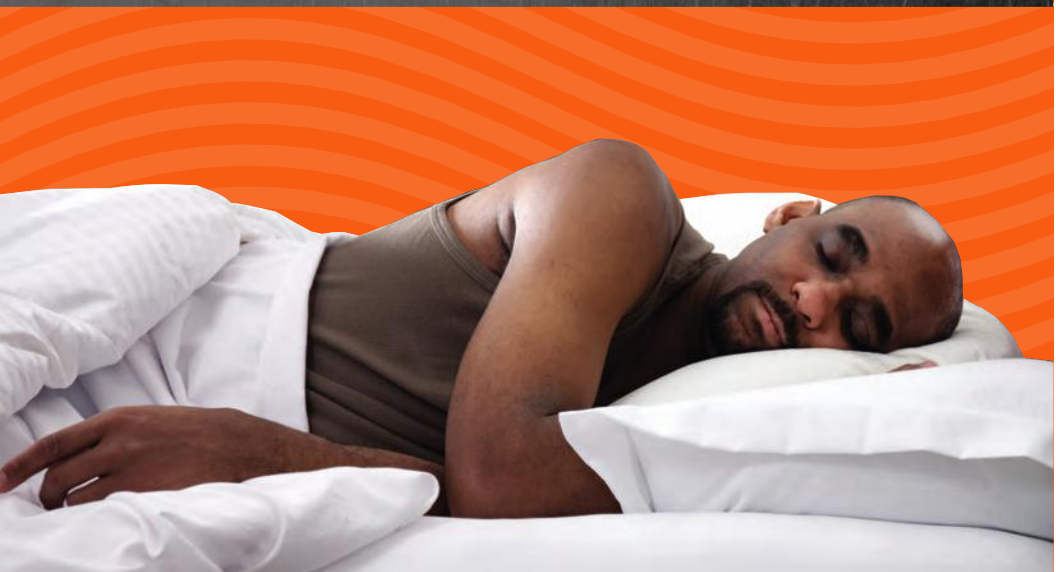


BNSFWELLNESS



BETTER SLEEP

RAILROADERS' GUIDE TO IMPROVING QUALITY OF SLEEP



BNSF
RAILWAY

This guide offers simple advice to help those who need better quality sleep and more of it. The tips in this guide can help you, regardless of your sleep and work schedule.

It's important not to deprive yourself of quality sleep, even if you feel like you can get by without it. Sleep loss can affect judgment, performance and safety. Contrary to popular belief, you cannot overcome sleep loss through determination, motivation or experience.

TIPS FOR GETTING BETTER SLEEP



SEVEN TO NINE HOURS OF QUALITY SLEEP

Most people need seven to nine hours of quality sleep every 24 hours to function at their best.

For some railroaders, as well as many others in our country, adjusting to irregular bedtimes can make it more challenging to get seven to nine hours of sleep in a 24-hour period. But there are things you can do to get better sleep.

THE #1 CAUSE OF
FATIGUE:
LACK OF QUALITY SLEEP



AVOID COMMON "SLEEP DISRUPTORS"

- **Family and friends** – Speak with your family and friends and ask them to avoid disturbing your sleep, except for emergencies.



- **Alcohol** – Although it may help you fall asleep, alcohol diminishes the length and quality of sleep. If you drink, stop at least six hours before sleeping.

- **Medications** – Some prescription and over-the-counter medications can interfere with sleep. Ask your doctor or pharmacist about the effects of medications.

- **Caffeine** – Drinks with caffeine can be an effective alertness strategy, but avoid them at least six hours before bed.



- **Nicotine** – Acts as a stimulant. Tobacco users, note that the body can crave nicotine while you sleep and wake you up.

- **Too many liquids before bed** – Increases the likelihood that you will awaken to go to the restroom.

- **Big meals** – Digesting a full stomach of food while trying to sleep causes restlessness. Avoid heavy foods at least four hours before bedtime.

CREATE AN IDEAL SLEEP ENVIRONMENT

- **Seek absolute darkness** – Use thick curtains or wear eye shades that are available at many pharmacies.



- **Block out noise** – Wear earplugs, disconnect the phone when not on call, and turn off other electronic devices or create "white noise" such as a fan running at low speed to mask other sounds.

- **Keep cool** – Make sure your bedroom doesn't get too warm and that air circulates freely. Experts recommend a room temperature of 65 to 67 degrees for deep sleep.



LIFESTYLE CHANGES THAT CAN HELP YOU SLEEP BETTER

- **Use naps** – Naps have shown to be nearly as restorative as traditional sleep. TY&E and Maintenance Of Way employees have operating rules in place that allow for up to a 45-minute nap. Be familiar with this rule to be sure your circumstances qualify for an Opportunity Nap.

- **Exercise** – Regular exercise will help you fall asleep faster, stay asleep longer and get better quality sleep. But to wind down for sleep, you may need to complete your exercise at least four hours before bedtime.



DO YOU HAVE A SLEEP DISORDER?

Despite all your efforts, if you still have trouble getting enough quality sleep, you may have a sleep disorder. Many sleep disorders are treatable. You can find out more about sleep disorders and their treatment by visiting the **Sleep Better** section of the BNSF Online Wellness Center at employee.bnsf.com > Employee tab > Wellness subtab.

BNSF'S COMMITMENT

Achieving and maintaining good health is important for you, your family and your fellow railroaders. BNSF is committed to providing railroader-focused information and programs on a variety of health and wellness topics. It's up to you to take advantage of them. Find out more about the resources available to you at employee.bnsf.com > Employee tab > Wellness subtab.



