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Sleep Dreams

More Americans wish for a better night's sleep as disorders become more common—and more dangerous—than many realize. A look at treatments including Eli Lilly's new drug that triggers the natural mechanisms of sleep.

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Sleep Dreams

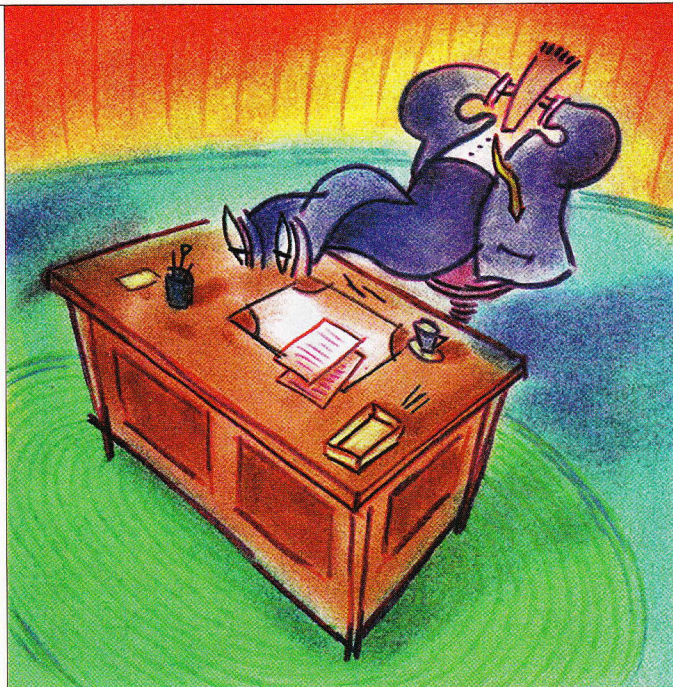
Seven of 10 Americans need better sleep. Sleep disorders are more common—and more dangerous—than many people realize.

by Shari Held

SLEEP MEDICINE, ONE OF the newest medical subspecialties, is garnering a lot of attention these days. It's no wonder, when, according to the National Sleep Foundation, nearly seven out of every 10 Americans experience frequent sleep problems. Many people aren't even aware that poor sleep is causing their fatigue and other health problems.

Despite the fact that an estimated 90 percent of Americans with sleep disorders could sleep better, feel better and improve their overall health with treatment, sleep disorders are often under-diagnosed and their severity misunderstood.

The predominance of sleep disorders has significant consequences for business. The National Sleep Foundation estimates sleep disorders cost more than \$100 billion a year in lost productivity,



medical expenses, sick leave and property damage. Some industries are impacted more than others. Approximately 30 percent of truck drivers have sleep apnea—and don't know it until they've had "the big accident," says Dr. Marvin E. Vollmer, who is

