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# Counseling Points™

Enhancing Patient Communication for the MS Nurse

## Helping People with MS to Improve Sleep Quality



**Series Editor**

Amy Perrin Ross, APN, MSN, CNRN, MSCN

**Faculty Panel**

Cheryl Blaschuk, RN, FNP, MSCN

Steven D. Brass, MD, MPH

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## FACULTY:

### Series Editor

**Amy Perrin Ross, APN, MSN, CNRN, MSCN**  
Neuroscience Program Coordinator  
Loyola University Medical Center  
Maywood, IL

### Faculty Panel

**Cheryl Blaschuk, RN, FNP, MSCN**  
Nurse Practitioner, Multiple Sclerosis Clinic  
Medical College of Wisconsin  
Milwaukee, WI

**Steven D. Brass, MD, MPH**  
Assistant Clinical Professor, Department of  
Neurology  
Director, Neurology Sleep Clinical Program  
Co-Medical Director, Sleep Medicine Laboratory  
UC Davis Health System  
Sacramento, CA

### Faculty Disclosure Statements

Amy Perrin Ross has received honoraria for consulting and participating on the Speakers' Bureaus for Bayer HealthCare, Inc., EMD Serono, Novartis, Pfizer, Inc, and Teva Neuroscience.

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### Planners and Managers

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## PUBLISHING INFORMATION:

### Publishers

Joseph J. D'Onofrio  
Frank M. Marino  
Delaware Media Group  
66 South Maple Avenue  
Ridgewood, NJ 07450  
Tel: 201-612-7676  
Fax: 201-612-8282  
Websites: [www.delmedgroup.com](http://www.delmedgroup.com)  
[www.counselingpoints.com](http://www.counselingpoints.com)

### Editorial Director

Nancy Monson

### Medical Writers

Katherine Wandersee

### Art Director

James Ticchio

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# Counseling Points™

## Helping People with MS to Improve Sleep Quality

## Continuing Education Information

### Target Audience

This educational activity is designed to meet the needs of nurses who treat patients with multiple sclerosis (MS).

### Purpose

To provide MS nurses with information and tools for evaluating and treating sleep problems in people with MS.

### Learning Objectives

*Upon completion of this educational activity, the participant should be able to:*

- Evaluate sources of sleep problems in patients with MS
- Assess how MS symptoms and comorbidities influence sleep problems
- Address correctable causes of sleep dysfunction
- Discuss indications for a sleep specialist consult or overnight sleep study

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# welcome

Dear Colleague,

It would be difficult to pick a topic more relevant to quality of life for people with multiple sclerosis (MS) than helping them to improve their sleep. Poor sleep quality is extremely common in the general public and is pervasive among people with MS. The etiology of sleep problems in MS is multifaceted, but many of these problems are readily treatable. The key is a correct diagnosis of the underlying causes of sleep problems. Rather than prescribing yet another drug—which can compound rather than alleviate sleep problems—getting to the root of the issue addresses the problem more directly and serves the patient better in the long run.

How often do our patients with MS ask for advice about fatigue, when in fact the problem is related to sleepiness? While researching and discussing this issue, we learned that even sleep specialists might have difficulty discerning the difference between MS fatigue and sleep-related problems. Our MS nurse panel worked with a neurologist who specializes in both MS and sleep medicine to develop approaches that can be easily implemented in the office setting to better detect and address sleep problems. This intervention can begin in the reception area or even at home, where patients and their partners can complete some simple screening questionnaires to guide the diagnosis.

We hope that you gain as much insight from this issue on sleep quality as we did during our roundtable discussion.



Amy Perrin Ross, APN, MSN, CNRN, MSCN (series editor)  
Neuroscience Program Coordinator  
Loyola University Medical Center  
Maywood, IL

# Helping People with MS to Improve Sleep Quality

**W**hether it's tossing and turning during the night, staring awake at the bedroom ceiling, or multiple nighttime visits to the bathroom, sleep can become yet another challenge for a person with multiple sclerosis (MS) instead of the restful release it should be. Failure to get a good night's sleep spills over into daytime issues, compounding existing problems such as cognitive difficulties, fatigue, depression, and pain. In some cases, the job of identifying and treating sleep problems may be best handled by a sleep specialist. However, there are many practical steps that can be taken by MS nursing professionals to help their patients understand the causes of sleep dysfunction and improve sleep quality.