JUST HOW SLEEPY ARE YOU? THE EPWORTH TEST

The Epworth Sleepiness Scale is used to determine the level of sleepiness during a person's usual waking hours. For each situation listed, choose the most appropriate number from this scale:

- 0 = Would NEVER doze or sleep**
- 1 = SLIGHT chance of dozing or sleeping**
- 2 = MODERATE chance of dozing or sleeping**
- 3 = HIGH chance of dozing or sleeping**

- Sitting and reading
- Watching TV
- Sitting inactive in a public place
- Being a passenger in a motor vehicle for an hour or more
- Lying down in the afternoon
- Sitting and talking to someone
- Sitting quietly after lunch (no alcohol)
- Stopped for a few minutes in traffic while driving

TOTAL SCORE

A score of 10 or more is considered sleepy. A score of 18 or more is very sleepy. If you score 10 or more on this test, you should consider whether you are obtaining adequate sleep, need to improve your sleep hygiene, and/or need to see a sleep specialist. You should discuss your score with your personal physician.

Source: Circadian Workforce Solutions



BNSF Wellness

On employee.bnsf.com, go to Employee tab > Wellness subtab.

yourhealthmatters@bnsf.com

817-352-1639

BNSFWELLNESS



SLEEP APNEA

RAILROADERS' GUIDE TO UNDERSTANDING SLEEP APNEA

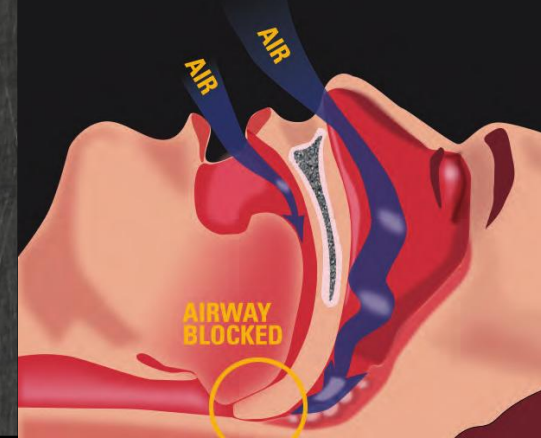


BNSF
RAILWAY

Sleep apnea is one of the most common sleep disorders, affecting about 18 million Americans. It is also one of the most serious sleep disorders that, left untreated, can contribute to excessive sleepiness, high blood pressure, heart attack and stroke.

Obstructive sleep apnea (OSA) is a medical condition that results when muscles in the back of the throat relax to a degree that the airway becomes blocked. The brain senses that breathing has stopped and briefly wakes the sleeper to reopen the airway.

These brief awakenings are usually not noticed by the sleeper; however, the disruptions, which can range from five to more than 100 every hour, keep the sleeper from getting deep, quality sleep that the mind and body need.



YOU MAY HAVE SLEEP APNEA IF...

You or your sleep partner notice one or more of these symptoms:

- Loud, chronic snoring (a strong indicator of sleep apnea but not always).
- Choking, gasping or snorting during sleep.
- Observed episodes of breathing cessation during sleep.
- Waking up with shortness of breath, chest pains, headaches, nasal congestion or a dry throat.
- Morning headache.
- Excessive daytime sleepiness.
- Difficulty staying asleep.

FACTORS THAT MAY INCREASE YOUR RISK OF DEVELOPING OBSTRUCTIVE SLEEP APNEA



EXCESS WEIGHT

Fat deposits around the upper airway may obstruct breathing.

NECK CIRCUMFERENCE

A neck circumference greater than 17 inches for men and 16 inches for women is associated with an increased risk of sleep apnea.

RECESSED CHIN, SMALL JAW OR LARGE OVERBITE

These physical traits are commonly associated with a narrowed airway and increased risk.

HIGH BLOOD PRESSURE (HYPERTENSION)

Sleep apnea is more common among people who have high blood pressure.

FAMILY HISTORY

Those who have family members with sleep apnea may be at increased risk.

BEING MALE

Men are twice as likely as women to have sleep apnea. However, a woman's risk increases if she is overweight or has experienced menopause.

AGE

Although the risk increases at age 40, sleep apnea occurs two to three times more often in adults older than 65.

ALCOHOL, SEDATIVES OR TRANQUILIZERS

These substances relax the muscles in the throat and can narrow the airway.

SMOKING

Smokers are three times more likely to have obstructive sleep apnea. Smoking may increase the amount of inflammation and fluid retention in the upper airway.

OTHER TYPES OF SLEEP APNEA

Less common are central sleep apnea and complex sleep apnea. Both are attributed to an abnormality in the brain that fails to properly control breathing during sleep, rather than a blockage in the airway.



Do not delay contacting a doctor if you suspect you have sleep apnea.

SUSPECT YOU HAVE SLEEP APNEA?

Sleep apnea is treatable but potentially life threatening if left untreated. Sleep apnea can lower blood oxygen, increasing the risk of heart problems. If you suspect you have sleep apnea, contact a doctor immediately. Only a doctor can diagnose a sleep disorder.

Most people with sleep apnea do not realize their sleep time has been repeatedly interrupted.

APNEA = "WITHOUT BREATH"

BNSF'S COMMITMENT

Achieving and maintaining good health is important for you, your family and your fellow railroaders. BNSF is committed to providing railroader-focused information and programs on a variety of health and wellness topics. It's up to you to take advantage of them. Find out more about the resources available to you at employee.bnsf.com > Employee tab > Wellness subtab.



IS IT SNORING OR SLEEP APNEA?

