take ownership of their lives,” says E. Ann Yeh, MD. Parents should support good sleep hygiene and help their teens take ownership of their lives.

Cognitive behavioral therapy improves insomnia

Many people with MS deal with chronic insomnia, defined as difficulty falling asleep, staying asleep or waking up too early three or more nights a week for at least the past three months. In earlier research on sleep and MS, Catherine F. Siengasukon, PhD, found that poor sleep quality impairs aspects of memory and that exercise can relieve daytime sleepiness. Siengasukon is an associate professor of physical therapy and rehabilitation science at the University of Kansas Medical Center. She is now interested in how cognitive behavioral therapy for insomnia (CBT-I), a technique that helps people understand the thoughts and feelings that influence their sleep behaviors and teaches them how to avoid behaviors that negatively impact their sleep, might be useful in treating insomnia in people with MS.



Researchers are determining if cognitive function can be improved by treating sleep apnea, which commonly affects people with MS.

In an ongoing randomized clinical trial supported by grant funding from the National MS Society, Siengsukon is testing the use of CBT-I in people with MS and insomnia, comparing:

- Participants who receive CBT-I.
- Participants who receive either stretching exercises and thinking games or education on how to sleep better.

Participants meet with a researcher once a week for six weeks to receive either CBT-I or the stretching exercises and thinking games. Participants in the education group receive one session of education about how to sleep better.

“The CBT for insomnia group had a significant improvement in insomnia symptoms, sleep quality and fatigue compared to the control groups,” Siengsukon said when reporting preliminary results in June 2018 at the Consortium of MS Centers annual conference. “We also saw an improvement in sleep self-efficacy: the belief that you can change your behavior about sleep.”

Siengsukon is now working on an interactive CBT-I for MS app, in collaboration with Michelle Drerup, PsyD, from the Cleveland Clinic. Drerup developed the Go! To SleepSM CBT-I app. Users complete an online sleep log and get recommendations and activities to improve their sleep, along with emails, articles, relaxation practices and motivational tips. She and Siengsukon are modifying the app to create a version specifically for people with MS. They expect to begin testing it by the end of 2018.



**E. Ann Yeh, MD,
says common sleep
problems in teens
can be much worse
in teens with MS,
causing severe
fatigue.** Photo
courtesy of Dr. E. Ann
Yeh

Impact of sleep and physical activity on MS in youth

As a pediatric neurologist at the Hospital for Sick Children in Toronto, E. Ann Yeh, MD, knows that common sleep problems in teens can be much worse in teens with MS, causing severe fatigue. Dr. Yeh is also an associate professor of medicine at the University of Toronto and director of the Pediatric MS and Neuroinflammatory Disorders Program at the Hospital for Sick Children.

In earlier research, Dr. Yeh found that 60 percent of the children and teens with MS she studied had sleep problems and that more physical activity led to less depression and fatigue. Most of the young people in the research were ages 12-18. Now Dr. Yeh is conducting a study to learn more about sleep problems in this population, and how fatigue and depression are related to sleep and physical activity. The study will enroll about 30 young people with MS ages 10 to 18, and 30 young people without MS.

Participants will wear an accelerometer and an Actiwatch at home for seven days. Accelerometers monitor movement and activity, and Actiwatches measure sleep. Participants will also keep a sleep diary and answer questions. The study started in March 2017 and is scheduled to end in February 2019.

“We hope to learn about the effect of on sleep and other lifestyle factors on MS and how can we help youth with MS have better lives,” says Dr. Yeh.

Lori De Milto is a Sicklerville, N.J.-based freelance writer.

To learn more about healthy sleep, visit [the National MS Society's Sleep Resource](#).

For information about joining a study for sleep apnea, visit [CPAP to Treat Cognitive Dysfunction in MS](#).