

## Sleep Apnea

### An underdiagnosed disorder

**D**o you find yourself excessively sleepy in the daytime...even after a proper amount of sleep? Does your bed partner keep you awake with loud snoring, snorting, gasping, or choking sounds during the night? These are just some of the symptoms that may be associated with a treatable disorder known as sleep apnea. Sleep apnea is clinically defined in adults as a cessation of breath that lasts at least 10 seconds and in children as a cessation of breath that lasts the equivalent of two-and-a-half missed breaths.<sup>1</sup>

People who suffer from sleep apnea may go without breath 10 or more seconds per episode and may have episode after episode throughout the night, every night. In fact, apnea is a Greek word meaning “without breath.”<sup>1</sup> Those with apnea literally stop breathing in their sleep or have very shallow breathing (known as hypopnea) while sleeping—all of which can lead to a reduction in airflow, struggle to breathe, and dropped levels of oxygen in the blood.<sup>1,2</sup>

“Sleep apnea is very common, as common as adult diabetes...”<sup>1</sup> It is estimated that 12 to 18 million Americans have sleep apnea.<sup>2</sup> Though sleep apnea is a common disorder, many people don’t know they have it because they awaken and start breathing again over and over during the night, but they are not aware of these events. Unless a bed partner or other household member notices it, the person may not recognize that their daytime symptoms are tied to their sleep. One to three percent of children ages 2–18 are also estimated to have sleep apnea; however, because children do not typically complain of tiredness during the day and do not display overly “sleepy” behaviors, such as yawning,<sup>3</sup> the disorder may be missed. Left undiagnosed and/or untreated, sleep apnea can have a multitude of consequences for adults and children...it can, in fact, be life-threatening.



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# Types of Sleep Apnea

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## Three possibilities

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When we are awake and normally when we sleep, our throat muscles keep the throat open, and air flows into our lungs. Sleep apnea occurs when enough air cannot move into the lungs while a person is sleeping.<sup>2</sup> When this happens, the amount of oxygen in the blood may drop. Normal breaths may start again with a loud snort, gasp, or choking sound.<sup>2</sup>

There are three types of sleep apnea:

### 1 Obstructive sleep apnea (OSA):

Obstructive sleep apnea is the most common type of sleep apnea. It accounts for more than 95 percent of cases of sleep apnea.<sup>4</sup> In OSA, the throat briefly collapses, causing pauses in your breathing. This collapse may occur in the following conditions:

- the throat muscles and tongue relax more than usual;
- the tonsils and adenoids are large;
- excess weight results in extra soft tissue in the throat, making it harder to keep the throat area open;
- the shape of the head and neck (body structure) results in a smaller airway size in the mouth and throat area.<sup>2</sup>

### 2 Central sleep apnea (CSA):

Central sleep apnea is a rare type of sleep apnea. In CSA, the area of the brain that controls breathing doesn't send the correct signals to the breathing muscles. As a result, there is no effort to breathe at all for brief periods. In people with CSA, snoring does not typically occur.<sup>2</sup>



### 3 Combination or mixed sleep apnea:

Combination or mixed sleep apnea is exactly as the words describe—it is a combination or mix of obstructive and central sleep apnea, which is partly due to throat collapse and partly due to controls in the brain.<sup>5</sup>

“Despite the difference in the root cause of each type, in all three, people with untreated sleep apnea stop breathing repeatedly during their sleep, sometimes hundreds of times during the night and often for a minute or longer.”<sup>5</sup>

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## Risk Factors

### Who is at risk for sleep apnea?

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When we think of sleep apnea, we often think of a cartoon character who is a large, obese, middle-aged male, feet sticking out over the footboard of his bed, and whose snoring sends his bed partner to the other side of the house. Though this conjures up a smile, sleep apnea is serious. Sleep apnea can result in a multitude of health, productivity, and interpersonal problems, and it can be life-threatening.