Use the following scale to choose the most appropriate answer for each question:

1 = Never 2 = Sometimes 3 = Usually

- Does your snoring disturb your bed partner?
- Do you snore in all sleeping positions?
- Do you ever wake suddenly because of snoring?
- Are you tired when you wake up from a sleep period?
- Are you tired during the day?
- Do you fall asleep while at the movies or reading?
- Do you stop breathing for several seconds between snores?

TOTAL SCORE

Between 7 and 10 points

Your snoring falls into the mild annoyance category.

Between 11 and 15 points

Your snoring is probably disturbing you and your bed partner and may require treatment.

Between 16 and 21 points

Your snoring is significantly disrupting your sleep and may be putting you at risk for more serious problems.

Source: Circadian Workforce Solutions



BNSF Wellness

On employee.bnsf.com,
go to Employee tab
> Wellness subtab.

yourhealthmatters@bnsf.com

817-352-1639

Sounding Off for Sound Sleep

As a University of Chicago medical student, William C. Dement stumbled into a research career that would eventually make him one of the world's foremost experts on sleep. But at the time -- the mid-1950s -- most scientists had doubts when the young researcher announced that our brains are active through the night.

Over the years, Dr. Dement's persistence and scholarship won over skeptics -- and launched today's science of sleep research.

By tracking brain wave activity and eye movements, he discovered rapid eye movement (REM) and mapped the architecture of sleep, learning that we pass through a consistent set of stages during our night's rest.

In 1963, Dr. Dement became a professor of psychiatry at California's Stanford University. By 1970 he had set up the world's first sleep disorders clinic, where patients stayed overnight while doctors monitored their slumber. The result: groundbreaking insights into disorders such as narcolepsy, insomnia and sleep apnea.

Dr. Dement also has campaigned to increase public awareness of sleep problems. He founded the American Sleep Disorders Association in 1975 and served as its president for 12 years. Until recently, he chaired the National Commission on Sleep Disorders Research, and he remains chairman of the National Program on Insomnia and Sleep Disorders.

Q: How important is sleep to overall health?

Dr. Dement: I like to say there's a triumvirate of health: nutrition, physical fitness and sleep. For the most part, sleep gets ignored.

Q: What percentage of us have sleep problems?

Dr. Dement: At least half the population has a sleep disturbance at any given time. Stress-induced insomnia is probably the most common, though it's not a sleep disorder in the clinical sense -- it's more of a symptom.

Q: What's the most common serious sleep disorder?

Dr. Dement: Obstructive sleep apnea. I believe it progresses to death if it isn't treated. It affects 30 million Americans. I think that makes it the No. 1 serious chronic illness.

Q: How can you tell whether you're getting enough sleep?

Dr. Dement: If you feel good all day long -- wide awake and alert -- you're getting enough sleep. If you're feeling pretty drowsy after lunch and it's pretty hard to get up in the morning and you have a glass of wine and it hits you pretty hard, then you've got a sleep debt -- you're not getting as much sleep as you need.

Q: What are the most vital things you can do to sleep well consistently?

Dr. Dement: The first thing is to really take it seriously. What we find is that in our busy lives, people generally don't even think about "will I be able to get enough sleep?"

Q: What are some other habits that ensure good, consistent sleep?

Dr. Dement: Regularity is good. Allowing time to get the sleep you need, planning so that happens, not allowing yourself to get too sleep deprived, avoiding things that you take into your body that disturb sleep -- caffeine being No. 1, alcohol probably being No. 2 -- and realizing that you don't fall asleep when you're all excited or angry.

Q: The bedroom should be reserved for sleeping?

Dr. Dement: Right. And you should have a ritual that favors sleep. People should know when they're getting sleepy. If you pay attention, you'll notice that you get drowsy at the same time.

Q: Does the amount of sleep needed vary a lot from person to person?

Dr. Dement: There's kind of a bell-shaped curve. Eight hours is pretty much the average. Almost everybody is between six and nine. The problem is, with the longer sleepers, there's so much demand to sleep less.

Q: We seem to admire people who can get by on very little sleep.

Dr. Dement: Absolutely, but almost all of them don't really get by. It can kill people. People who don't get enough sleep are impaired. They can't function as well mentally.

Q: What are some effects of sleep deprivation?

Dr. Dement: Mood is negatively affected. Cognition is negatively affected. Reaction time is increased. Human interactions are impaired. You can start to have micro-sleeps, which can be very dangerous. Motivation is impaired -- you become apathetic. There's inconsistency in performance. You make errors of omission and commission.

Q: When do those impairments kick in?

Dr. Dement: You can start to measure them after just a couple of hours of sleep loss.

Q: Do you follow your own advice on sleep?

Dr. Dement: Pretty much. I try to get at least seven hours. I'm the kind of person who will leave a dinner party, will leave guests. I'll say, "It's my bedtime folks, sorry." If I don't respect sleep, who will?

The StayWell Company, LLC 2016

Sleep Disturbances

"To sleep -- perchance to dream," wrote Shakespeare in his masterpiece play, Hamlet. It's a nice concept. For some people, however, the elusive road to slumberland is anything but a dream.

For many, the road is paved with obstacles -- often a sleep disorder, ranging from insomnia to restless legs syndrome to sleep apnea, during which individuals usually snore, experience fitful sleep, and may stop breathing for short periods, in some instances hundreds of times a night. The consequences of sleep deprivation, specifically the "problem sleepiness" during the day that normally follows, can have extremely serious, even life-threatening consequences.