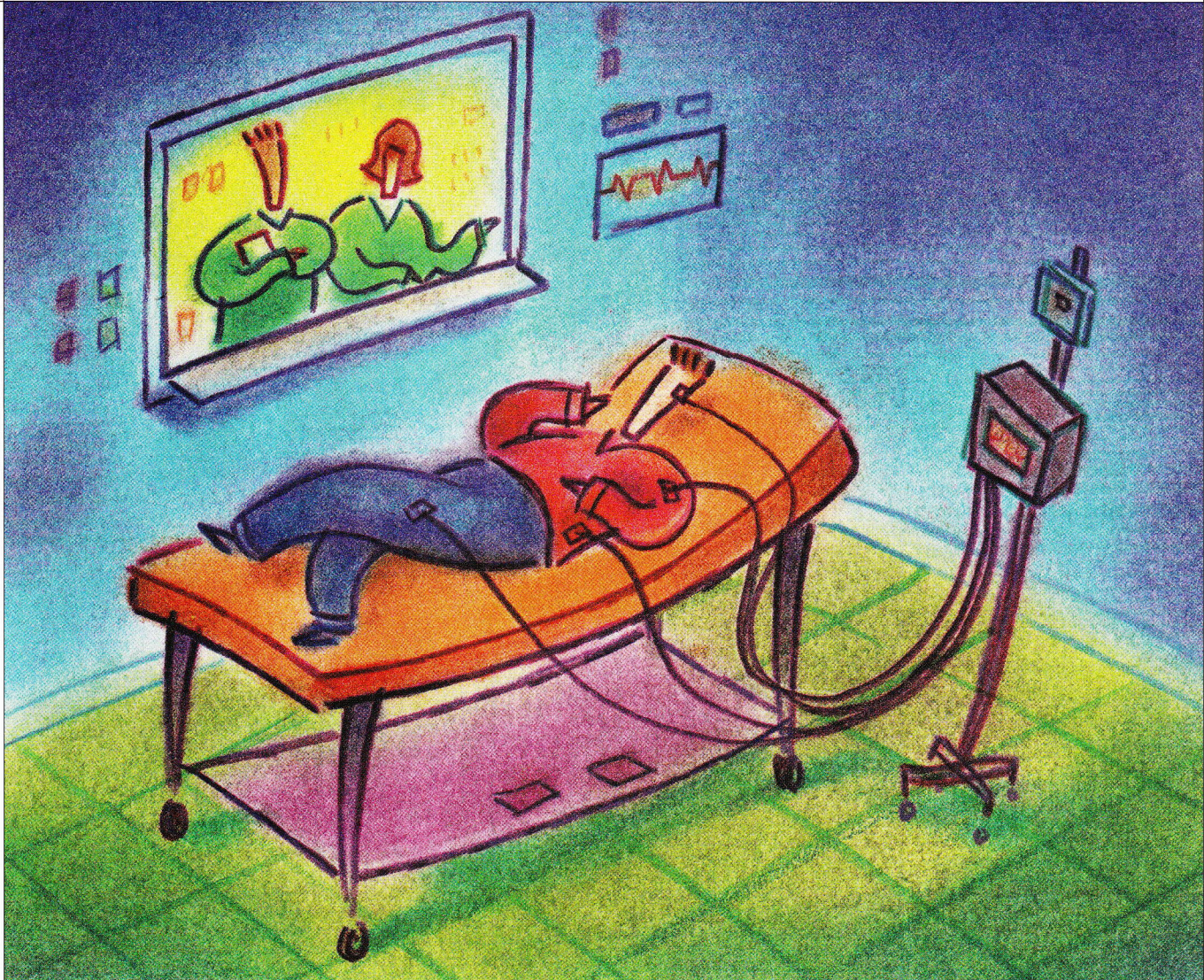
More than \$100 billion in lost productivity

Eli Lilly acquired a company currently testing a new type of drug for insomniacs that works with natural sleep mechanisms.

co-director of the Sleep/Wake Disorders Clinic at Community Health Network in Indianapolis and diplomate of the American Academy of Sleep Medicine. Further, approximately 25 percent of the workforce works the night shift or rotating shifts, both of which are known to wreak havoc with sleep patterns and are the subject of ongoing research.

"Discoveries in the research lab often have a very quick application to the clinic, which is one reason [sleep medicine] is such an exciting area," Vollmer says. "And, why it is so dynamic from a business point of view. As people did more research into sleep disorders, they started finding out that they explained a lot of medical problems that we had no answers for before."

Community Health Network has 24 beds in its five Indianapolis-area clinics.



Around Indiana many sleep labs and clinics have opened to diagnose and treat a variety of sleep disorders. Here is a look at some of them and their treatments.

SLEEP APNEA

Sleep apnea, estimated to impact five to 10 percent of Americans, is the most common sleep disorder diagnosed in sleep labs. Once the domain of males, the disorder now affects both sexes almost equally. It also affects the very young, even infants.

Obstructive sleep apnea, the most common kind, occurs when the windpipe partially or totally collapses during sleep, depriving the

person of oxygen. This is followed by an arousal reflex that wakes up the body so it can resume breathing. This cycle can occur hundreds of times each night, making a restful sleep impossible. People with sleep apnea, as with other sleep disorders, feel sleepy and fatigued regardless of how many hours of "sleep" they get.

"If your spouse has sleep apnea, you don't sleep any better than they do," says Valerie Roark, manager of Cardiopulmonary Services and Sleep Disorders Lab for Daviess Community Hospital in Washington. "You hear the snoring and the gasping for air, or their legs may jerk."

Spouses are often the ones who initiate the trip to the doctor. Daviess opened its two-bed sleep lab in 2006. In its first year it serviced 227 patients. Last year that number increased to 285 patients.

"During an event, when you are obstructing, your oxygen level drops in your bloodstream and your brain gets less oxygen," says Pat Wise, director, Sleep Disorder Center for South Bend Memorial Hospital. "Oxygen levels can fall from 99 or 98 to the 40s, although they usually fall to the low 80s and high 70s. When you start breathing again, your brain is re-oxygenated. But

Is it sleep apnea?

