

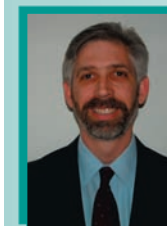
Dear Colleague,

In this issue of the Sleep HealthCenters Newsletter, our feature article on sleep and aging is written by Mangala Narasimhan, DO, Medical Director of the Sleep HealthCenter at Beth Israel Medical Center in New York City. Dr. Narasimhan discusses how sleep patterns change with age, as well as describing what sleep disorders are common in the elderly and how those sleep disorders present. Important in her discussion is how the quality of sleep plays a role in predicting how the elderly perceive their physical and mental health-related quality of life.

In the CEO Corner, Paul Valentine discusses our new affiliations with Southcoast Hospitals Group and Marlborough Hospital, both in Massachusetts. He also announces the expansion of our center affiliated with Beth Israel Medical Center in New York City due to the growing demand for sleep medicine services. In addition he describes the launching of our first edition of The Sleep Apnea Awareness Newsletter for patients.

Please be aware that as of July 1st, 2007, Tufts Health Plan has instituted a new policy requiring pre-certification for sleep studies and CPAP/Bilevel PAP set-ups. For patients being referred for sleep studies or PAP setups, a history and physical describing the findings prompting the evaluation must accompany the requisition form so we can complete the pre-certification process.

If you have any questions about sleep disorders, our services, our affiliations or Tufts' new pre-certification policy, please feel free to contact us.



Sincerely,
Lawrence J. Epstein, MD
Medical Director
Sleep HealthCenters, LLC


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Sleep and Aging

Mangala Narasimhan, DO

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Instructor of Clinical Medicine, Albert Einstein College of Medicine
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Sleep patterns change with age. Aging is characterized by changes in circadian rhythms, sleep architecture, sleep quality and the frequency of sleep disorders. These changes result in recurrent sleep complaints and the frequency of complaints have been found to predict the general physical and mental health-related quality of life status in elderly populations with comorbid medical and mental illness.

Age-Related Changes

Changes in circadian physiology include an advance of the circadian sleep phase, a shortening of the free-running sleep period, and a desynchronization of rhythms. Circadian rhythm changes have a relationship to age-related retinal changes, as well as changes in suprachiasmatic nucleus and pineal gland function. The suprachiasmatic nucleus is the site of the circadian pattern generator and is normally influenced by light exposure (through the retina) and melatonin (secreted by the pineal gland). Age-related behavioral changes, such as decreases in physical activity and photic stimulation, can also affect the circadian pattern generator. Circadian rhythm changes are frequently associated with a reduction in nighttime sleep quality, a decrease in daytime alertness, and attenuation in cognitive performance.

Sleep architecture, the distribution and pattern of sleep stages, changes as people age. A 2004 study looking at over 6000 patients showed that stage 1 and 2 sleep was significantly higher in individuals older than 61 years and stage 3 and 4 was significantly lower in those older than 54 as compared to younger individuals. The percentage of time spent in rapid eye movement (REM) sleep was also lower in those 61 or older and sleep efficiency decreased significantly with increasing age. The number of awakenings also increases.

The role of menopause is important in assessing the cause of sleep architecture change in elderly females. Studies have found that post-menopausal sleep is worse than in young controls. There is prolonged sleep latency, many awakenings, a shorter sleep time, and a significant difference in the subjective quality of sleep. There is also less REM sleep. Recovery sleep after sleep deprivation seems to be preserved in post-menopausal women. Hormone replacement therapy has not been shown to improve sleep and has been shown to worsen recovery sleep.

Primary sleep disorders, as well as sleep problems secondary to other medical problems, medications or social conditions, may disturb sleep and are more common in the elderly. The prevalence of obstructive sleep apnea (OSA), insomnia and restless legs syndrome increases with age. Several sleep disorders, such as REM sleep behavior disorder and advanced sleep phase circadian rhythm disorder typically don't appear until middle age or later. Many comorbid illnesses that can disrupt sleep, such as arthritis, heart failure, stroke, bronchitis or emphysema, are more common in the elderly. In addition, many medications that older adults take routinely affect their ability to sleep.