Considering we spend nearly one-third of our lives tucked in bed, you would think we would know how to get a good night's rest. Not so for many. If you have sleep difficulties, you're not yawning alone -- chances are some of your family members, coworkers and neighbors also have a "sleep debt," the cumulative effect of not getting the quantity or quality of sleep that one needs. As many as 40 million Americans are afflicted with more than 70 types of sleep-related problems.

While some sleep disturbances may be linked to biological changes associated with aging or certain physical diseases, especially those that cause pain, others may be associated with a mental health disorder such as depression or anxiety. Poor sleep may also stem from "bad" habits such as napping too long or too late in the day, or doing shift work, which applies to nearly one quarter of the population, according to the National Center on Sleep Disorders Research. The center is part of the National Heart, Lung and Blood Institute, a unit of the National Institutes of Health (NIH). On the other hand, you may simply not be giving yourself the opportunity to acquire ample shuteye.

Nature of sleep deprivation

Why isn't America getting a better night's rest? "It's a two-part problem," James P. Kiley, Ph.D., director of the National Center on Sleep Disorders Research explains. "First, we have a society that's on a 24-hour cycle -- with multiple jobs in many cases and multiple responsibilities both at work and home. When you're pushed for time, as many people are, the first thing that usually goes is sleep." When you sacrifice hours this way, however, you frequently end up paying for it in terms of decreased productivity and an increased risk for errors in judgment and accidents, according to Dr. Kiley.

He said that the second part of the problem relates to actual sleep disorders. Insomnia --the inability to fall asleep and remain there -- affects many millions of people. "For sleep apnea, easily another 10 to 15 million. Narcolepsy [falling asleep uncontrollably during the day], perhaps 250,000. We don't even know how many people have restless legs syndrome [RLS]. In general, society is not well rested, and looking at these numbers and their causes, you begin to see why," Dr. Kiley explained.

While people of any age may be affected, there seems to be a large prevalence of sleep disturbances among elderly men and women. Sleep studies reveal that they get less REM (deep) sleep over time. With aging, sleep becomes more fragile, that is, it doesn't take much disturbance to awaken the individual. Women may first notice this during menopause.

Lack of sleep and its link to accidents -- automobile and on-the-job -- now appears to be a problem of far greater magnitude than previously believed. Fatigue leads to diminished mental alertness and concentration. According to Dr. Kiley, it's the resultant "near miss" (in a motor vehicle or otherwise) that sometimes makes people recognize they have a problem and need to seek professional help.

He says there could be as many as 1,500 sleep-related automobile fatalities annually in the United States. Shift workers are especially prone to this problem. "Their biological clock is ticking at the wrong time, and they typically drive home after work when they're extremely tired. Young males under 25 also have a disproportionate number of auto accidents related to sleepiness. We want to target them through education; in fact, we're currently working on a program with the U.S. Department of Transportation that we hope will be very effective in this area," said Dr. Kiley.

What about napping?

In some countries, a siesta or short daytime rest is a respected, time-honored daily ritual. Dr. Kiley also indicated it may have an important role. "With older people in particular, napping is a good practice. Because their sleep is fragmented and they get less of it at night, they typically make up for it with naps during the day. Napping works, it definitely has a role," he explained, adding that it can increase productivity and help restore your ability to think.

What about waking up too early, like before the birds' first chirp? While such "early morning awakenings" may be a sign of depression or other treatable emotional disorder, the passage of time may be the culprit. "As you age, your biological clock ticks at a slightly different rate. Because of this, you run into people with an advanced sleep syndrome -- they go to bed early and then wake up too early," said Dr. Kiley. "Again, sleep is very fragile with age and we really don't know why." In some cases, going to bed a bit later may help reset your biological clock and allow you to sleep later.

How many hours per night should you sleep? NIH sleep experts believe you should get 7 to 8 hours of sleep a night. This figure varies considerably across the age span and from person to person. Still, if you're getting less than 6 hours of sleep per night regularly, chances are you're building up your "sleep debt," and may be compromising your health and welfare, sleep authorities contend.

If you're having chronic sleep difficulties, should you merely lie there and take it? No. Dr. Kiley suggests you practice sensible sleep habits. If you've done all you can, however, and still aren't getting good, quality sleep, talk with your family doctor. If you need additional help, ask for a referral to a sleep specialist. This may be needed, in particular, for more complex conditions such as narcolepsy. While this disease is not curable, it is treatable, though the regimen with carefully prescribed medications is complicated, and best handled by a sleep specialist. On the other hand, "we've made great strides in the sleep apnea area. General practitioners now do a pretty good job of diagnosing this condition," Dr. Kiley said.

Source: National Institutes of Health
The StayWell Company, LLC 2016

Sensible Use of Sleep Aids

From time to time, almost everyone has a bad night when sleep is elusive. Short-term insomnia lasts only a few days and is usually not a cause for concern. However, if you cannot sleep on most nights for 2 to 3 weeks, talk to your health care provider. Insomnia that lasts this long usually continues until the cause is treated. For short-term problems getting to sleep or staying asleep, taking an over-the-counter (OTC) sleep aid can be a safe and effective way to get a good night's sleep.

A good night's sleep for most adults is about eight hours long, although some people may need as few as four hours or as many as 10. How do you know how much sleep you need? Think of how you feel in the morning. If you feel refreshed upon awakening, you've had enough sleep.

What's in a sleeping pill?

Most OTC sleep aids contain antihistamines. Some common antihistamines found in OTC sleep aids are benadryl (diphenhydramine) and doxylamine. The primary use of antihistamines is to block the effect of histamine on the nasal passages reducing congestion, sneezing and coughing. A side effect of antihistamines is the induction of drowsiness so they are sometimes used to treat insomnia. They may give people a groggy feeling the next morning. Antihistamines should also be avoided in people with heart disease and in older people. Older people may become confused with antihistamines and older men can develop problems urinating.