If you're snoring and gasping for air, overnight testing at a sleep lab can detect the serious disorder that disturbs sleep and leads to many other health problems.

slowly [sleep apnea] works on your blood pressure. It can create high blood pressure and stroke. People don't understand that sleep apnea is not all about being tired. It's also about their cardiac and mental status."

Even mild sleep apnea can contribute to serious health problems, such as, diabetes, heart failure, enlarged heart, irregular heart rhythm,

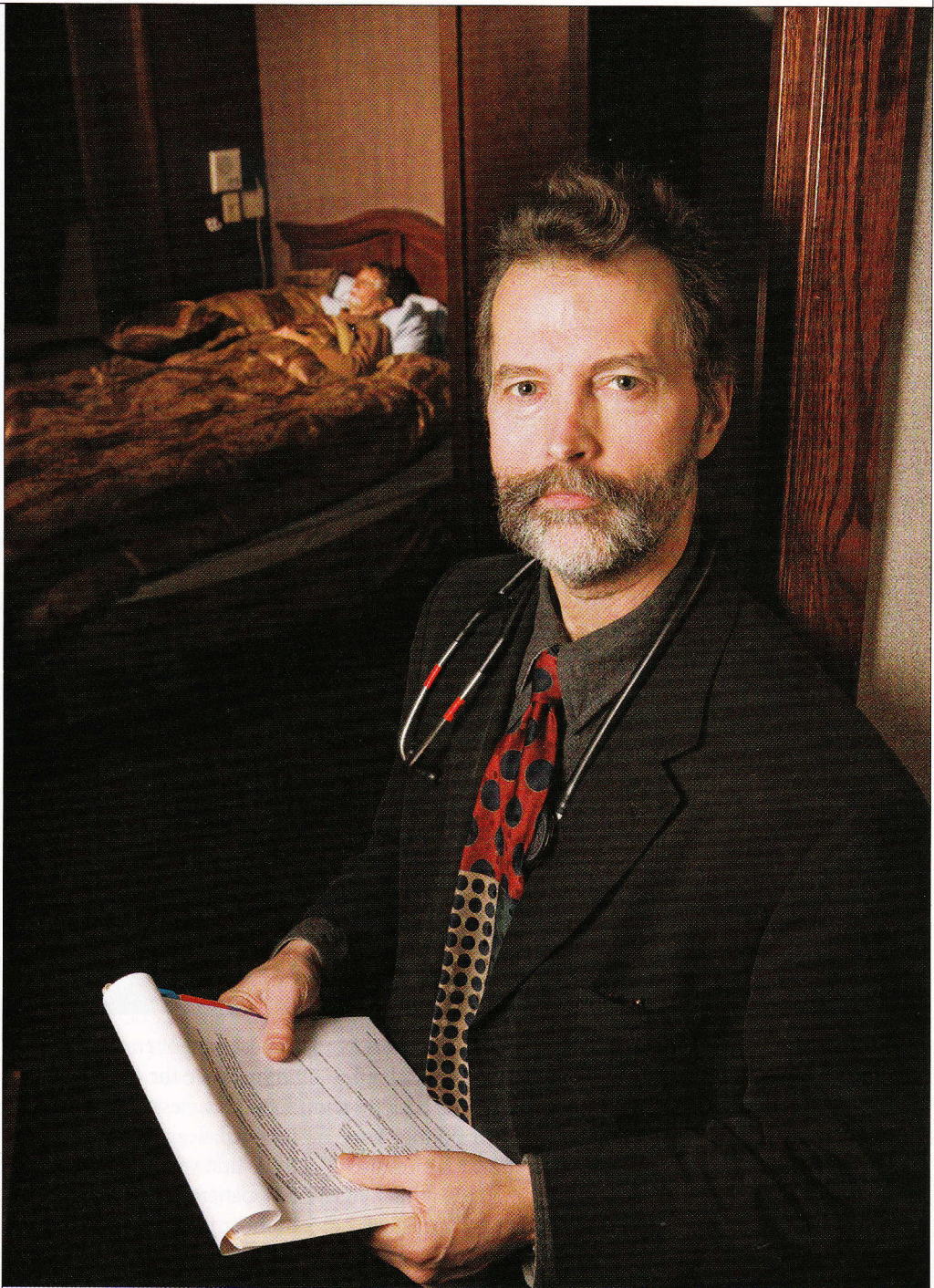
stroke, impotency and high blood pressure, as well as conditions such as increased weight, impaired memory, Attention Deficit Disorder and getting up during the night to go to the bathroom. Since many of these conditions are associated with the natural aging process, they are often overlooked.