Sleep apnea occurs in all age groups, both sexes, among all body types, and ethnicities—large or small, male or female, adult or child, African American or Caucasian. Sleep apnea, however, is more common among certain groups, as follows:

- family history of sleep apnea,
- excess weight,
- over age 40,
- male gender (although it may be underdiagnosed in women),<sup>6</sup>
- ethnicity (African Americans, Pacific Islanders, and Mexicans),
- a large neck,
- a recessed chin,
- abnormalities in the structure of the upper airway,
- smoking, and
- alcohol use.<sup>1, 6</sup>

Remember: although these factors put you at higher risk for sleep apnea, anyone can have sleep apnea—even children (which we will discuss in more detail later in this issue of HealthHints). If you, your bed partner, family member, or friend exhibit signs or symptoms of sleep apnea, consult your doctor immediately for diagnosis.

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## Signs & Symptoms

How do I know if I have sleep apnea?

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**A** major problem in sleep apnea diagnosis is that the person who has it often does not associate awake hour symptoms with sleep problems—unless someone else calls their attention to it. As a family member or friend, you may be able to help someone with sleep apnea or discover it in yourself by looking for the signs and symptoms described below.

### Symptoms

- excessive daytime sleepiness (may not be noticeable in children—see more on children and their symptoms later in this issue of HealthHints)
- frequent episodes of obstructed breathing during sleep (usually assessed by someone sleeping in the same room—not the individual)<sup>7</sup>

### Associated Signs

- loud snoring (often punctuated with periods of silence—the apneas<sup>1</sup>); though this is a common sign, it may not be present, especially in children<sup>1</sup>
- nocturnal snorting, gasping, choking (may wake self up)
- morning headaches
- unrefreshing sleep
- dry mouth upon awakening
- chest retraction during sleep in young children (chest pulls in)
- high blood pressure
- excess weight
- irritability
- mood swings or change in personality
- depression
- difficulty concentrating

- excessive perspiring during sleep
- heartburn
- reduced libido
- insomnia
- frequent nocturnal urination (nocturia)
- restless sleep
- confusion upon awakening<sup>7</sup>

If you or someone you know experiences signs and symptoms on a regular basis, sleep apnea may be the reason. Consult your doctor immediately.

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## Potential Consequences

Risks associated with undiagnosed sleep apnea

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**I**f left undiagnosed or untreated, sleep apnea can be potentially life threatening. Even if your life is not immediately threatened, however, there are risks associated with sleep apnea. Quality and duration of sleep affect both our performance and our physical well-being.

“How we function during our waking hours is greatly influenced by duration and quality of nighttime sleep.... Concentration, alertness and reaction time are among the many performance factors that can suffer when sleep is acutely or chronically disturbed.”<sup>4</sup> Learning and memory difficulties may arise, as well as irritability and/or depression.<sup>6</sup> Daytime sleepiness can result in accidents, lost productivity, and interpersonal relationship problems.<sup>7</sup> Studies show that people who suffer from sleep apnea have a higher incidence of work-related and driving-related accidents.<sup>8</sup> Untreated sleep apnea patients are three times (or more) likely to have automobile accidents.<sup>6</sup>

Physiological health risks associated with undiagnosed sleep apnea include heart attack, congestive heart failure, stroke, impotence/sexual dysfunction, weight gain, headaches, irregular heartbeat, high blood pressure, heart disease, and kidney disease.<sup>5, 6, 7, 8, 9</sup>

In fact, recently reported studies have found that the risk of high blood pressure was nearly doubled for people between the ages of 32 and 59 who slept five hours or less each night,<sup>9</sup> and

people who suffered from the frequent breathing interruptions of sleep apnea had two to four times increased risk of cardiac arrhythmias as they sleep.<sup>10</sup> Other serious problems associated with sleep apnea include inefficiencies in metabolism, poor development of muscle mass, and immune deficiencies.<sup>4</sup>

The combination of low oxygen levels and fragmented sleep are the major contributors to most of the ill effects that the person with sleep apnea suffers.<sup>8</sup> It is important to have a doctor evaluate the symptoms and make an appropriate diagnosis and treatment plan.