Prescription sleeping pills are different, they act in areas of the brain to help promote sleep. Since the 1970s, the most commonly prescribed are benzodiazepines, such as valium. They work on a molecular level with the brain chemical known as GABA. GABA opens chloride channels, quieting brain activity and allowing sleep. Benzodiazepines work in conjunction with GABA to enhance sleep. Some benzodiazepines used as sleep aids are Halcion (triazolam), Prosom (estazolam) and Restoril (temazepam).

Newer sleep medications are unrelated to benzodiazepines but block the same receptors and therefore mimic benzodiazepines. Ambien (zolpidem), Sonata (zaleplon) and Lunesta (eszopiclone) are newer, non-benzodiazepine medications used to treat insomnia. These drugs have fewer side effects and are being prescribed more commonly than the benzodiazepines. Other prescription drugs are in the "pipeline" for approval to treat insomnia.

In 2005, the U.S. Food and Drug Administration (FDA) approved Rozerem (ramelteon) for the treatment of insomnia characterized by difficulty falling asleep. It acts as a selective agonist at two melatonin receptors

If you are taking a prescription or OTC sleep aid, don't ever take more than the recommended dose, don't drink alcohol while taking them, and don't combine different kinds. Pregnant women should avoid sleeping pills altogether.

Two dietary supplements -- the valerian root and melatonin -- have recently been touted as "natural" sleep aids, but few studies have been conducted to determine their effectiveness, how they work or possible side effects. Melatonin, which is the most widely used supplement, is secreted by the brain's pineal gland in response to darkness, resulting in a lowered body temperature and drowsiness. Initial reports indicate the supplement is best used to regulate the body's internal clock when adjusting to jet lag of about an hour or to shift work.

Coping with sleeplessness

Peter Hauri, Ph.D., a sleep expert and author of "No More Sleepless Nights," says about 10 percent of the U.S. population has serious problems with insomnia that chronically affects their daily functioning. How he works with his patients may also help those with occasional sleep problems. "Insomniacs typically stay in bed too long in a shallow sleep, when they're half awake," he says. "It's not restful or restorative.

"It's a paradox," Dr. Hauri adds. "Most good sleepers don't stay in bed long enough, but most insomniacs stay in bed too long."

The clock is another problem. "A clock in the bedroom is poisonous if you can't sleep," he says. "You just keep looking at it. Set the alarm and then hide it."

Dr. Hauri also suggests that if you are having trouble sleeping, try a warm bath or glass of warm milk before bedtime. There may be an underlying medical or psychological problem that needs to be addressed. You may get too much caffeine, not get enough exercise or not unwind before you go to bed. "Some people worry so much about falling asleep that it makes it even more difficult," he says.

Taking a sleeping pill is appropriate when used according to directions during those rare occasions when sleeping is difficult. Examples are adjusting to jet lag; changes in your shift-rotation; a personal crisis, such as the loss of a loved one; or stress related to a specific event, such as giving a presentation.

There are two major drawbacks to taking sleep aids chronically:

- The pills start to lose their effectiveness.
- When a person stops taking the pill, it becomes even harder to sleep.

Remember that you may even have unrealistic assumptions or expectations about how much sleep you need. "You don't need much more than 7 1/2 hours of sleep a night," Dr. Hauri says.

The StayWell Company, LLC 2016

Sleep Apnea

Sleep apnea is a disorder in which breathing stops and starts during sleep. More than half of all cases are diagnosed in people age 40 or older. Sleep apnea is more common in men than women. It is a major cause of daytime sleepiness and can potentially have serious consequences.

Causes

Anyone can have sleep apnea, but you are at higher risk if you:

- Are male
- Are over age 40
- Snore loudly
- Are overweight or obese
- Have high blood pressure
- Have a structural abnormality in your nose, throat or other parts of your upper airway that causes blockage or have nasal allergies and/or chronic nasal congestion
- Have a family history of sleep apnea
- Use alcohol, tobacco or sleeping pills

Symptoms

If you or someone else notices you that you stop and start breathing while sleeping, you may have sleep apnea. Other signs and symptoms include:

- Excessive daytime sleepiness
- Poor concentration
- Depression or irritability
- Early morning headaches

Types of Sleep Apnea

There are two types of sleep apnea: obstructive, which is common, and central, which is extremely rare.

- Obstructive sleep apnea occurs when the throat muscles and tongue relax during sleep. This can block the opening of your airway, causing breathing to become difficult or to stop altogether. When your brain senses you aren't getting enough oxygen, it briefly wakes you enough to resume breathing. This cycle can repeat itself as many as 20 or 30 times an hour. For most people with obstructive sleep apnea, each awakening is so brief they are not aware it happened. Although you may not be aware that your sleep was interrupted, this condition prevents you from reaching a deep, restful sleep. Most people with obstructive sleep apnea also snore, although not everyone who snores has sleep apnea.
- Central sleep apnea is much less common than obstructive sleep apnea. This condition occurs when the brain fails to send the proper signals to the muscles that control breathing. Unlike the obstructive type, which is intermittent, central sleep apnea is a constant problem and is frequently present from birth. Congenital central hypoventilation syndrome is an inherited condition that results in both daytime apnea and more profound apnea at night. The responsible gene has been isolated. Most people with central sleep apnea require assisted ventilation during sleep.

