



Michael J. Dunn, MD

## Dean's Column

# Research, education provide sleep disorders wake-up call

By Michael J. Dunn, MD

Dean and Executive Vice President, Medical College of Wisconsin

Contrary to the axiom “if you snooze, you lose,” you may actually lose if you don’t snooze, which would place your well-being and health at risk.

Sleep is an integral component of health. Reduction of sleep results in a significant negative impact on daily function. Without sleep, a person performs poorly, loses cognitive ability and has a diminished quality of life.

Disease and sleep are intertwined—disease affects sleep; sleep affects disease. The relatively new specialty of sleep medicine impacts multiple medical specialties, especially those of neurology, pulmonology, rehabilitation medicine, psychiatry, gastroenterology, surgery and otolaryngology. Sleep medicine at the Medical College of Wisconsin is multidisciplinary.

Board certified sleep and medical specialists from Otolaryngology and Communication Sciences, Neurology, and Pulmonary Medicine principally direct the Medical College & Froedtert Sleep Disorders Program. B. Tucker Woodson, MD, ABSM (Associate Professor of Otolaryngology and Communication Sciences); Humberto Battistini, MD, ABSM (Assistant Professor of Neurology); and Elizabeth Jacobs, MD (Professor and Chief of Pulmonary and Critical Care Medicine), are involved in the sleep program along with consultants from oral and maxillofacial surgery,

bariatric surgery, psychiatry and psychology.

The sleep program focuses on patient care and research. The program’s associate director, Dr. Battistini is on the clinical front line. He diagnoses and treats sleep disorders, interprets sleep studies and helps oversee day-to-day operations of the lab while educating neurology residents about sleep medicine.

The most common sleep disorder seen by sleep physicians is obstructive sleep apnea syndrome, which affects 2 percent to 4 percent of adults. The disorder results from collapse and obstruction of the pharyngeal airway. Untreated, it can cause high blood pressure and other cardiovascular disease, memory problems, weight gain, impotence and headaches.

Risk factors—including being male, overweight and older than 40—account for the high prevalence of this disorder in medical patients. This underscores the critical need for primary care physicians, including Internists and Internal Medicine subspecialties, to recognize and screen for such disorders. Participation of multiple disciplines in the sleep disorders clinics increases the diagnostic and therapeutic options open to our patients, according to Dr. Jacobs.

Doctor Woodson is the sleep program’s director. Under his leadership, the sleep lab has completed

the first-ever, single-blind, randomized, nasal continuous positive airway pressure (CPAP) controlled clinical trial for a surgical treatment for patients with mild sleep apnea.

The trial found the procedure—done using radiofrequency energy on an outpatient basis with local anesthetic—effective in improving mild and moderate sleep apnea. The surgery may be part of alternative treatment for select patients who do not tolerate nasal CPAP.

Although various treatments offered at the Medical College—including behavior modification, breathing aids, medication and surgery—may be appropriate for disorders ranging from insomnia to narcolepsy, innovative faculty research is geared toward finding a surrogate for sleep’s power to sustain health.

Carol Everson, PhD, Associate Professor of Neurology and of Cell Biology, Neurobiology and Anatomy, is studying the physical health effects of sleep deprivation by focusing on neuroendocrine and immune systems. Her preclinical research is mostly funded by concurrent grants from the National Heart, Lung and Blood Institute and the National Institute of Neurological Disorders and Stroke.

In earlier work, Dr. Everson identified bacteremia as a clinical marker of sleep deprivation in animals. The early presence of bacteria in normally sterile tissue is a result

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of an underlying problem in the host defense system. She asserts that immune compromise and hormonal changes are linked and is researching the specific mechanisms responsible for immune suppression when sleep is deprived.

Her research suggests sleep deprivation alters the brain's regulation of hormone release. Thyroid hormone concentrations are very low in sleep-deprived rats, though the thyroid gland operates properly. Prolactin concentrations and growth hormone release also are suppressed. She has traced the dysfunction to the hypothalamus and is currently investigating exactly how lack of sleep affects the brain by studying the synthesis and re-

lease of neuropeptides and the roles of excitatory and inhibitory neurochemicals.

Finding a clinically significant marker in humans will hopefully elucidate why sleep deprivation is a risk factor in disease and provide insight into the biological mechanisms responsible for sleep's restorative properties. The goal is to develop treatments that assuage the health consequences of poor sleep. Critical care patients, whose lack of sleep stems from the discomfort of illness or injury, are among the anticipated beneficiaries.

Before any treatment can be prescribed, however, patients and physicians must have the wherewithal to recognize a sleep disorder. Sleep

disorders are grossly underdiagnosed, and pathologic sleepiness is generally accepted as a way of life.

Driving under the influence of alcohol was once regarded too flippantly, but with societal awareness grew greater caution and responsibility. Such a renaissance may be necessary for sleep—many people get behind the wheel of vehicles impaired by sleep deprivation. The danger can be equal to that of drinking and driving.

The Medical College of Wisconsin is committed to educating the public about sleep disorders and providing a resource for physicians to help more heads hit their pillows for health and healthy sleep.



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The *WMJ* (ISSN 1098-1861) is the official publication of the Wisconsin Medical Society and is devoted to the interests of the medical profession and health care in Wisconsin. The managing editor is responsible for overseeing the production, business operation and contents of *WMJ*. The editorial board, chaired by the medical editor, solicits and peer reviews all scientific articles; it does not screen public health, socioeconomic or organizational articles. Although letters to the editor are reviewed by the medical editor, all signed expressions of opinion belong to the author(s) for which neither the *WMJ* nor the Society take responsibility. The *WMJ* is indexed in Index Medicus, Hospital Literature Index and Cambridge Scientific Abstracts.

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