### Consequences of Undiagnosed and/or Untreated Sleep Apnea are Serious

Take your symptoms seriously. If you or a loved one have signs and symptoms of sleep apnea, act now. See your doctor immediately. Remember, there are serious consequences that may result if your condition goes undiagnosed and untreated.

#### Performance & Psychological Consequences:

- Difficulty concentrating
- Not able to stay alert
- Decreased reaction time
- Learning and memory difficulties
- Irritability
- Depression
- Loss in productivity
- Higher risk for accidents
- Interpersonal problems<sup>4, 6, 7, 8</sup>

#### Physiological/Physical Consequences:

- Heart attack
- Congestive heart failure
- Stroke
- Impotence/sexual dysfunction
- Weight gain
- Headaches
- Irregular heartbeat
- High blood pressure
- Heart disease
- Kidney disease
- Inefficiencies in metabolism
- Poor development of muscle mass
- Immune deficiencies<sup>4, 5, 6, 7, 8, 9, 10</sup>

### What Happens during an Apneic Event?

During each apneic event (involuntary pause in breathing), the person is unable to breathe in oxygen and breathe out carbon dioxide. This pattern results in low levels of oxygen and increased levels of carbon dioxide in the blood. The reduction in oxygen and increase in carbon dioxide alert the brain to resume breathing, which results in an arousal. Each time arousal is experienced, a signal is sent from the brain to the upper airway muscles to open the airway. In this way, breathing is resumed, often with a loud snort or gasp. Frequent arousals are obviously necessary for breathing to restart, but they also prevent the person from getting enough restorative, deep sleep. It is not uncommon for a person with sleep apnea to have 20 to 60 or more apneic events per hour.<sup>6</sup>



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## Evaluation & Diagnosis

### What to expect

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If you think you may have sleep apnea, perhaps you have recognized some of the signs and symptoms, or your spouse has told you about your sleep habits. You need to make an appointment with your doctor.

Your doctor will likely ask you about your family and medical history, as well as your current symptoms, and do a physical examination.<sup>2</sup> If he/she suspects that you have sleep apnea (or another type of sleep disturbance), he/she may recommend a polysomnography (PSG). A polysomnography is a sleep test usually performed in a sleep laboratory or sleep center overnight (although home monitors are sometimes used, depending on the individual situation).

During the sleep test, recordings will be made of :

- brain activity (electroencephalogram [EEG]),
- eye movement (electrovulogram [EOG]),
- muscle activity,
- heart rate and rhythm (electrocardiogram [EKG]),
- breathing—how much air moves in and out of your lungs (using chest bands), and
- the percentage of oxygen and carbon dioxide in your blood.<sup>2, 11</sup>

“A PSG is painless. You will go to sleep as usual. The staff at the sleep center will monitor your sleep throughout the night. The results of your PSG will be analyzed by a sleep medicine specialist to see if you have sleep apnea, how severe it is, and what treatment may be recommended.

In certain circumstances, the PSG can be done at home. A home monitor can be used to record your heart rate, how air moves in and out of your lungs, the amount of oxygen in your blood, and your breathing effort. For this test, a technician will come to your home and help you apply the monitor that you will wear overnight. You will go to sleep as usual, and the technician will come back the next morning to get the monitor and send the results to your doctor.”<sup>2</sup>

A Multiple Sleep Latency Test (MSLT) may also be performed. The MSLT “measures the speed of falling asleep. In this test, patients are given several opportunities to fall asleep during the course of a day when they would normally be awake. For each opportunity, time to fall asleep is measured. Individuals who fall asleep in less than 5 minutes are likely to require some type of treatment for sleep disorders. The MSLT may be useful to measure the degree of excessive daytime sleepiness and to rule out other types of sleep disorders.”<sup>6</sup>

“Once all of your tests are completed, the sleep medicine specialist will review the results and work with you and your family to develop a treatment plan. In some cases, you may also need to see another physician for evaluation of:

- Lung problems (treated by a pulmonologist);
- Problems with the brain or nerves (treated by a neurologist);
- Heart or blood pressure problems (treated by a cardiologist);
- Ear, nose, or throat problems (treated by an ENT specialist);
- Mental health, such as anxiety or depression (treated by a psychologist or psychiatrist).”<sup>2</sup>

### Check Your Insurance!

When being evaluated for sleep apnea, it is essential to check the terms of your insurance. Find out if you need to have a referral to any type of doctor other than your regular physician. Check the coverage for sleep centers and home monitors. Check the coverage for treatment options such as CPAP, oral appliances, and surgeries (discussed below). Often, all that is needed is a written explanation about the health threats of sleep apnea for you to gain coverage, but be sure to take appropriate steps. Don't let a lack of coverage keep you from appropriate treatment—remember, sleep apnea is serious and can have detrimental consequences on your health and all aspects of your life including work productivity, and intrerpersonal issues.



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# Treatment

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## Making changes

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Depending on the severity of your sleep apnea, treatment options may vary. If your case is mild, you may only need to make some lifestyle or behavioral changes; however, if your apnea is more serious, other therapies may be required. "The specific therapy for sleep apnea is tailored to the individual patient based on medical history, physical examination, and the results of polysomnography. Medications are generally not effective in the treatment of sleep apnea. Oxygen is sometimes used in patients with central apnea caused by heart failure. It is not used to treat obstructive sleep apnea."<sup>6</sup>

### Lifestyle & Behavioral Changes

- Avoid alcohol; it causes frequent nighttime awakenings and makes the upper airway breathing muscles relax.
- Quit smoking. Cigarette smoking worsens swelling in the upper airway, making apnea (and snoring) worse.
- Avoid medicines that make you sleepy. They make it harder for your throat to stay open while you sleep.
- Lose weight if you are overweight. Even a little weight loss can improve your symptoms. If you are overweight, this is the most important action you can take to **cure** your sleep apnea. (CPAP [see below] only treats it; weight loss can **cure** it in the overweight person.)
- Some patients with mild sleep apnea or heavy snoring have fewer breathing problems when they are lying on their sides instead of their backs. Sleep on your side instead of your back. Sleeping on your side may help keep your throat open.<sup>2, 12</sup> Although there are pillows and other devices to help you sleep on your side, one inexpensive, homemade way to accomplish this sleeping position is to pin a tennis ball onto the back of your sleepwear. Consult your doctor about the best choice for you.



Although people with moderate or severe sleep apnea will need to make these changes as well, they will also need other treatments.<sup>2</sup>

### Physical & Mechanical Appliances

"The treatment of choice for obstructive sleep apnea is a continuous positive airway pressure device (CPAP). CPAP is a mask that fits over the nose and/or mouth and gently blows air into the airway to help keep it open during sleep. This method of treatment is highly effective. Using the CPAP as recommended by your doctor is very important."<sup>12</sup>

"The majority of people who use CPAP find immediate symptom relief and are delighted with their increased energy and mental sharpness during the day. Many patients have said, 'CPAP changed my life!' But some patients find CPAP masks uncomfortable, even though it may control their sleep apnea. Many need extra assistance to get a mask that fits correctly. Side effects are usually mild and temporary, and include nasal congestion, sore eyes, headaches, and abdominal bloating. Many people get used to CPAP over two-to-twelve weeks, and according to some research studies, less than one-half of CPAP patients discontinue treatment... Follow-up is the most important factor in patient compliance."<sup>13</sup>

Other approaches for treating sleep apnea include a variety of oral dental appliances, which reposition the lower jaw and tongue to keep the airway open.<sup>12</sup> Oral appliances can work in three ways by:

- repositioning the lower jaw, tongue, soft palate and uvula;
- stabilizing the lower jaw and tongue; and
- increasing the muscle tone of the tongue.<sup>14</sup>