Treatment

If you have symptoms of sleep apnea, you may have a test called polysomnography. During this test, you are hooked up to equipment that records a variety of body functions during sleep such as pulse rate, respiratory rate, oxygen saturation and EEG activity. Early diagnosis and treatment of sleep apnea is important, because the condition may be associated with irregular heartbeat, high blood pressure, heart attack and stroke.

Treatment for sleep apnea varies, depending on your medical history, the physical examination and the results of your polysomnography.

The most common treatment for sleep apnea is continuous positive airway pressure (CPAP). In this treatment, you wear a mask over your nose during sleep, and slight pressure from a compressor forces air through the nasal passages. The air pressure is adjusted so it is just enough to prevent your throat from collapsing during sleep.

Some people who have sleep apnea may need surgery. Several surgical procedures can be used to increase the size of the airway. This may include the correction of structural deformities or the removal of:

- Adenoids and tonsils (especially in children)
- Nasal polyps (noncancerous tumors) or other growths
- Excess tissue in the airway

Self-Care

If you have obstructive sleep apnea, there are several steps you can take that may help your condition.

- Lose excess weight. Even a 10 percent weight loss can reduce the occurrence of sleep apnea. An ideal body mass index (BMI) is 18.5 to 24.9. If your BMI is 25 or higher, losing weight may improve or stop sleep apnea.
- If you usually sleep on your back, try sleeping on your side. Special pillows and other devices are available to help you sleep in a side position.
- Don't use alcohol, tobacco, sleeping pills or other medication that cause drowsiness or sedation. These substances can make the airway more likely to collapse during sleep and prolong the periods of sleep apnea. Sleeping pills or sedatives can prevent you from waking up enough to breathe.

Decision Guide for Sleep Apnea

Symptoms/Signs	Action
Observed episodes of sleep apnea	See provider
Daytime sleepiness	See provider
Choking or gasping for breath	Emergency: Call 911



Becoming Aware of Obstructive Sleep Apnea

People who feel exhausted during the day may suffer from obstructive sleep apnea, a sleep disorder that's only become widely recognized in the last few years. In sleep apnea breathing stops or gets very shallow during sleep. Each pause typically lasts 10-20 seconds or more. These pauses can occur 20 to 30 times or more an hour. The most common type of sleep apnea is obstructive sleep apnea. In this form the throat briefly collapses, causing pauses in breathing. The pauses in breathing, causes the oxygen level in the blood to drop and the carbon dioxide level to rise. Normal breaths then start again with a loud snort or choking sound. The other type of sleep apnea is called central apnea. It is rare and happens when the area of the brain that controls breathing doesn't send the correct signals to the breathing muscles.

The body needs sleep for rest and rejuvenation. "Sleep is an essential part of your life. If your sleep is disrupted or you do not have enough sleep, you'll be less alert during the day and perhaps suffer serious consequences for your health in general," says Dr. Vishesh Kapur, an assistant professor of pulmonary and critical care medicine at the University of Washington School of Medicine. Untreated sleep apnea can increase the chance of having high blood pressure, a heart attack or stroke. It can also increase the risk of diabetes and the risk for work-related accidents and driving accidents. A study in the Nov 10, 2005 New England Journal of Medicine reported that in patients with sleep apnea the rate of both stroke and death was twice as high, over a three year period, as that in people with normal sleep patterns.

In sleep apnea, it may be the bed partner who notices the problem first. Often, its victims do not know they have a sleep disorder. They only know they wake up wishing that they could go back to bed. They may also not get enough sleep to begin with, a common problem in today's society, Dr. Kapur says. They may assume their problem is that they need more sleep, and take naps in the afternoon or sleep extra long hours on weekends. But the real problem is their quality of sleep.

It's often up to the bed partner to notice the chief symptom of sleep apnea: snoring. What makes apnea different from other types of snoring is that in apnea, the soft palate and soft tissues of the pharynx block the airway so much that the person simply stops breathing. The build up of carbon dioxide and interruption of oxygen eventually causes the sleeper to arouse enough to gasp for a breath of air and then the cycle begins again. This disruption prevents the sufferer from getting high-quality sleep.

Many snorers, but not all, have apnea. There is first the distinctive, rhythmic snoring sound. There's the regular snore -- then a pause. The person has stopped breathing. Then the air rushes back in with a distinctive, loud snort, and then a breath. Many people do this a few times an hour, Dr. Kapur says, and that's OK if they feel alright in the morning. But apnea needs treatment if the person stops breathing dozens of times an hour, and wakes up exhausted.

One of the chief causes of apnea is obesity. The weight of extra soft tissue in your throat and an obese chin presses down on what is already a narrow airway to begin with, Dr. Kapur says. But thin people can get apnea, too. In part, it's a sign of aging. The muscles lose their resting tension. Other cause are large tonsils and adenoids and a small mouth and throat area.

The first thing to do if you think you have apnea or any other sleep disorder is to discuss the matter with your health care provider. He or she may refer you to a sleep specialist. The sleep specialist will interview you. If the sleep disorder is affecting your life or threatening your health, you may be invited into a sleep lab. There, you'll be connected to monitors and fall asleep in a comfortable bedroom-like highly instrumented hospital room. Staff will measure everything from your breathing and brain waves to the tone of your chin muscles. As you doze, they'll diagnose you.

Doctors may suggest many solutions to apnea, including weight loss. One popular treatment is the CPAP, Continuous Positive Airway Pressure machine. The CPAP mask is worn over your nose. As you sleep, the staff calibrates the CPAP so it blows just the right amount of air into your body, propping open your airways. Then, you take the machine home to use at night.