“Pain management issues are also made worse by any kind of sleep fragmentation, not just sleep apnea,” says Dr. Raymond Loffer, neurologist, sleep medicine specialist and pulmonary disease specialist with St. Vincent Health.

The Sleep Disorders Clinic at St. Vincent Indianapolis has 10 adult beds and six pediatric beds, St. Vincent Carmel has two beds and St. Joseph Hospital in Kokomo has four beds dedicated to sleep studies.

“The number one problem is that people are unaware that [sleep apnea] is a serious systemic disease,” says Dr. Thomandram Sekar, medical director of Parkview Hospital’s Sleep Disorders Lab and board-certified in sleep medicine and pulmonary disease. “Recently studies have shown that there are changes even at the cellular level. High levels of C-reactive protein (CRP) causes platelets to form a blood clot, which correlates with the probability to have a heart attack.” Patients with sleep apnea tend to have high CRP levels that improve with sleep apnea treatment and reappear when treatment stops.

Sleep apnea is the most common sleep disorder the Fort Wayne hospital sees. The six-bed lab has a full complement of physicians



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on staff including adult and pediatric neurologists.

DIAGNOSING, TREATING AND CURING SLEEP APNEA

Sleep apnea is diagnosed in a sleep lab. Patients may be asked to complete a questionnaire—such as the Epworth Sleepiness Scale administered in the Daviess

Community Hospital sleep lab—before the non-invasive, painless sleep study begins. Studies generally involve one to two nights in the lab.

At South Bend Memorial Sleep Disorder Center, which has been open for seven years, patients enjoy comfortable, hotel-like surroundings in each of the center’s six rooms. They are equipped with a camera and

“If you are feeling 99 years old at age 45, and something makes you feel 45 again, that’s a very big deal.” says Dr. Marvin Vollmer, co-director of Community Health Network’s Sleep/Wake Disorders Clinic in Indianapolis, on the treatments for obstructive sleep apnea.

infrared light so patients can be observed during their sleep. Patients are wired

up to approximately 16 leads and the heart rate, blood oxygen level, brain waves, movement of the stomach, chest, eyes, chin, legs as well as air flow are measured and monitored.

Wise estimates there are probably 25,000 undiagnosed patients with some kind of sleep disorder in South Bend alone. The center is typically open five nights per week, but is flexible. "We work with patients' own private schedules," she says. "Whatever hours they normally sleep, we'll take them into the lab."

If sleep apnea is diagnosed, there are several options. The gold standard is CPAP, Continuous Positive Air Pressure, a device that keeps the windpipe open by means of pressurized air.

"Some people have a period of adjustment wearing a mask at night," Roark says. "But once they get adjusted to that, probably two weeks at most, they notice the effects immediately."

The effects can be dramatic. "For many people it is a life-changing event," says Vollmer, a pioneer in sleep medicine since 1985. "If you are feeling 99-years-old at age 45, and something makes you feel 45 again, that's a very big deal." Vollmer used to feel bad about diagnosing someone with sleep apnea. "Now I say, 'the great news is that you have sleep apnea. I'm going to make you feel better.'"

CPAP is very effective (in the high 90-percent range), and is usually covered by health insurance. Dental appliances that hold the tongue in place or hold the jaw in a forward position may be prescribed for mild cases, with variable measures of success. Surgery may be required, but is typically a last resort since the success rate ranges from 20 percent to 45 percent and often multiple surgeries are necessary. Insurance may or may not cover dental appliances and surgeries.