## Causes of Sleep Problems in MS

It's no secret that we are a sleep-deprived society. Studies have shown that sleep disorders affect as many as 70 million Americans, or about 20% of the population.<sup>1</sup> Sleep disorders such as insomnia, sleep-disordered breathing or sleep apnea, and restless legs syndrome (RLS) have been reported among the MS population. Sleep disorders occur at a higher prevalence among people with MS, affecting between 25% and 54%, and often remain unrecognized.<sup>2-5</sup> In addition, fatigue is reported in 70% to 90% of people with MS and may be caused by or exacerbated by sleep-related problems.<sup>6</sup>

Depression and anxiety are conditions that can cause or exacerbate sleep problems among people with MS, or be worsened by sleep problems.<sup>7-10</sup> Approximately 40% of people with sleep disorders have a coexisting psychiatric condition, with

depression being the most common. The estimated lifetime prevalence of depression among people with MS ranges from 50% to 59%.<sup>8,9</sup> Even when the patient is not affected by clinical depression, worry and rumination about life stresses has the potential to disrupt sleep, especially for those trying to return to sleep after awakening. Eventually, the focus shifts to worries about lack of sleep and the potential daytime fallout caused by getting too little rest.<sup>10</sup>

Among women in the perimenopausal or menopausal stages—regardless of MS—hormonal changes can cause or compound sleep disruption. In the Study of Women's Health Across the Nation (SWAN), a cross-sectional survey of more than 16,000 women between ages 40 and 55, 38% reported having experienced difficulty sleeping in the previous 2 weeks.<sup>11</sup> This study found an association between decreasing estradiol levels and difficulty falling asleep and staying asleep; in addition, increasing follicle-stimulating hormone (FSH) levels were associated with difficulty staying asleep.<sup>11</sup> Not surprisingly, vasomotor symptoms such as hot flashes and night sweats were among the main hormonal symptoms contributing to sleep disruption.

Many MS symptoms as well as comorbid conditions have the potential to interfere with sleep. Some of the most common factors are listed in **Table 1**.

## How to Conduct a Sleep History

Inadequate sleep can cause or exacerbate common MS symptoms such as fatigue, cognitive deficits, depression, anxiety, pain, and gait problems. Sleep

## Table 1. Causes of Sleep Problems in People With MS

- Poor sleep hygiene
- Irregular sleep patterns (e.g., shift work)
- Bladder/bowel dysfunction
- Spasticity and/or pain
- Restless legs syndrome
- Sleep apnea/sleep disordered breathing
- Depression/anxiety
- Hormonal changes (e.g., menopause, perimenopause)
- Polypharmacy (use of multiple medications)

MS=multiple sclerosis.

disorders also disrupt the ability to work, perform household responsibilities, spend time with family and friends, drive, and many other aspects of daily living.<sup>5,10,12,13</sup> In many cases, the person is unaware of the role played by a sleep problem or related condition. Before initiating treatments such as stimulants for MS fatigue or sedatives or hypnotics to treat insomnia, it is useful to conduct an in-office sleep evaluation, beginning with a sleep history. This information can easily be gathered by the MS nurse in an office setting.

Basic components of a sleep history are summarized in **Table 2**. Much information can be gathered by making good use of time the patient may spend in the waiting area. Questionnaires such as URGE (for RLS) and STOP-BANG (for sleep apnea) are brief enough to be completed by the patient while waiting for an office visit. It can be beneficial to have a spouse or sleep partner present to provide additional input. These questionnaires are used as a basis for discussion during the sleep history and can be determinants for whether the person should be referred to a specialist for other studies.

The physical examination can provide some information about the risk for sleep apnea, espe-

cially if the person has a high body mass index, neck size, or crowded oral pharynx area (e.g., large tongue or tonsils) that may be suggestive of sleep apnea. A cardiopulmonary examination can provide important clues, since sleep apnea is associated with hypertension, abnormal heart rhythms, pulmonary hypertension, and other cardiopulmonary conditions.<sup>15</sup> Screening for depression and/or anxiety should be included in the workup, as should a thorough record of medications used regularly or periodically (including prescription and nonprescription drugs, and supplements).<sup>15</sup>

While a sleep history would not necessarily be included as part of every patient encounter, it can be valuable if the person complains of sleep problems or fatigue, and as a baseline evaluation for mental status and quality of life. If a patient changes medications or has a dosage change, this baseline can be useful in evaluating the effects of any adverse events.

### Is it MS-related Fatigue, a Sleep Problem, or Both?

Fatigue is one of the most common and disabling symptoms of MS.<sup>16,17</sup> A basic definition of fatigue is a “sensation of tiredness that is not improved by bed rest and may be worsened by physical or mental activity.”<sup>16</sup> A more precise definition of primary MS-related fatigue developed by the MS Council for Clinical Practice Guidelines is shown in **Table 3**.<sup>6</sup> True MS-related fatigue is a feeling of lethargy that persists even if a person gets a good night’s sleep, but in reality this condition is difficult to distinguish from sleepiness due to inadequate rest. In some cases, the person with MS may be unaware that a sleep disorder such as obstructive sleep apnea or RLS is leading to irregular sleep patterns and may be causing or contributing to daytime feelings of sluggishness and difficulty concentrating. The Fatigue Severity Scale