People suffering exhaustion from apnea are often delighted with the CPAP, Dr. Kapur says. Sometimes, people with less severe cases find the machine uncomfortable and not worth the effort. Some of these people may get a dental appliance, which is installed to pull out the jaw enough to open the airway.

The StayWell Company, LLC 2016

Snoring

Although often depicted as cute or comic in television shows, theater and movies, snoring is not funny. It can disturb sound, restful sleep both for the person snoring and anyone within earshot of his or her rough, hoarse, nightly orchestrations. About 35 million Americans snore at some time, to some degree, during sleep.

The snoring sound occurs through a fairly complex, mechanical process. The first requirement is a narrowing of the upper airway passages or a looseness or flapping in the throat. Narrow upper air passages force a person to work harder at breathing during sleep, pulling in air with greater force to try to overcome the narrowing, or obstruction. Greater airflow through a narrow or obstructed passage causes a drop in pressure, pulling the walls of the throat inward. The flexible walls of the throat begin to recoil and vibrate, setting off the sound we know as snoring.

Snoring can be caused by one factor or by many, depending on the individual. And, it can be its own problem or indicate other medical conditions, some of them serious. The list of causes and aggravating factors is a lengthy one. Leading the list of causes is a narrowing of the upper air passages from an increase in size of throat tissues, such as large tonsils and adenoids; an enlarged or long uvula; an enlarged tongue; an increased neck size, especially in people who are overweight; narrowed nasal passages, from allergies, infection, polyps or tumors; and a deviated septum. Other causes and aggravating factors include obesity, poor muscle tone in the throat, fatigue, medication, alcohol consumption, smoking and sleeping on your back.

Because snoring is a breathing problem, it can mean you get less oxygen during sleep, causing you to wake up feeling tired. In many cases, snoring can be a warning sign of obstructive sleep apnea, a potentially dangerous medical condition in which breathing actually stops for 10 seconds to more than a minute, hundreds of times a night. "Apnea" is a Greek word that means "without breath." This interruption in breathing lowers oxygen levels and raises carbon dioxide levels in the blood, a condition doctors call hypoxia.

Sleep apnea can have serious consequences for someone with a heart condition or circulatory problem; for others, it can mean chronic fatigue -- affecting work and home life. In fact, the fatigue from sleep apnea boosts the risk of traffic accidents sevenfold, a risk eclipsed only by driving while intoxicated. Ten to 15 percent of people who snore have obstructive sleep apnea to a mild, moderate or severe degree.

What to Do

If your snoring is loud enough or frequent enough to disturb others in your home, or if it leaves you feeling fatigued during the hours of the day during which you need to be awake and alert, make an appointment to see your physician. Your health care provider may make several suggestions or may recommend that you see a specialist for an evaluation of your problem. If you feel chronically tired during the day, ask your sleeping partner or housemates whether you snore. Keep a sleep diary, recording the time you go to bed, the time you awaken, how you felt the next day and whether you recall awakening during the night. Record whether you had a large meal or drank alcohol within a few hours of bedtime and whether you had symptoms of a cold or allergy, and which, if any, medications you took, including over-the-counter medications.

Use Medicine Effectively

Depending on the cause of your snoring, a physician may prescribe medication. If nasal allergies or infection is causing the problem, effective medicines are available. If you're taking over-the-counter medications to help you sleep, stop and call your health care provider to discuss. If you have allergies or a cold, take over-the-counter medications, when appropriate. If you smoke, your provider also may prescribe medication to help you quit smoking. A specialist may prescribe a special mask, known as a CPAP device, to be worn at night. The device creates constant positive air pressure on your upper airway.








Other Treatments for Snoring

The American Academy of Otolaryngology says other possible treatments for snoring, include: Laser Assisted Uvula Palatoplasty (LAUP), a surgical procedure that removes tissue obstructing the airway and Injection snoreplasty, a nonsurgical treatment for snoring that involves injecting a hardening agent into the upper palate.

Self-care Steps for Snoring

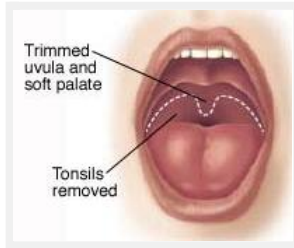
- If you're overweight by 10% or more, try to lose weight if you're overweight by 10 to 20 percent of your body weight.
- If you smoke, quit.
- Sleep on your side or stomach; sleeping on your back can worsen snoring.
- Do not eat a large meal or drink alcohol within three hours of bedtime
- Be careful about using over-the-counter devices and medications to stop snoring unless advised to try one by your health care provider.
- Cut back on caffeine or cut it out.

Decision Guide For Snoring

Symptoms/Signs	Action
Adult who snores occasionally and not too loudly	 Use self-care
Adult who snores routinely and/or loudly	 Call provider's office
Snoring that is accompanied by gasping for breath or brief cessation in breathing	 See provider
Obese adult or child who snores	 Call provider's office
Adult or child who snores and is routinely fatigued	 Call provider's office
Not getting routine exercise	 Use self-care
Consuming too much caffeine	 Use self-care

Surgical Treatment for Snoring and Sleep Apnea

The goal of most surgeries for breathing problems is to widen the airway. This is done by taking out or shrinking excess tissue where the mouth meets the throat. Nasal and jaw surgery can help correct nose or jaw problems that contribute to snoring and apnea. This sheet describes procedures that may be recommended for you.



UPPP trims the uvula and removes other tissue from the back of the mouth.

