

SLEEP, INTERRUPTED

sleep and helps increase delta sleep. Now my daytime focus is remarkably improved.

Attention-deficit problems are not the only reasons to take lack of quality sleep seriously. Laboratory animals die when they are deprived of delta sleep. Chronic delta sleep deficits in humans are implicated in many diseases, including depression, heart disease, hypertension, obesity, diabetes, and cancer, not to mention thousands of fatigue-related car accidents each year. Sleep disorders are so prevalent that every internist and psychiatrist should screen for them.

The National Institutes of Health spent only \$233 million on sleep research in 2013, a decrease from 2012. One of the problems is that the research establishment exists as mini-fiefdoms—money given to one sector, like cardiology, rarely makes it into another, like sleep medicine, even if they are intimately connected.

Adults with ADHD can't wait any longer to pay attention to the connection between delta sleep and ADHD. If you're not already convinced, consider the drug clonidine. It started as a hypertension treatment, but has been approved by the Food and Drug Administration to treat ADHD. Studies show that when it is taken only at bedtime, symptoms improve during the day. Many physicians may not know that clonidine can be a potent delta sleep enhancer. **A**

VATSAL G. THAKKAR, M.D., is clinical assistant professor of psychiatry at New York University School of Medicine. He runs a private practice in Manhattan and Westport, Connecticut. Visit solsticeCT.com to learn more. Follow him on Twitter at @DeltaSleepDoc. This piece was originally published in *The New York Times*.

ADHD AND SLEEP DYSFUNCTION ARE OFTEN related. Some individuals have a primary case of ADHD with secondary sleep problems, and some have a sleep disorder with resulting impairment in attention and focus. Here are signs that sleep dysfunction may be your primary issue:

YOU DON'T GET ENOUGH SLEEP

> For adults, this is usually a minimum of seven hours a night, and for children this can be as much as 10 or 11 hours a night.

> Chronic sleep deprivation affects concentration, impairs the immune system, causes hypertension, and accelerates the risk of heart disease and cancer.

SLEEP FIX: In addition to practicing good sleep hygiene, use an alarm to indicate that it's bedtime, and wire your lights to a timer, so that your home goes dark at a predetermined time.

YOU SNORE ON A REGULAR BASIS

> Snoring, even mild snoring, by definition, is airway resistance. The noise of snoring would not happen if there were not friction somewhere in the airway. When there's enough airway friction, a sleeping brain can be interrupted by the increased effort required to breathe or by the drop in oxygen level, or both.

> For children, airway friction may not manifest as snoring, but rather as loud breathing or mouth breathing on a regular basis.

YOU ARE A VERY RESTLESS SLEEPER

> Restless leg syndrome (RLS) and periodic limb movement disorder (PLMD), two sleep disorders of restlessness, affect up to 10 percent of the population.

> Restless limbs can keep people from falling asleep and interrupt restorative delta sleep.

> Both are fairly common in people with ADHD.

YOU ARE A NIGHT OWL

> This occurs when the usual circadian rhythm in some people is shifted, so that a sleep cycle of 10 P.M. to 6 A.M. becomes 2 A.M. to 10 A.M.

> Many cases can be treated with a combination of bright light therapy in the mornings, melatonin at night, and regular exercise.

> This is very common in individuals with ADHD.

YOU ARE SLEEPY, EVEN AFTER GETTING ENOUGH SLEEP

> Excessive daytime sleepiness can affect all aspects of an individual's life. Any sudden or

random "sleep attacks" should be discussed immediately with a health-care professional.

> Excessive sleepiness may manifest as needing to sleep 10 to 12 hours a night to feel rested.

> A simple self-test can be taken to measure daytime sleepiness. It is called the Epworth Sleepiness Scale (epworthsleepinessscale.com).

> Some patients with ADHD may have a disorder of excessive sleepiness, such as narcolepsy or hypersomnia, which affects global central nervous system arousal. This controls attention.

If one of the above applies to you, the next step may be as simple as striving for an earlier bedtime, using sleep hygiene steps like disengaging from devices, TV, or any kind of stimulation later than 9 P.M., and improving your diet and getting regular exercise. In addition, have your primary care provider check your levels of vitamin D, B12, ferritin (a measure of iron), and thyroid hormone.

If further steps are required, a sleep consultation or sleep study may be warranted. Here are three types of sleep studies often used:

> **HOME SLEEP TESTING (HST)**—in which you obtain equipment from a testing facility or doctor and the data is downloaded when you return it—is a convenient and inexpensive test. HST is used only to confirm or rule out a diagnosis of sleep-disordered breathing or sleep apnea. It is about 80 percent accurate. HST can be used only for teens or adults, not children.

> **POLYSOMNOGRAM (PSG)** is a traditional overnight sleep study that lasts 12 to 14 hours. It requires an hour of prep time upon arrival, so the specialist can place dozens of monitors and wires all over your body to detect brain waves, chest movement, breathing, cardiac rhythm, and leg movements. The PSG is used to diagnose restless leg syndrome, sleep apnea, night terrors, sleepwalking, and more. A PSG can also be used to detect a patient's sleep "architecture," which is the pattern of brain wave progression through the various stages of sleep.

> **THE MULTIPLE SLEEP LATENCY TEST (MSLT)** is done immediately following a PSG, and typically lasts from 7 A.M. to 4 P.M. It is used to detect abnormal levels of daytime sleepiness. The individual is given four or five opportunities, every two hours, to take a nap in a bed with the lights out. Combined with the results of a PSG, it is used to diagnose narcolepsy or primary hypersomnia.