## Table 2. Basic Components of a Sleep History

1. What is your main complaint?
  - Trouble going to sleep, trouble staying asleep, abnormal movements during sleep, MS symptoms such as spasticity or pain affecting sleep
2. Sleep habits:
  - What time do you go to bed? What time do you get up in the morning? How long does it take you to fall asleep? How many times do you wake up from sleep? How long are these awakenings? Has anyone observed or mentioned any sleep problems you might have? How does your sleep pattern change during the week versus the weekend? What wakes you up? What do you do in the last hour before sleep?
3. Daytime habits affecting sleep:
  - Caffeine consumption
  - Alcohol use
  - Use of prescription or nonprescription drugs or supplements
  - Shift work or other unusual sleep patterns
  - Napping habits
4. Screening questionnaires:
  - STOP-BANG (for sleep apnea)
  - URGE (for RLS)
  - Epworth Sleepiness Scale
  - Fatigue Severity Scale
  - Depression/anxiety questionnaire (Beck Depression Index or Hamilton Rating Scale for Depression/Hamilton Rating Scale for Anxiety<sup>14</sup>)
5. Physical exam
  - Cardiopulmonary exam
  - Throat exam (large tongue, tonsils, crowded oral pharynx)
  - Neurologic exam

MS=multiple sclerosis; RLS=restless legs syndrome.

(FSS; **Table 4**) and the Modified Fatigue Impact Scale (MFIS) are among the commonly used measures of MS fatigue.<sup>18,19</sup>

MS nurses may find that their patients are more aware of problems associated with daytime sleepiness or an overall sensation of fatigue than they might be of their specific sleep-related problems. Even sleep specialists admit that the distinction between fatigue and sleepiness can be difficult to make, in part because people have many different ways of describing the same symptoms. In a study by University of Michigan research-

ers, 190 patients with sleep apnea (without MS) were more likely to use the term “lack of energy” to describe their primary complaint rather than describing themselves as sleep-deprived, even though their underlying problem was related to inadequate sleep.<sup>20</sup>

In a small study involving 66 patients with MS who were evaluated using polysomnography, 96% of those testing positive for fatigue (based on the Modified Fatigue Impact Scale) were found to have a relevant sleep disorder, including sleep-related breathing disorders (27% of fatigued

### Table 3. MS Council for Clinical Practice Guidelines Definition of MS-related Fatigue<sup>6</sup>

Primary MS-related fatigue is defined as significant persistent fatigue despite:

- Management of all confounding medical problems
- Adjustment of medications as permitted
- Management of depression
- Management of sleep disruption
- Management of mobility issues in severely impaired individuals

MS=multiple sclerosis.

patients with MS). Having a sleep disorder was associated with a significantly increased risk of fatigue in MS.<sup>21</sup>

A common tactic among practitioners in both primary care and specialized MS care is to prescribe a stimulant if a patient complains of daytime fatigue, and to prescribe a hypnotic or other sleep aid if the person describes difficulty sleeping. Obviously, these data suggest it would be better to dig deeper into the possible underlying causes of the patient's symptoms rather than simply prescribing medications.

### RLS as a Comorbidity of MS

Multiple studies have established a greater prevalence of RLS in people with MS than in the gen-

### Table 4. Fatigue Severity Scale (FSS)<sup>18</sup>

Circle the number between 1 and 7 that best fits the following statements. This refers to your usual way of life within the last week. 1 indicates "strongly disagree" and 7 indicates "strongly agree."

- |  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
| 1. My motivation is lower when I am fatigued.                                | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Exercise brings on my fatigue.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. I am easily fatigued.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Fatigue interferes with my physical functioning.                          | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Fatigue causes frequent problems for me.                                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. My fatigue prevents sustained physical functioning.                       | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Fatigue interferes with carrying out certain duties and responsibilities. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. Fatigue is among my most disabling symptoms.                              | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. Fatigue interferes with my work, family, or social life.                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Scoring: Total score of  $\geq 36$  suggests fatigue should be evaluated by a health professional.  
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eral population.<sup>22-26</sup> In a survey of 251 consecutive patients in an MS clinic, Baylor College of Medicine researchers found that 33.5% had symptoms consistent with RLS.<sup>26</sup> Among those with MS who scored positive for RLS, symptoms were found to be mild in just 4%, but were moderate in 37%, severe in 42%, and very severe in 17%.<sup>26</sup> International studies have shown similar RLS prevalence among people with MS, with rates ranging from 19% in the Italian REMS study to 37% in a French Canadian study.<sup>22,24</sup> Reasons for the comorbidity of MS and RLS have not yet been elucidated.<sup>5</sup> Dopamine deficiency and low iron levels in the brain are thought to be part of the underlying pathology of RLS, thus dopamine agonists are often used in treatment.