UPPP (Uvulopalatopharyngoplasty)

This is the most common procedure for sleep apnea. It trims the soft palate and uvula, and removes the tonsils and other tissue. It is major surgery performed in a hospital.

Risks and Complications of UPPP

- | | |
|---|---|
| <ul style="list-style-type: none"> • Bleeding • Throat pain • Scarring | <ul style="list-style-type: none"> • Nasal-sounding speech • False feeling that something is in throat • Liquids sometimes going into nose when swallowing |
|---|---|

LAUP (Laser-Assisted Uvulopalatoplasty)

This procedure helps relieve snoring. It may also be used in some cases of mild apnea. The doctor uses a laser or electric current to remove some of the soft palate and part or all of the uvula. This treatment may be done over several sessions in the doctor's office.

Risks and Complications of LAUP

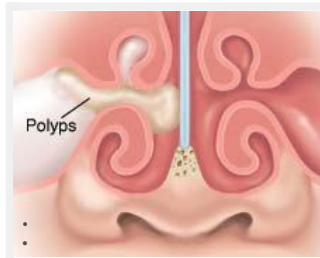
The risks and complications are the same as for UPPP, but less likely to occur.

RFA (Radiofrequency Ablation)

This procedure helps relieve snoring. The doctor uses radio waves to reduce the size of the turbinates or uvula, nearby tissue, and sometimes the back of the tongue.

Risks and Complications of RFA

- | | |
|---|---|
| <ul style="list-style-type: none"> • Mouth ulcer • Nerve pain | <ul style="list-style-type: none"> • Swelling in airway • Pocket of pus (abscess) on tongue |
|---|---|

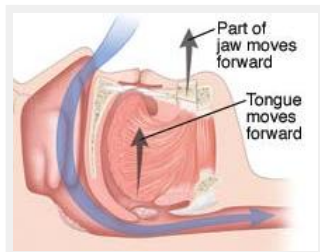


Nasal Surgery

Problems in the nose can make snoring or sleep apnea worse. They can also make CPAP (a common treatment for snoring and sleep apnea) harder to use. If blockages in your nose are severe, surgery can improve the airflow. It can reduce the size of the turbinates, straighten a deviated septum, and remove any polyps (overgrowths of sinus lining.)

Risks and Complications of Nasal Surgery

- Bruising
- Bleeding
- Damage to or perforation of septum
- Dryness in nose



Jaw Surgery

If your jaw sits too far back, your tongue may also be too far back. That makes the tongue more likely to block the airway when you sleep. Moving the jaw forward moves the tongue forward and widens the airway overall.

Risks and Complications of Jaw Surgery

In some cases, the jaw does not heal in the desired position. Your doctor can tell you more about this. Other possible complications include:

- Loss of teeth or need for orthodontic treatment to realign teeth.

More Severe Cases

If your apnea is severe and no other treatment helps, other kinds of surgery may help. Your doctor can tell you about them. Be sure you understand their risks, as well as their benefits.

The StayWell Company, LLC 2016

The Story Behind Sleep Apnea

Do you snore at night or feel tired during the day? If so, you could be suffering from obstructive sleep apnea, a disorder that affects millions of Americans. Most people with sleep apnea aren't aware they have it.

When you have obstructive sleep apnea, your breathing becomes shallow or stops because your throat briefly collapses while you're asleep, temporarily closing your airway. Pauses can last 20 seconds or more and can occur 30 times or more every hour, according to the American Sleep Apnea Association (ASAA).

When these pauses happen, the amount of oxygen in your blood may drop. Eventually, your brain tells your upper airway to reopen. Normal breathing starts again with a loud snort or choking sound. When you start breathing again, you may not wake up completely, but your sleep is disrupted.

Obstructive sleep apnea occurs in both adults and children.

Another form of sleep apnea, called central sleep apnea, happens when the area in your brain that controls breathing doesn't send the proper signals to the muscles that help you breathe, according to the National Heart, Lung and Blood Institute. Central sleep apnea is rare.

Common symptoms

Snoring and daytime fatigue are two common signs of obstructive sleep apnea, but there are others, as well. And not everyone with obstructive sleep apnea snores. A headache or dry throat when you first wake up, trouble remembering or concentrating, and irritability or moodiness also may be symptoms.

Sleep apnea occurs twice as often in men as in women. But, after menopause, a woman's risk doubles or triples, the ASAA says. Most people who have sleep apnea are overweight, snore loudly and may make snorting sounds while they're asleep. That's why a spouse or other family member may notice the problem first.

If you have high blood pressure, a family history of sleep apnea or narrow air passages in your nose, throat or mouth, you may be more likely to develop the condition. A history of injury or nasal allergies also increases your risk.

Health effects

Research indicates that sleep apnea increases your risk of high blood pressure. It also has been linked to other serious health problems, including stroke, congestive heart failure, obesity and diabetes. In one study, there was a 50 percent increase in heart attack risk. Because you're so tired, you may be at risk of having an accident at work or while driving.

What to do

Changes in your daily activities or habits may help you breathe better at night:

- Avoid alcohol and medications that cause drowsiness. They make your throat muscles relax.
- Lose excess weight. Even a 10 percent drop in body weight may help. If less soft tissue is around your airway, it's less likely to close.
- Sleep on your side instead of your back so that your tongue can't relax into the back of your throat.

If symptoms persist, you may need treatment. The most common treatment for adults with obstructive sleep apnea is continuous positive airway pressure (CPAP). A mask that fits over your nose blows air into your airway to keep it open while you sleep. A custom-made mouthpiece is another alternative. If these approaches don't work, others, including surgery, may be recommended.

The StayWell Company, LLC 2016