Weight loss, even moderate weight loss of 20 to 30 percent of total body weight, is 80 percent effective. "Sleep deprivation, sleep apnea, anything that makes you sleepy, also resets your weight at a higher level," Vollmer says. "The trouble is, as these people develop sleep apnea, their weight has

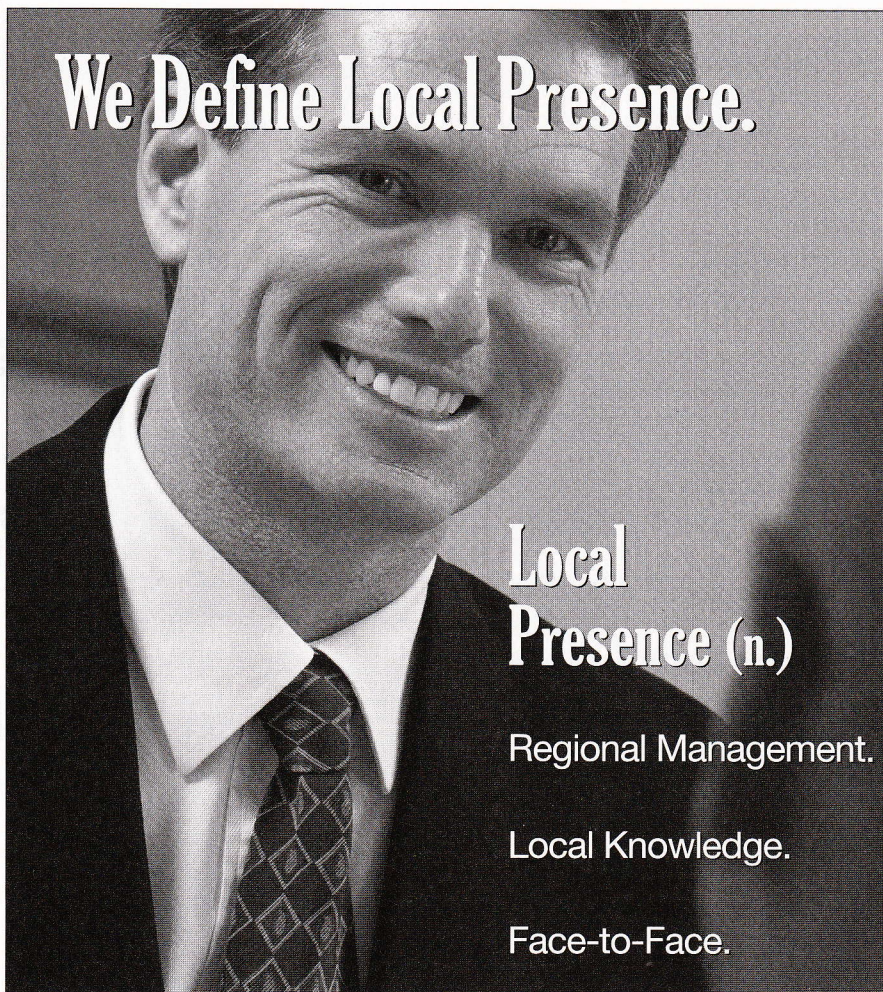
often shot up 50 to 100 pounds in the last year, and it is impossible to get their weight down. So even though weight loss is the long-term goal, we do other treatments in the interim to get them out of trouble, help them feel better and take care of their medical complications."

Another health problem that may contribute to sleep apnea is hypothy-

roidism (low thyroid). Correction of hypothyroidism in patients with sleep apnea may make sleep apnea improve or even disappear. "These are the only two situations that can be called a cure," says Sekar, who has worked in sleep specialties since 1986. "In all other situations we are controlling it with treatment."

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INSOMNIA AND NARCOLEPSY

Insomnia, an inability to get to sleep and stay asleep, affects 20 to 30 percent of the population at one time or another (mainly women), making it the most common sleep disorder.

Insomnia can be caused by a number of things, but the No. 1 reason is “good old-fashioned stress”—unresolved issues in work, home, family, finances, says Dr. Michael Levine, neurologist and sleep specialist at Hancock Regional Hospital in Greenfield. “People lay down to go to sleep and start thinking about how to fix everything. Of course, that never happens, and they just lose sleep. The next night they are worrying not only about the original issue; now they are worrying about not getting sleep. After a while, sleep itself becomes the worry,” he explains.

There are several ways to treatment insomnia, beginning with basic sleep hygiene. Marcia Alpuche, sleep lab supervisor and

Common Sleep Disorders

Lack of Sleep

- **Insomnia** is the inability to fall asleep. It is a common sleep problem that most people experience at least occasionally.
- **Sleep deprivation** is not actually a disorder; it simply indicates that a person has not been getting enough sleep.

Disturbed Sleep

- **Sleep apnea** is interrupted breathing during sleep.
- **Snoring** is noisy breathing during sleep.
- **REM sleep behavior disorder** causes disruptions in the brain during the dream stage of rapid eye movement (REM) sleep.
- **Sleep paralysis** is the inability to move the arms, legs or entire body that occurs when a person is falling asleep or waking up.