Sleep Complaints in the Elderly

The chief sleep complaints of older adults include waking not feeling rested, waking too early, difficulty falling asleep, frequent daytime napping and nocturnal waking. As a result of poor sleep, they also complain of difficulty sustaining attention, slowed response time and decrease in memory and performance.

There is a discrepancy between the number of complaints and the prevalence of sleep disorders. While aging results in significant changes in sleep pattern and the frequency of sleep disorders, there is not the expected increase in complaints of insomnia and sleep apnea as many individuals seem to adapt to their changing sleep patterns and what they consider acceptable sleep. As a result, this population tends to under-report symptoms of common sleep disorders.

Sleep Disorders and Aging

As in the general population, sleep disordered breathing is a significant cause of (continued on page 2)


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Sleep HealthCenters is a network of sleep medicine centers staffed by experts in the field of sleep medicine. Our integrated care system provides all the services needed to diagnose and treat patients with the entire array of sleep disorders including obstructive sleep apnea, insomnia, narcolepsy and restless legs syndrome.

In this issue of the Sleep HealthCenters Newsletter...

- ▶ Sleep and Aging by Mangala Narasimhan, DO
- ▶ CEO Corner:
 - New Affiliation with Southcoast Hospitals Group
 - Sleep HealthCenters at Beth Israel Medical Center (New York) Doubles in Size
 - Affiliation with Massachusetts Eye and Ear Infirmary and Marlborough Hospital
 - Launch of Sleep Apnea Awareness E-Newsletter
 - Upcoming CPAP Support Groups
- ▶ Tufts Health Plan New Pre-Certification Policy
- ▶ Research Activities

Massachusetts Affiliations: Beth Israel Deaconess Medical Center, Brigham and Women's Hospital, Chadwick Medical Associates, Faulkner Hospital, Hallmark Health, Marlborough Hospital, Massachusetts Eye and Ear Infirmary, McLean Hospital, New England Sinai Hospital, Southcoast Hospitals Group, UMass Memorial Medical Group; *New York Affiliations:* Beth Israel Medical Center

Massachusetts Locations: Bedford, Beverly, Boston, Brighton, Framingham, Jamaica Plain, Marlborough, Medford, North Dartmouth, Stoughton, Weymouth, Worcester; *New York Locations:* Manhattan

For more information, please contact us at: 1-877-SLEEPHC (1-877-753-3742) or visit our website at www.sleephealth.com.

Requisition forms are available on our website.



Sleep HealthCenters and Southcoast Hospitals Group Join Forces to Open New Sleep Medicine Lab in North Dartmouth

Sleep HealthCenters and Southcoast Hospitals Group recently completed an affiliation agreement to create a comprehensive sleep medicine program to diagnose and treat individuals with sleep disorders.

The new Sleep HealthCenter affiliated with Southcoast Hospitals Group opened June 18 with a sleep diagnostic laboratory located at the Residence Inn, 181 Faunce Corner Road, North Dartmouth, Mass. Each diagnostic bedroom includes a private bath and all the amenities of the hotel including a complimentary hot breakfast buffet.

Sleep HealthCenters will also soon open a sleep medicine clinic in North Dartmouth, offering services for patients with all types of sleep disorders. Services will include medical consultations, treatment options (including CPAP), education and follow-up care.

Arun B. Rajan, MD, will serve as Medical Director of the new center. Dr. Rajan had been the Director of Sleep Medicine Services at Southcoast Hospitals Group. Employees who previously worked at the Southcoast Sleep Lab remain employees of Southcoast and now work at the Sleep HealthCenter in North Dartmouth.

To inquire about services at the Sleep HealthCenter affiliated with Southcoast Hospitals Group, call 877-SLEEPHC (877-753-3742).