An important question for the MS care practitioner is how to distinguish symptoms of spasticity from those of RLS. While this is not always a clear distinction, the person with RLS typically does not describe pain, but more often has an itching or “crawling” sensation that is usually alleviated when he or she moves the legs. Spasticity, on the other hand, is usually described by patients as a sensation of sharp pains, cramps, or a “Charley horse.” It is also possible that a person with MS may experience both spasticity and RLS. A screening questionnaire called “URGE” is used in

the diagnosis of RLS, based on the National Institutes of Health’s criteria for diagnosis (**Table 5**).<sup>27</sup>

## Sleep Apnea and MS

Sleep apnea (usually categorized as “obstructive sleep apnea” or OSA) occurs commonly in the general population (affecting 2% to 4% of adults) and at a significantly greater prevalence among people with MS.<sup>5,28-30</sup> In both groups, this condition frequently remains widely unrecognized and underdiagnosed.<sup>5</sup> In a small prospective study of 62 patients with MS evaluated using sleep questionnaires, 77% were found to have OSA (defined as apnea-hypopnea index greater than 15 events per hour).<sup>31</sup> Another group evaluated 103 patients presenting to an MS clinic using sleep apnea, fatigue, and sleepiness scales, and found that 40% screened as being at high risk for OSA.<sup>32</sup> A follow-up study is underway to determine the rate of OSA as confirmed by polysomnography among this group.

Sleep-disordered breathing is the hallmark of OSA. An “apnea” is defined as a suspension of external breathing. During sleep apnea episodes, the patient stops breathing due to airway obstruction for a period of time ranging from a few seconds to a minute or more. The person may cough, choke, or snort loudly to reinitiate respira-

**Table 5. URGE Questionnaire for Restless Legs Syndrome<sup>27</sup>**

<b>Urge</b>	Do you have an urge to move your legs?	_____
<b>Rest</b>	Do the symptoms get worse with rest?	_____
<b>Get up</b>	Do symptoms improve when you get up and walk around?	_____
<b>Evening</b>	Is there an evening predominance to symptoms?	_____



tion. Signs of sleep apnea include daytime sleepiness or fatigue, multiple nighttime awakenings, snoring, and choking episodes or obvious cessation of breathing during sleep. Polysomnographic evidence of five or more apneas or hypopneas per hour is diagnostic of OSA.<sup>20,28</sup> Patients with OSA may experience fatigue, decreased concentration, mood changes, erectile or sexual dysfunction, nocturia, and mood changes, which may mirror or mimic common symptoms associated with MS.<sup>33,34</sup>

A useful screening tool for OSA is the STOP-BANG questionnaire (**Table 6**), which can be administered in the office or waiting area. Patients who answer “yes” to three or more questions are considered at high risk for OSA and should be referred to a sleep specialist or for an overnight sleep study (polysomnography).<sup>32</sup>

The STOP-BANG questionnaire has been validated in the general population as well as in

people with MS as a highly sensitive screening for OSA.<sup>32</sup> While the precise reasons for the comorbidity of MS and OSA are not known, some possible explanations include:

- symptomatic medications for pain or spasticity that may relax muscle tone in the pharynx;
- inactivity due to disability increasing the risk of obesity; and
- brainstem lesions in areas that regulate motor neuron control of the upper airway.<sup>35</sup>

Because obesity is a significant and well-recognized risk factor for OSA, many clinicians are surprised to find this condition in patients who are normal weight or even underweight. This highlights the need for screening and appropriate diagnostic efforts, rather than relying on a physical assessment alone. Patients who are shown to be at high risk for OSA based on the STOP-BANG questionnaire should be referred for a sleep study,

**Table 6. STOP-BANG Questionnaire for Sleep Apnea<sup>32</sup>**

1. <b>Snoring:</b> Do you snore loudly (louder than talking or loud enough to be heard through closed doors)?	_____
2. <b>Tiredness:</b> Do you often feel tired, fatigued, or sleepy during the daytime, even after a “good” night’s sleep?	_____
3. <b>Observed apnea:</b> Has anyone ever observed you stop breathing during your sleep?	_____
4. <b>Pressure:</b> Do you have (or are you being treated for) high blood pressure?	_____
5. <b>Body mass index:</b> BMI >35*	_____
6. <b>Age:</b> Older than 50 years	_____
7. <b>Neck size:</b> Neck circumference measure >15 inches (40 cm)	_____
8. <b>Gender:</b> Male gender	_____

\*Refer to BMI chart.  
BMI=body mass index.

either directly with documentation from the screening, or through a sleep specialist, depending upon institutional policies and practices. If the polysomnography indicates OSA, continuous positive airway pressure (CPAP) is the treatment of choice.<sup>15,28</sup> CPAP has been shown to be highly effective in treating OSA and, if the patient is adherent to the therapy, will often greatly increase sleep quality and thus quality of life. Although patients may be resistant to a treatment that seems so intrusive (on top of all the other MS treatments they may be receiving), they can be reassured that CPAP has a high benefit-to-risk ratio with low or no side effects relative to other treatments they may be receiving. Many people with MS report improved functioning, more energy, less cognitive dysfunction, and less fatigue following treatment. Reduction of headaches can be another positive benefit to CPAP treatment.