"Dentists with training in oral appliance therapy are familiar with the various designs of appliances. They can determine which one is best suited for your specific needs. The dentist will work with your physician as part of the medical team in your diagnosis, treatment, and ongoing care. Determination of effective treatment can only be made by joint consultation of your dentist and physician. The initial evaluation phase of oral appliance therapy can take from several weeks to several months to complete. This includes examination, evaluation to deter-

mine the most appropriate oral appliance, fitting, maximizing adaptation of the appliance, and the function."<sup>14</sup>

The advantages of oral appliances are that they are:

- comfortable (most people adapt to wearing an appliance within two weeks),
- easy to wear,
- small and convenient to carry when traveling, and
- non-invasive (treatment with oral appliances is reversible).<sup>14</sup>

### **Surgical Procedures**

Upper airway surgery to remove tissue in the airway is also a common procedure used to treat sleep apnea. In general, these approaches are most helpful for mild disease or heavy snoring.<sup>12</sup>

Some of the most common of these surgeries include:

**Uvulopalatopharyngoplasty (UPPP):** "During this procedure, tissue from the rear of your mouth and top of your throat is removed. Your tonsils and adenoids usually are removed as well. This type of surgery may be successful in stopping throat structures from vibrating and causing snoring. However, it may be less successful in treating sleep apnea because tissue farther down your throat may still block your air passage. UPPP usually is performed in a hospital and requires a general anesthetic. After the procedure, you may have a very sore throat for a number of days and be able to eat only soft foods. Full recovery generally takes about a month. This is the most common type of surgery to treat snoring and sleep apnea."<sup>15</sup>

**Laser-assisted uvulopalatoplasty (LAUP):** "Performed in your doctor's office, this procedure involves the use of a laser to remove part of your soft palate and shorten the triangular piece of tissue hanging from your soft palate (uvula), eliminating excess tissue that may obstruct your airway and cause snoring and sleep apnea."<sup>15</sup>

**Radiofrequency ablation (RFA):** In this office procedure, your doctor uses radiofrequency energy to remove tissue from your uvula, soft palate and tongue, which may help decrease snoring and your risk of sleep apnea. The radiofrequency energy is delivered to electrodes

at the tip of a surgical device, which heats and destroys some tissue in your mouth and throat.<sup>15</sup> This procedure may also be referred to as somnoplasty.<sup>7</sup>

"Both LAUP and RFA are less invasive and generally less painful than UPPP. However, these procedures aren't recommended if you have moderate to severe obstructive sleep apnea."<sup>15</sup>

**Tracheostomy:** Tracheostomy is a form of surgery that may be necessary if other treatments have failed and you have severe, life-threatening sleep apnea. "In this procedure, your surgeon makes an opening in your neck and inserts a metal or plastic tube through which you breathe. The opening is kept covered during the day. But at night, it's uncovered to allow air to pass in and out of your lungs, bypassing the blocked air passage in your throat."<sup>15</sup>

Other types of surgery may help reduce snoring and sleep apnea by clearing or enlarging air passages:

- nasal surgery to remove polyps or straighten a crooked partition between your nostrils (deviated nasal septum);
- removal of enlarged tonsils or adenoids (common in children);
- surgery to move the jaw, facial bones, and tongue forward;<sup>15</sup>
- procedures to treat obesity in the morbidly obese patient.<sup>6</sup>

### **Anesthetic & the Apneic Patient**

If you suspect or are aware that you have sleep apnea and are scheduled for surgery, tell your doctor and anesthesiologist. Patients with sleep apnea need to be closely monitored during surgery and recovery when anesthetic is administered. Anesthetic can relax the throat muscles as well as affect the brain response, which would normally cause arousal in the apneic patient. With correct information and close monitoring, your anesthetic experience can be handled appropriately.<sup>16</sup>

Treatments for central sleep apnea are more limited and may include:

### Treatment for associated medical problems

“Possible causes of central sleep apnea include heart or neuromuscular disorders, and treating those conditions may help. For example, optimizing therapy for heart failure may eliminate central sleep apnea.”<sup>15</sup>