Sleep HealthCenters® Newsletter

(continued from page 1) interrupted, poor quality sleep in elderly individuals. It often remains undiagnosed in the elderly. As opposed to younger patients, OSA in the elderly is less likely to be related to weight-related measures such as body mass index (BMI) and neck circumference, but may be related to upper-airway muscle changes, genioglossus muscle fiber type distribution and changes in respiratory drive. Aging has been shown to contribute significantly to an increase in the size of lateral pharyngeal fat pads, resulting in a reduction in the size of the upper airway, independent of BMI.

Other sleep disorders that are seen in the elderly are REM sleep behavior disorder, advanced sleep phase disorder and periodic limb movements of sleep. REM sleep behavior disorder is seen in men more than women and usually above the age of 60. The muscle atonia that normally accompanies REM sleep is not seen and patients act out their dreams, which are usually vivid, violent dreams of being attacked. The symptoms are best described by the bed partner. Two-thirds of men diagnosed with REM sleep behavior disorder after the age of 50 go on to develop a parkinsonian disorder. Advanced sleep phase disorder is a circadian rhythm disorder that is extremely common in the elderly and is believed to be linked to inactivity, less exposure to sunlight, and changing environmental cues. The circadian sleep phase shifts earlier and earlier so that those with this problem go to sleep in the early evening and awake early in the morning. Periodic limb movements of sleep are very common in the elderly, presenting as repetitive movements that can fragment sleep. A surprising finding is that they have not been found to be associated with excessive daytime sleepiness in the elderly.

Multiple other factors interact to increase the risk of hypersomnolence in older adults. These factors

include chronic pain, respiratory disorders and medications. There is a high prevalence of chronic pain in the elderly and this likely has a significant affect on the quality and quantity of sleep. Also, the medications taken both for pain and for many of their co-morbid conditions may cause sleepiness as a side effect, including antihistamines, antihypertensives, antidepressants, antipsychotics, anticonvulsants, and analgesics.

Treatment of Sleep Disorders

In addition to disorder-specific therapies, general recommendations for treating sleep disorders in the elderly include changing medications or the timing of medications that interfere with sleep, maintaining regular exercise regimens, avoidance of fluid intake in the evening and avoidance of alcohol and caffeine. Another important feature is recognizing depression and treating it appropriately.

The first line therapy for OSA in the elderly is continuous positive airway pressure (CPAP). However, the elderly have many more problems with compliance to CPAP and other treatment measures. This may be related to inadequate symptom resolution, problems with dexterity, understanding and memory. Provisions for addressing these problems need to be part of OSA management programs for the elderly.

Treatment of insomnia includes identifying and correcting factors that contribute to sleep problems as well as directly addressing the sleep complaint. Magnesium and calcium deficiencies have been shown to cause an increase in sleep fragmentation and sleep maintenance insomnia. Cognitive behavioral therapy is an effective option for treating insomnia in the elderly and can also be combined with medications. Hypnotic use has been shown to decrease insomnia and there is a suggestion that it may protect against falls and hip

fractures. There is no clear consensus on the safety of sleep medications in the elderly. Appropriate treatment should be guided by the severity of symptoms and concurrent medical problems and medications. Efficacious pharmacologic interventions are the non-benzodiazepine hypnotics zolpidem, zaleplon, eszopiclone and ramelteon. The benzodiazepine hypnotics may also be used safely in this population. In general, for the older population, hypnotics need to be given at the lowest possible dose for a short period of time, as other treatments are being pursued. These patients need to be followed closely.

One study looked to see if naps could be used to increase total 24 hour sleep time in the elderly. Napping in the early afternoon for 30-90 minutes did not have an effect on nighttime sleep quality or duration and resulted in a significant increase in total 24 hour sleep amounts. This increased sleep resulted in enhanced cognitive and psychomotor performance throughout the next day. Other studies have linked napping in the elderly to an increase in depression and higher mortality.