Alternative approaches to CPAP in sleep apnea (or for patients who refuse CPAP therapy) include:

- lifestyle changes (can be used along with CPAP), including minimizing alcohol use, supine sleep, encouraging healthy body weight, and designating 7 to 8 hours per day for sleep;
- reducing the use of sedating medications (including benzodiazepines and narcotics);
- having dental appliances made by dental professionals specializing in sleep issues; and
- undergoing surgical treatments to increase airflow in the oral pharynx, when indicated.

While the literature shows an approximately 70% rate of adherence for CPAP, nurses may know patients who have the equipment sitting unused in a closet.<sup>36</sup> Educating patients about the potential benefits and the need for sleep apnea treatment may help to increase adherence and overcome resistance and misconceptions about CPAP.

## Criteria for Referral for a Sleep Study

An overnight sleep study, or polysomnography, is the gold standard for diagnosing sleep apnea. However, these studies can be costly and burdensome or scary for the patient.<sup>31</sup> A sleep study may be unnecessary if the sleep problem can be clearly linked to another clinical condition like RLS, depression/anxiety, or bowel/bladder control. This is where screening tools can be especially useful. If a patient complains of being very tired, wakes frequently during the night, and has a history of snoring, a positive STOP-BANG questionnaire (“yes” to 3 or more items) would present a strong case for referral for a sleep study to evaluate for possible sleep apnea. Presence of cardiovascular disease is an additional factor that would increase suspicion.

Some institutions may require that patients consult with a sleep specialist before a sleep study can be ordered. A combination of the STOP-BANG questionnaire and the Epworth Sleepiness Scale (**Table 7**) can serve as useful documentation for these services.<sup>37,38</sup>

## Bowel and Bladder Problems Affecting Sleep

Bladder dysfunction, especially nocturia, is one of the most common symptoms of MS, affecting between 50% and 75% of patients.<sup>39,40</sup> Demyelination has several direct effects on bladder function, including: 1) loss of sensation of bladder fullness, 2) loss of cortical inhibition of the micturition reflex, which results in frequency, urgency, and urge incontinence, 3) loss of bladder contractility, and 4) loss of coordination between the urinary sphincters and bladder contraction.<sup>41</sup> Functionally, patients experience problems containing urine, problems emptying urine, or a combination of both. Women with MS experience bladder problems approximately twice as often as men.<sup>40</sup> Blad-

## Table 7. Epworth Sleepiness Scale<sup>38</sup>

How likely are you to doze off or fall asleep in the following situations, in contrast to feeling just tired? This refers to your usual way of life in recent times.

- 0 = no chance of dozing
- 1 = slight chance of dozing
- 2 = moderate chance of dozing
- 3 = high chance of dozing

Sitting and reading	_____
Watching TV	_____
Sitting inactive in a public place (e.g., a theater or a meeting)	_____
As a passenger in a car for an hour without a break	_____
Lying down to rest in the afternoon when circumstances permit	_____
Sitting and talking to someone	_____
Sitting quietly after a lunch without alcohol	_____
In a car, while stopped for a few minutes in traffic	_____

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Scoring: 1-6=sufficient sleep; 7-8=normal range, 9+=consult a sleep specialist.

der problems have a direct impact on sleep, often leading to awakening in the middle of the night, or what is called “middle insomnia.”<sup>3</sup>

For some people with MS, addressing bladder symptoms can be key to improving sleep quality. Treatment of neurogenic bladder requires an individualized approach that may involve adjusting medications or dosages used to ensure that patients have appropriate control for daytime while also providing for an adequate sleep interval at night.<sup>41</sup> Self-catheterization before bedtime may be a useful strategy for patients who are already using self-catheterization periodically during the daytime.

Interestingly, research has suggested that OSA may actually be a potential cause of nocturia,

independent of MS-related bladder problems. People with OSA often awaken and need to urinate during the night. This may be due to elevated levels of brain natriuretic peptide, a diuretic peptide, in people with OSA.<sup>42</sup> Thus treatment of OSA with CPAP may help to alleviate nocturia in some people who were inclined to “blame the MS” for their nighttime bladder control difficulties.

### Conclusion

Plentiful, restful sleep can certainly contribute to better quality of life and overall health, regardless of a person’s medical conditions. However, many factors associated with MS and with individual

lifestyle factors can interfere with a person's ability to maintain regular patterns of sufficient sleep quantity and quality. By being aware of the factors that interfere with sleep, knowing the key questions and screening tools to use, and recognizing possible interventions, MS nurses can help their patients with MS to improve sleep quality on an ongoing basis.