### Supplemental oxygen

“Using supplemental oxygen while you sleep may help if you have central sleep apnea. Various forms of oxygen are available as well as different devices to delivery oxygen to your lungs.”<sup>15</sup>

### Continuous positive airway pressure (CPAP)

“This method, also used in obstructive sleep apnea, involves wearing a pressurized mask over your nose while you sleep. The mask is attached to a small pump that forces air through your airway to keep it from collapsing. CPAP may eliminate snoring and prevent sleep apnea.”<sup>15</sup>

### Bilevel positive airway pressure (bilevel PAP):

“Unlike CPAP, which supplies steady, constant pressure to the upper airway as you breathe in and out, bilevel PAP builds to a higher pressure when you inhale and decreases to a lower pressure when you exhale. The goal of this treatment is to boost the weak breathing pattern of central sleep apnea. Some bilevel PAP devices can be set to automatically deliver a breath if the device detects you haven’t taken a breath after so many seconds.”<sup>15</sup>



## Children & Sleep Apnea

### Special considerations

Obstructive sleep apnea (OSA), the most common type of sleep apnea, is most likely to present itself in children between the ages of 2 and 6 years. One to 3 percent of children ages 2 to 18 are estimated to be afflicted with OSA, with boys and girls being equally affected.<sup>3</sup> The rise in childhood overweight gives cause for even more concern about potential rises in these estimates.<sup>17</sup> “If allowed to persist, sleep difficulties can severely undermine a child’s physical and psychological well-being.”<sup>3</sup>



Though symptoms of sleep apnea are similar in adults and children, there are a few special considerations in children.

Children with OSA do not typically complain of sleepiness during the day and may not display sleepy behaviors, such as yawning. In fact, many children, paradoxically, display increased activity. “Mood problems in children with sleep disturbances are virtually universal.”<sup>3</sup> Some behavioral indicators include emotional instability, anxiety, low tolerance to frustration, deficits in cognition and attention, impulsivity, and aggression.<sup>3</sup> “One recent study suggests that some children diagnosed with ADHD (Attention Hyperactive Deficit Disorder) actually have attention problems in school because of disturbed sleep patterns caused by obstructive sleep apnea.”<sup>18</sup> “...Sleep deprivation is often over-looked or attributed to attention-deficit or behavior disorders.”<sup>17</sup>

The most common cause of OSA in children is enlarged tonsils and adenoids. A rare cause of OSA in children is a tumor or growth in the airway. Certain conditions, such as Down’s

Syndrome, muscular dystrophy, or cerebral palsy, can also cause OSA.<sup>19, 20</sup>

Like adults, children also need to be seen immediately by a doctor if sleep apnea is suspected. Whether your concern is about the typical symptoms—snoring, gasping, silent pauses in breathing, chronic fatigue—or the behavioral aspects like attention problems, mood swings, and hyperactivity, see your child’s physician immediately. He/she may refer you to a pediatric neurologist who specializes in sleep disorders or to an ear, nose, and throat doctor (otolaryngologist) who will look at enlarged tonsils, adenoids, and other obstructing tissues or obstructed airways.<sup>20</sup> Your child may be referred for a sleep study (polysomnography [PSG]).

“The recording devices used during a sleep study are similar in adults and children.... None of the devices is painful and there are no needles involved, and sometimes the technician can attach the monitoring devices after the child has fallen asleep in the lab. Still the process may be a little frightening for a young child. Most sleep labs accommodate a parent’s stay with the child overnight.”<sup>11</sup>

Remember to check your insurance for appropriate referrals and seek advice about sleep lab facilities that accommodate children. For more information, see the American Sleep Apnea Association’s resource: *Having Your Child Evaluated for Obstructive Sleep Apnea* at <http://www.sleepapnea.org/resources/pubs/child.html>.