Given that sleep complaints are common in the elderly and seem to be directly related to quality of life scores, questions regarding sleep should be an integral component of most clinical evaluations. Identification of sleep disorders can lead to improvement in chronic illnesses and quality of life for older adults. Attention should be paid to the sleep history, the interaction with medical and psychiatric history, medications, level of activity and sleep-wake schedules. Although the sleep pattern changes over the course of a lifetime, not all sleep disturbances are a natural consequence of aging and are frequently due to treatable conditions.

For a fully referenced version of this article, visit the Sleep HealthCenters website at www.sleephealth.com.



CEO Corner

Paul S. Valentine

President and
Chief Executive Officer

We are thrilled to announce our new affiliation with Southcoast Hospitals Group (Southcoast) in Massachusetts, which includes St. Luke's Hospital in New Bedford, Charlton Memorial Hospital in Fall River and Tobey Hospital (Tobey) in Wareham. The first center under this new affiliation is a four-bed sleep center at the Residence Inn (Marriott) in North Dartmouth, Massachusetts. Southcoast previously ran a sleep lab at Tobey Hospital, which has been relocated to the centrally-located hotel in North Dartmouth. Arun B. Rajan, MD, who was previously in charge of the Southcoast Sleep Center at Tobey, is the medical director, and Kari Gale is the Regional Lab Manager. We look forward to working with Southcoast to build a strong, high quality sleep program in the South Coast area.

Due to the growing demand for sleep-related diagnostics and treatment, we have doubled the size of our Sleep HealthCenter at Beth Israel Medical Center in New York City. Our increased capacity will allow us to help more New York City-area residents get the care they need for their sleep problems and potentially improve overall health. The center is located on First Avenue at 16th Street in the Linsky Pavilion. Services include medical consultations, treatment options including CPAP (continuous positive airway pressure), education, and follow-up care.

We are also pleased to announce that we have completed affiliation agreements with Massachusetts Eye and Ear Infirmary in Boston and Marlborough Hospital in Marlborough, Massachusetts to open full-service sleep

medicine centers. I will provide more details about these new centers in our next newsletter.

We have issued our first edition, summer 2007, of The Sleep Apnea Awareness Newsletter for patients. This seasonal e-newsletter contains a feature article to educate patients on clinical issues related to sleep apnea. Our CPAP Counselor's Corner shares real patient experiences. We also highlight new CPAP equipment in our What's New in CPAP section, and provide information regarding our sleep apnea awareness and support group meetings and other helpful links. It is emailed to our patients diagnosed with sleep apnea and can also be read on our website: www.sleephealth.com/cpap/e-newsletter.htm. In addition to educating patients through our newsletter, we also provide quarterly sleep apnea awareness and CPAP support group meetings. Our next scheduled meetings are reflected below. We encourage you to invite your patients who have been diagnosed with sleep apnea to attend.

September 24, 2007, 6:30-8:00 PM

Morse Institute Library

14 East Central Street – Natick, Mass.

Special Guest Speaker:

Sandra Horowitz, MD

Medical Director

Sleep HealthCenter at Framingham

November 7, 2007, 6:30-8:00 PM

Melrose Wakefield Hospital (Perkins Hall)

585 Lebanon Street – Melrose, Mass.

Special Guest Speaker:

Douglas B. Kirsch, MD

Regional Medical Director, Sleep HealthCenters

We are happy to continue to provide sleep medicine services to your patients. Please do not hesitate to contact us if you have any questions.

Tufts Health Plan Institutes New Pre-Certification Policy

As of July 1, 2007, Tufts Health Plan (Tufts) has instituted a new policy requiring pre-certification for sleep studies and CPAP/Bilevel PAP set-ups. For patients being referred for sleep studies, a history and physical must accompany the requisition form. This is required in order to pre-certify these services. Sleep HealthCenters will then obtain the necessary pre-certification from Tufts.