## References

- National Institutes of Health State of the Science Conference statement on Manifestations and Management of Chronic Insomnia in Adults, June 13-15, 2005. *Sleep*. 2005;28(9):1049-1057.
- Merlino G, Fratticci L, Lenchig C, et al. Prevalence of 'poor sleep' among patients with multiple sclerosis: an independent predictor of mental and physical status. *Sleep medicine*. 2009;10(1):26-34.
- Stanton BR, Barnes F, Silber E. Sleep and fatigue in multiple sclerosis. *Mult Scler*. 2006;12(4):481-486.
- Bamer AM, Johnson KL, Amtmann D, et al. Prevalence of sleep problems in individuals with multiple sclerosis. *Mult Scler*. 2008;14(8):1127-1130.
- Brass SD, Duquette P, Proulx-Therrien J, et al. Sleep disorders in patients with multiple sclerosis. *Sleep Med Rev*. 2010;14(2):121-129.
- Kinkel RP. MS Fatigue Workshop: Update on Evaluation and Management. Available at: [http://www.ms-care.org/cmssc/images/ppt/Kinkel\\_fatigue.ppt](http://www.ms-care.org/cmssc/images/ppt/Kinkel_fatigue.ppt).
- McCall WV. A psychiatric perspective on insomnia. *J Clin Psychiatry*. 2001;62 (Suppl 10):27-32.
- Byatt N, Rothschild AJ, Riskind P, et al. Relationships between multiple sclerosis and depression. *J Neuropsychiatry Clin Neurosci*. 2011;23(2):198-200.
- Feinstein A. Multiple sclerosis and depression. *Mult Scler*. 2011;17(11):1276-1281.
- Roth T. Insomnia: definition, prevalence, etiology, and consequences. *JCSM: Official Publication of the American Academy of Sleep Medicine*. 2007;3(5 Suppl):S7-10.
- Kravitz HM, Zhao X, Bromberger JT, et al. Sleep disturbance during the menopausal transition in a multi-ethnic community sample of women. *Sleep*. 2008;31(7):979-990.
- Leger D, Poursain B, Neubauer D, et al. An international survey of sleeping problems in the general population. *Curr Med Res Opin*. 2008;24(1):307-317.
- Hossain JL, Shapiro CM. The prevalence, cost implications, and management of sleep disorders: an overview. *Sleep Breath*. 2002;6(2):85-102.
- Moran PJ, Mohr DC. The validity of Beck Depression Inventory and Hamilton Rating Scale for Depression items in the assessment of depression among patients with multiple sclerosis. *J Behav Med*. 2005;28(1):35-41.
- Epstein LJ, Kristo D, Strollo PJ, Jr., et al. Clinical guideline for the evaluation, management and long-term care of obstructive sleep apnea in adults. *J Clin Sleep Med*. 2009;5(3):263-276.
- Giovannoni G. Multiple sclerosis related fatigue. *J Neurol Neurosurg Psychiatry*. 2006;77(1):2-3.
- Courtney AM, Castro-Borrero W, Davis SL, et al. Functional treatments in multiple sclerosis. *Curr Opin Neurol*. 2011;24(3):250-254.
- Krupp LB, LaRocca NG, Muir-Nash J, et al. The fatigue severity scale. Application to patients with multiple sclerosis and systemic lupus erythematosus. *Arch Neurol*. 1989;46(10):1121-1123.
- Kos D, Kerckhofs E, Carrea I, et al. Evaluation of the Modified Fatigue Impact Scale in four different European countries. *Mult Scler*. 2005;11(1):76-80.
- Chervin RD. Sleepiness, fatigue, tiredness, and lack of energy in obstructive sleep apnea. *Chest*. 2000;118(2):372-379.
- Veauthier C, Paul F. Fatigue in multiple sclerosis: which patient should be referred to a sleep specialist? *Mult Scler*. 2012;18(2):248-249.
- Auger C, Montplaisir J, Duquette P. Increased frequency of restless legs syndrome in a French-Canadian population with multiple sclerosis. *Neurology*. 2005;65(10):1652-1653.
- Fragoso YD, Finkelsztejn A, Gomes S, et al. Restless legs syndrome and multiple sclerosis: a Brazilian multicenter study and meta-analysis of the literature. *Arq Neuropsiquiatr*. 2011;69(2A):180-183.
- Manconi M, Fabbri M, Bonanni E, et al. High prevalence of restless legs syndrome in multiple sclerosis. *Eur J Neurol*. 2007;14(5):534-539.
- Deriu M, Cossu G, Molari A, et al. Restless legs syndrome in multiple sclerosis: a case-control study. *Mov Disord*. 2009;24(5):697-701.
- Suarez-Zambrano GA, Pena JA, Avila M, et al. Frequency and severity of restless legs syndrome in multiple sclerosis: a population study from Southeast Texas. Program and abstracts of the American Academy of Neurology 60th Annual Meeting; April 12-19, 2008; Chicago. P06.146.
- National Institutes of Health. National Institute of Neurological Disorders and Stroke. Restless Legs Syndrome Fact Sheet. November 25, 2011; Available at: [http://www.ninds.nih.gov/disorders/restless\\_legs/detail\\_restless\\_legs.htm](http://www.ninds.nih.gov/disorders/restless_legs/detail_restless_legs.htm).
- Ho ML, Brass SD. Obstructive sleep apnea. *Neurol Int*. 2011;3(3):e15.
- Kaminska M, Kimoff RJ, Schwartzman K, et al. Sleep disorders and fatigue in multiple sclerosis: evidence for association and interaction. *J Neurol Sci*. 2011;302(1-2):7-13.
- Paul F, Veauthier C. Fatigue and sleep disorders in multiple sclerosis: is obstructive sleep apnea a link? *Sleep Breath*. 2012.
- Trojan D, Bar-Or A, Da Costa A, et al. The usefulness of sleep questionnaires in predicting objective sleep abnormalities in multiple sclerosis patients. Program and abstracts of the 25th Congress of the European Committee for the Treatment and Research in Multiple Sclerosis (ECTRIMS). September 9-12, 2009; Dusseldorf, Germany.
- Dias RA, Hardin KA, Rose H, et al. Sleepiness, fatigue, and risk of obstructive sleep apnea using the STOP-BANG questionnaire in multiple sclerosis: a pilot study. *Sleep Breath*. 2012.
- Caples SM, Gami AS, Somers VK. Obstructive sleep apnea. *Ann Intern Med*. 2005;142(3):187-197.
- Gaig C, Iranzo A. Sleep-disordered breathing in neurodegenerative diseases. *Curr Neurol Neurosci Rep*. 2012;12(2):205-217.
- Chaudhary BA, Elguindi AS, King DW. Obstructive sleep apnea after lateral medullary syndrome. *South Med J*. 1982;75(1):65-67.
- Basoglu OK, Midilli M, Midilli R, et al. Adherence to continuous positive airway pressure therapy in obstructive sleep apnea syndrome: effect of visual education. *Sleep Breath*. 2011.
- Chervin RD. The multiple sleep latency test and Epworth sleepiness scale in the assessment of daytime sleepiness. *J Sleep Res*. 2000;9(4):399-401.
- Johns MW. A new method for measuring daytime sleepiness: the Epworth sleepiness scale. *Sleep*. 1991;14(6):540-545.
- Hawker KS, Frohman EM. Bladder, bowel, and sexual dysfunction in multiple sclerosis. *Curr Treat Options Neurol*. 2001;3(3):207-214.
- Koldewijn EL, Hommes OR, Lemmens WA, et al. Relationship between lower urinary tract abnormalities and disease-related parameters in multiple sclerosis. *J Urol*. 1995;154(1):169-173.
- de Seze M, Ruffion A, Denys P, et al. The neurogenic bladder in multiple sclerosis: review of the literature and proposal of management guidelines. *Mult Scler*. 2007;13(7):915-928.
- Calvin AD, Somers VK, van der Walt C, et al. Relation of natriuretic peptide concentrations to central sleep apnea in patients with heart failure. *Chest*. 2011;140(6):1517-1523.