You can help your child by creating ways to have a good night’s sleep:

- Create a bedtime routine.
- Discourage tv, computer, and telephone time before bed.
- Try to allow physical activity/exercise earlier in the day—not right before bed.
- Have children avoid caffeine.
- Help your child maintain a healthy weight by being supportive (not reminding them of their weight or singling them out), planning family activities that involve exercise, eating meals together – slowly and without the tv on, and not using food as a reward or punishment.<sup>17</sup>

Remember, children should not be placed on restrictive diets unless under the supervision of a

doctor. Children need food for growth, energy, and development...they also need sleep!<sup>17</sup> For recommendations on the amount of sleep, see the National Sleep Foundation’s resource: *Children, Obesity, and Sleep* at <http://www.sleepfoundation.org/hottopics/index.php?secid=11&id=98>.



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## Helping Your Loved Ones

How family members can help

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“**F**amily members or bed partners are usually the first ones to notice that the person snores and stops breathing while sleeping.

There are many things family members can do to help a loved one who has sleep apnea, including:

- letting the person know if he or she snores loudly during sleep or has breathing stops and starts;
- encouraging the person to get medical help;
- helping the person follow the doctor’s treatment plan, including continuous positive airway pressure (CPAP);
- making sure the person puts on the CPAP mask before falling asleep;
- providing emotional support; and
- helping with insurance paperwork.<sup>2</sup>

Sleep apnea can be very serious. Treatment may improve a person’s overall health and happiness as well as the quality of sleep for both the person and the entire family.”<sup>2</sup>

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## Web Resources

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Connecting to supportive information

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The following resources may be helpful in guiding those who suspect sleep apnea, or who already know they have it, to sources of support for diagnosis, treatment options, help with insurance, and more.

### **Tired of the Sleepiness? (brochure)**

<http://www.sleepapnea.org/resources/brochure.html>

### **Being Evaluated for Sleep Apnea**

<http://www.sleepapnea.org/resources/pubs/evaluated.html>

### **Having Your Child Evaluated for Obstructive Sleep Apnea**

<http://www.sleepapnea.org/resources/pubs/child.html>

### **Treatment Options for Adults with Obstructive Sleep Apnea**

<http://www.sleepapnea.org/resources/pubs/treatment.html>

**Find a Local A.W.A.K.E. (Alert, Well, And Keeping Energetic) Support Group** (mutual-help support groups for persons affected by sleep apnea)

<http://www.sleepapnea.org/awake/index.html>

### **Can Anti-Snoring Claims be Cause for Alarm?**

<http://www.ftc.gov/bcp/conline/pubs/alerts/snorealrt.htm>

### **Resources for Employment Concerns**

<http://www.sleepapnea.org/resources/pubs/employment.html>

### **Ask the Lawyer: On Being Rated for Life and Health Insurance**

<http://www.sleepapnea.org/resources/pubs/publawyer.html>

### **Children, Obesity, and Sleep**

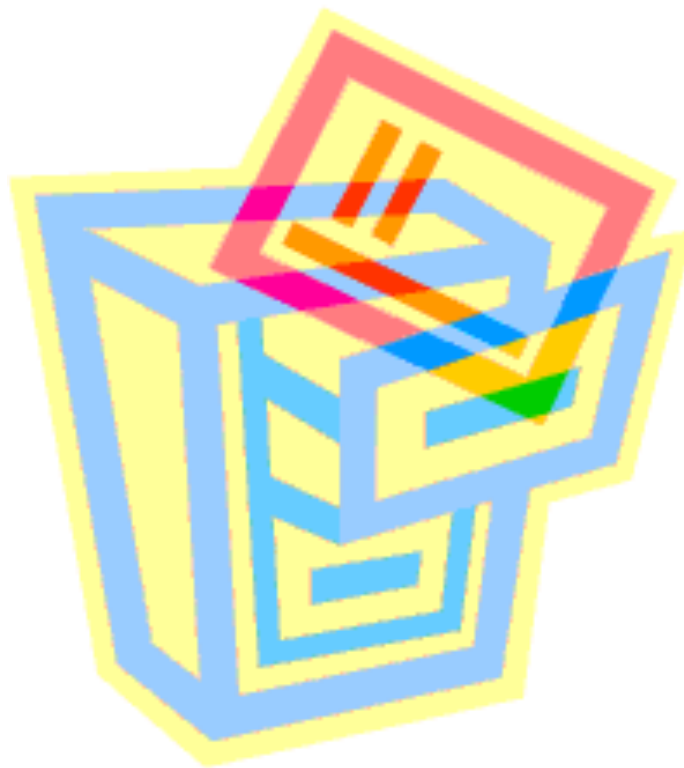
<http://www.sleepfoundation.org/hottopics/index.php?secid=11&id=98>