Excessive Sleep

- **Narcolepsy** is a condition that causes patients to fall asleep uncontrollably throughout the day for periods lasting less than a minute to more than half an hour.

Registered Polysomnographic Technologist for Community Healthcare System in Northwest Indiana, suggests going to bed and getting up at the same time each day, making sure your bedroom is dark enough to induce

quality sleep and not eating, drinking alcohol or exercising too close to bedtime.

The Community Healthcare System has a total of 10 beds devoted to sleep diagnosis—four at Community Munster, four at St. Catherine Hospital in East Chicago and two at St. Mary Medical Center in Hobart. The Munster lab opened seven years ago.

Medication is another common treatment for insomnia. “All of us have life stressors at some time in our life—we might be taking care of an ailing parent or there’s a death in the family, and we just can’t get to sleep,” Alpuche says. “Sleep aids help us transition through that period of time where we have these stressors.”

“Every year if you look at the big blockbuster medications they are often sleeping

medications,” Vollmer says. “That is a good indication of just how prevalent these [insomnias] are.”

And what big business they are. So much so that Indianapolis-based Eli Lilly and Company recently acquired Massachusetts-based Hypnion Inc., a privately held neuroscience drug discovery company focused on sleep disorders, for \$315 million. Steven M. Paul, M.D., executive vice president, science and technology for Lilly, says the deal “provides Lilly with a broader and more substantive presence in the area of sleep disorder research.”

Hypnion is currently in Phase 2 clinical testing with a new type of sleep drug that uses the natural mechanism of sleep, rather than putting a person to sleep with a sedative.

Tips for better sleep

- Go to bed and get up at the same times each day.
- Avoid caffeine, nicotine, beer, wine and liquor in the four to six hours before bedtime.
- Don’t exercise within two hours of bedtime.
- Don’t eat large meals within two hours of bedtime.
- Don’t nap later than 3 p.m.
- Sleep in a dark, quiet room that isn’t too hot or cold for you.
- If you can’t fall asleep within 20 minutes, get up and do something quiet.
- Wind down in the 30 minutes before bedtime by doing something relaxing.

Source: U.S. Food and Drug Administration

"It is designed to let you sleep, rather than to make you sleep," says Paul. Early tests show the drug is not addictive, doesn't cause a hangover and increases restful "slow-wave" sleep.

Vollmer stresses that although medications are popular, they are not the answer for all insomnias and all patients. "If you have insomnia and you snore, don't take a sleeping pill until you get checked out," he advises.

A third treatment for insomnia is behavioral therapy, often used in combination with medication. "Psychiatrists sometimes have to get involved to work on the issues and relaxation techniques," Levine says.

Narcolepsy, seen more often in younger people, is characterized by sudden, uncontrollable urges that cause people to fall asleep during the daytime. "Narcolepsy is not common, but it is actually fairly devastating," says Dr. Michael Levine, neurologist and sleep specialist at Hancock Regional Hospital in Greenfield. "This is an anatomical brain disorder. These people aren't making enough chemicals to help them stay awake."

Hancock Regional opened its four-bed sleep lab four years ago. Levine says it performs about 800 sleep studies per year, nearly 80 percent of which are diagnosed as sleep apnea.

After a night of testing in the sleep lab, a daytime test is needed to diagnose narcolepsy. Patients are put to bed in a darkened room and told to close their eyes. "They tend to fall asleep in an average of 10 minutes after six or seven hours of sleep at night," Sekar says. "The second thing we see in these individuals is that they go into a deep sleep, called REM sleep, within 15 to 20 minutes. Normally it should be 75 to 100 minutes."

Narcolepsy is controlled with medications. For years, stimulants (caffeine, Ritalin, amphetamines) were used to wake people up. "Stimulants wake you up, but they also push your emergency alarm system," Vollmer says.