# CP Counseling Points™

## Helping People with MS to Improve Sleep Quality

- Sleep problems affect between 25% and 54% of people with multiple sclerosis (MS) and often remain unrecognized. Higher rates of insomnia, obstructive sleep apnea (OSA), and restless legs syndrome (RLS) have been reported among people with MS than in the general population.
- MS symptoms and comorbid conditions such as fatigue, depression, and anxiety may be caused by or exacerbated by sleep dysfunction. Other conditions common in MS that may affect sleep include bladder and bowel dysfunction, spasticity and/or pain, and polypharmacy.
- Basic components of a sleep history include the patient interview; physical, neurologic, and cardiopulmonary examinations; and screening questionnaires including STOP-BANG, URGE, Epworth Sleepiness Scale, Fatigue Severity Scale, and depression/anxiety screening tools.
- True MS fatigue is a feeling of lethargy persisting even after a good night's sleep, but in reality this condition is difficult to distinguish from sleepiness due to inadequate rest. A person with MS may be unaware that a sleep disorder such as OSA or RLS is causing or contributing to fatigue.
- RLS is observed at high rates in MS and may be difficult to distinguish from spasticity. RLS is typically described as an itching or “crawling” sensation alleviated when the person moves the legs, while spasticity is described as a sensation of sharp pains, cramps, or a “Charley horse.”
- OSA is highly prevalent in MS (an estimated 40% to 70% of patients) and may occur in the absence of obvious signs such as obesity. Patients with MS should be screened using the STOP-BANG questionnaire and, if positive, should be referred for a sleep study or to a sleep specialist.
- Bladder dysfunction related to demyelination includes loss of sensation of bladder fullness, urge incontinence, and loss of bladder contractility. Bladder dysfunction has a direct impact on sleep, particularly problems with awakening in the middle of the night. OSA can contribute to bladder dysfunction.
- People with MS should receive thorough exploration into the potential underlying causes and contributing factors of sleep disturbance before medications are prescribed that may mask rather than alleviate the condition.

# Counseling Points™

## Helping People with MS to Improve Sleep Quality

### Continuing Education Posttest

To receive contact hours, please read the program in its entirety, answer the following posttest questions, and complete the program evaluation. A certificate will be awarded for a score of 80% (9 correct) or better. A certificate will be mailed within 4 to 6 weeks. There is no charge for the CNE credit.