We appreciate your cooperation in providing the history and physical at the time the requisition is submitted so that we can make this a smooth process and prevent unnecessary delays in scheduling your patients.

If you have any questions regarding this new policy, please contact our reimbursement department at 978-774-7243.

Research Activities

Sleep HealthCenters is proud to work with some of the premier sleep researchers in the country. The following research studies are currently underway in conjunction with our partners. To take part in a study or for more information, please contact us toll free at 877-SLEEPHC (877-753-3742).

Portable Monitoring for Sleep Apnea

Sleep HealthCenters is evaluating several portable monitors which will eventually be used in the patient's home to diagnose obstructive sleep apnea. During the course of the study, the monitor will be assessed for efficacy in the sleep laboratory and in the patient's home. The patient will evaluate the monitor's comfort and ease of use. Please contact Melissa Maywalt at 617-783-1441 or 617-783-1496 x 298 (voicemail).

Middle of the Night Insomnia

This study is looking at how an investigational medication works when taken in the middle of the night by adults who wake up and can't get back to sleep. Please contact Melissa Maywalt at 617-783-1441 or 617-783-1496 x 298 (voicemail).

Apnea Positive Pressure Long-Term Efficacy Study (APPLES)

The Sleep HealthCenter associated with Brigham and Women's Hospital is conducting a NIH-funded study that examines the long-term effects on quality of life, neurocognitive function, sleepiness and mood by using Continuous Positive Airway Pressure (CPAP) to treat sleep apnea.

Restless Legs Syndrome

The Sleep HealthCenter associated with Brigham and Women's Hospital is conducting two new research studies on treatments for Restless Legs Syndrome (uncomfortable sensations in the legs accompanied by the urge to move, which generally start during periods of rest and are worse at night).

Operation Healthy Sleep

This innovative research project is funded by the National Institute of Justice and is designed to examine and evaluate the impact of sleep disorders and treatment of sleep disorders on the safety, health and performance of Massachusetts State Police and the City of Philadelphia Police.

CASE STUDY

A 78 year old female presents to the sleep clinic with complaints of difficulty with sleep onset and sleep maintenance. This problem has been getting worse over the past few years. She generally falls asleep after dinner, around 7 pm, while watching television. She then wakes up around 10 pm to urinate, goes into her bed but is unable to fall back asleep for about an hour. Once asleep she awakes by 4:30 am and cannot go back to sleep. She naps for 30-60 minutes daily. She is preoccupied and "worried" about not being able to sleep after 4:30 am. She is so tired that she does not want to participate in any activities during the day and finds herself lying in her bed watching TV most of the day.

This woman is a typical case of multi-factorial sleep problems in the elderly. Her diuretics, taken too

close to bedtime cause her to have multiple arousals to urinate. She also has a lack of activity and exposure to sunlight, which may cause her circadian phase to advance. Falling asleep early and waking up early is suggestive of Advanced Sleep Phase Disorder. There are also many sleep hygiene issues contributing to her poor sleep. Finally, there may be some element of depression adding to both her sleep maintenance and sleep onset problems.

Recommendations from her sleep specialist included changing the timing of her diuretic so it did not take effect in the middle of the night. In addition, she should increase her exposure to sunlight in the late evening in order to delay her circadian phase and move her bedtime past 9 pm. This will help push her rise time back to later than 4:30 am. Getting her involved in daytime activities

may help her drop her nap and help with the possible depression as well. She should implement measures to improve her sleep hygiene, such as improving the association between the bed, bedroom and sleep by having her fall asleep in her bed without her television, eliminating her nap, getting out of bed during the day, and not spending her day in bed watching TV. She should also be asked questions about sleep disordered breathing to eliminate that as a cause of her sleep fragmentation. If she is still having trouble with sleep onset or sleep maintenance after all of the above, then a low dose sleeping aid may be of help. Long-term follow-up should be built into the treatment plan to ensure implementation, manage difficulties and monitor progress.