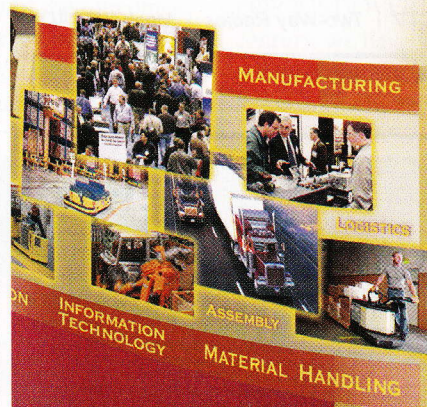
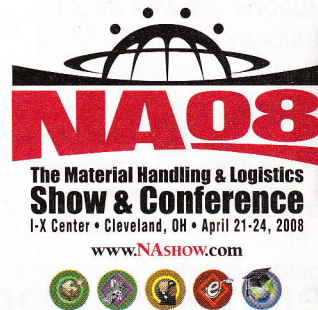
Not only would patients sometimes become panicky, but Sekar says they often developed a tolerance to these drugs. Doses had to be increased to the

point where patients had to take a "drug holiday" for several weeks before re-starting treatment. Newer medications, such as Provigil or Modafinil, don't have those side effects.

According to Sekar, successful treatment also involves getting enough sleep and regular sleep, avoiding stimulants at night and things that may induce drowsiness during the day and taking

medication at the time it will be most effective. "The third thing we have found [beneficial] is occasional naps," he says. "This is one of the few areas where sleep physicians actually recommend a nap."

DREAM SLEEP DISORDER
REM sleep behavior disorder (RBD) tends to occur in older individuals—



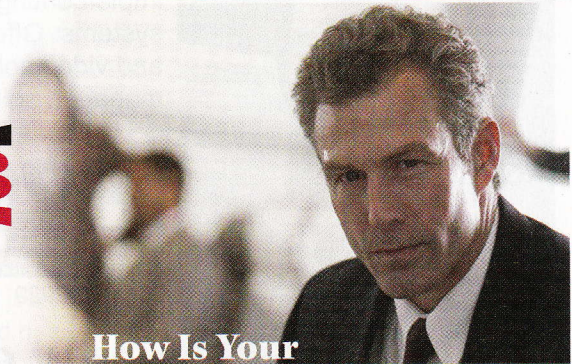
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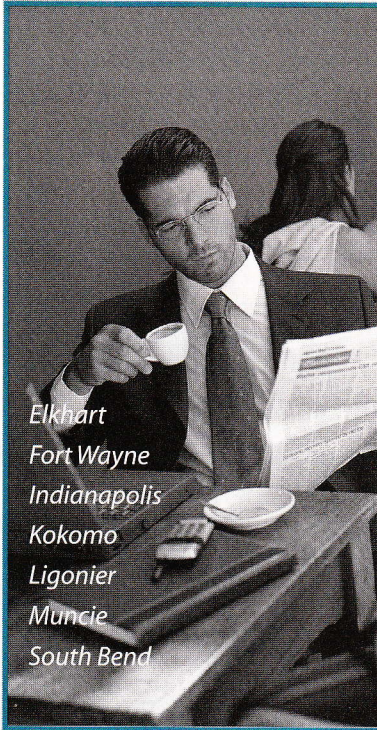
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90 percent of them male. Loffer says these patients lose the signal that shuts down muscle activity during dream sleep. "The muscles are no longer inhibited," he says. "Many times some kind of active aggression may play out in this." Patients may believe they are attacking a lion in their dreams while, in fact, they are attacking their bed-partner, or they may take a walk outside the house.

RESTLESS LEG SYNDROME

By day, the condition is called restless leg syndrome; at night, during sleep, it is called sleep myoclonus. In both, the legs hurt and seem to have a life of their own. Often people have both conditions.

"I've seen people kick their legs 1,000 times and more at night," Levine says. "Obviously they are never getting quality sleep, so the next morning they feel horrible."

Loffer feels the condition is more aptly called restless body syndrome, because it can affect more than the legs. "About one to two percent of the population has it," he says. "And at least 10 percent or more of patients with insomnia have it. Combinations are common. Treatment failure often happens because there is another problem that is not recognized. What this means is that the sleep specialist needs to sit down with the patient, talk to him, listen to him and examine him. Many times patients ask me, 'why are you examining my feet, or my nose or my legs?' You need to look at the whole person and go from there."

If an iron deficiency is causing the problem, it can be cured. "However, for 95 percent of the people there is no cure," Vollmer says. "It is a chronic condition that goes on for years."

Fortunately, these conditions respond well to medications, such as, Requip and Mirapex (originally marketed for Parkinson's disease) and muscle relaxants. Loffer warns some medications may make the condition worse, even over-the-counter medications such as Benadryl. ■

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