**By Mail:** Delaware Media Group, 66 S. Maple Ave., Ridgewood, NJ 07450

**By Fax:** (201) 612-8282

**Via the Web:** Applicants can access this program at the International Organization of MS Nurses' website, [www.IOMSN.org](http://www.IOMSN.org). Click on *Counseling Points* and follow the instructions to complete the online posttest and application forms.

#### PLEASE SELECT THE BEST ANSWER

- Sleep disorders occur in approximately 20% of the general population and:**
  - about the same rate in MS as in the general population
  - in 25% to 54% of people with MS
  - in 66% of people with MS
  - at similar rates in MS, but are made worse by MS symptoms
- Common disorders shown to occur at a greater prevalence in people with MS than in the general population include all of the following EXCEPT:**
  - restless legs syndrome (RLS)
  - obstructive sleep apnea (OSA)
  - sleep shift work disorder
  - depression/anxiety
- Among the screening questionnaires listed, which is useful for detecting high risk of OSA?**
  - STOP-BANG
  - URGE
  - MFIS
  - Epworth Sleepiness Scale
- An overnight sleep study should be ordered for all patients with MS who complain of sleep disturbance, to establish the underlying cause.**
  - True
  - False
- Physical examination during an evaluation for sleep quality would include neck circumference and oropharynx exam mainly because:**
  - cervical demyelination can lead to difficulty supporting the neck
  - obesity and crowded oropharynx are risk factors for OSA
  - the patient may be at risk for a respiratory infection
  - none of the above
- MS-related fatigue is defined as a significant, persistent fatigue that is present despite:**
  - adequate time to nap during the day
  - control of MS relapses through disease-modifying therapies
  - use of psychostimulants such as modafinil
  - management of confounding medical problems and adjustment of medications
- Restless legs syndrome (RLS) has been observed in what percentage of patients with MS?**
  - 6% to 12%
  - 13% to 22%
  - 19% to 37%
  - more than 50%
- Spasticity can usually be distinguished from RLS based on:**
  - patient description of symptoms
  - polysomnography
  - a trial of dopamine agonist therapy
  - a trial of baclofen therapy
- The URGE questionnaire is used to detect:**
  - urge incontinence
  - neurogenic bladder in MS
  - sleep apnea
  - RLS
- In people with MS, OSA is characterized by periodic cessation of breathing during sleep caused by:**
  - airway obstruction related to various causes
  - paralysis of the respiratory muscles during sleep
  - spasticity of the respiratory muscles during sleep
  - none of the above
- Because sleep apnea is associated with overweight or obesity, an underweight person with MS is unlikely to be affected by OSA.**
  - True
  - False
- The treatment of choice for OSA in people with MS is:**
  - surgery to increase airflow in the oral pharynx
  - continuous positive airway pressure (CPAP) therapy
  - increasing hypnotic medications to induce a sounder sleep
  - switching MS disease-modifying therapy to a therapy with low risk of cardiopulmonary effects

# Counseling Points™: Program Evaluation Form

## Helping People with MS to Improve Sleep Quality

Using the scale provided (Strongly Agree = 5 and Strongly Disagree = 1) please complete the program evaluation so that we may continue to provide you with high-quality educational programming. Please fax this form to **(201) 612-8282** or complete it online as instructed below.

5 = Strongly Agree    4 = Agree    3 = Neutral    2 = Disagree    1 = Strongly Disagree

**At the end of this program, I was able to:** *(Please circle the appropriate number on the scale.)*

- 1) Evaluate sources of sleep problems in patients with MS ..... 5 4 3 2 1
- 2) Assess how MS symptoms and comorbidities influence sleep problems ..... 5 4 3 2 1
- 3) Address correctable causes of sleep dysfunction ..... 5 4 3 2 1
- 4) Discuss indications for a sleep specialist consult or overnight sleep study ..... 5 4 3 2 1

**To what extent was the content:**

- 5) Well-organized and clearly presented ..... 5 4 3 2 1
- 6) Current and relevant to your area of professional interest ..... 5 4 3 2 1
- 7) Free of commercial bias ..... 5 4 3 2 1
- 8) Clear in providing disclosure information ..... 5 4 3 2 1

**General Comments**

9) As a result of this continuing education activity (check only one):

- I will modify my practice. (If you checked this box, how do you plan to modify your practice?) \_\_\_\_\_
- I will wait for more information before modifying my practice.
- The program reinforces my current practice.

Suggestions for future topics/additional comments: \_\_\_\_\_

**Follow-up**

As part of our continuous quality-improvement effort, we conduct postactivity follow-up surveys to assess the impact of our educational interventions on professional practice. Please check one:

- Yes, I would be interested in participating in a follow-up survey.
- No, I would not be interested in participating in a follow-up survey.

There is no fee for this educational activity.

Posttest Answer Key	1	2	3	4	5	6	7	8	9	10	11	12

**Request for Credit** *(Please print clearly)*

Name \_\_\_\_\_ Degree \_\_\_\_\_

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