### **Choosing a CPAP**

<http://www.sleepapnea.org/resources/pubs/cpap.htm>

### **Sleep Apnea and Heart Disease**

<http://www.sleepfoundation.org/hottopics/index.php?secid=14&id=137>



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## Are You Sleeping Well?

Do you sleep well at night? Do you arise feeling rested and ready for a productive day? Or are you groggy when you wake, finding it hard to stay awake during the day? Does your spouse complain of your snoring or other odd breathing sounds during sleep? Are you losing sleep because your bed partner makes so many snoring and snorting noises in the night? If you answer yes to any of these questions, you or your loved one may be experiencing a serious condition known as sleep apnea and need to see a doctor immediately.

### What is sleep apnea?

Sleep apnea is clinically defined in two ways: for adults...a cessation of breath that lasts at least 10 seconds, and for children... a cessation of breath that lasts the equivalent of two-and-a-half missed breaths. People who have sleep apnea may go for 10–60 seconds or more without breathing (or with very shallow breathing) before arousing to breathe. This may happen over and over all night long. Their arousals may result in the sounds a spouse hears, such as a loud snore, snort, cough, or gasp.

### Sleep apnea is serious

Although sleep apnea is common, most people don't know they have it. Unfortunately, if left undiagnosed, the consequences can be serious. Consequences of undiagnosed and untreated sleep apnea can include:

#### *Performance & Psychological Consequences*

- Difficulty concentrating
- Not able to stay alert
- Decreased reaction time
- Learning and memory difficulties
- Irritability
- Depression
- Loss in productivity
- Higher risk for accidents
- Interpersonal problems

#### *Physiological/Physical Consequences*

- Heart attack
- Congestive heart failure
- Stroke
- Impotence/sexual dysfunction
- Weight gain
- Headaches
- Irregular heartbeat
- High blood pressure
- Heart disease
- Kidney disease
- Inefficiencies in metabolism
- Poor development of muscle mass
- Immune deficiencies



### How do I know if I have it?

Look for signs and symptoms. This is where family members, roommates, etc. can be helpful. Because a person is often unaware of their breathing patterns during sleep, it is important to discuss them. The individual may not associate daytime symptoms with their sleep if they don't know there is a problem.

### Symptoms

- excessive daytime sleepiness (this may not be noticeable in children)
- frequent episodes of obstructed breathing during sleep (usually assessed by someone sleeping in the same room—not the individual)

### Associated Signs

- loud snoring (often punctuated with periods of silence); this is a common sign, but it may not be present, especially in children

- nocturnal snorting, gasping, choking (may wake self up)
- morning headaches
- unrefreshing sleep
- dry mouth upon awakening
- chest retraction during sleep in young children (chest pulls in)
- high blood pressure
- excess weight
- irritability
- mood swings or change in personality
- depression
- difficulty concentrating
- excessive perspiring during sleep
- heartburn
- reduced libido
- insomnia
- frequent nocturnal urination (nocturia)
- restless sleep
- confusion upon awakening



### **Risk factors**

Sleep apnea occurs in all age groups, both sexes, among all body types, and ethnicities. Sleep apnea, however, is more common among certain groups, as follows:

- family history of sleep apnea
- male gender (although it may be underdiagnosed in women)
- ethnicity (African Americans, Pacific Islanders, and Mexicans)
- abnormalities in the structure of the upper airway
- over age 40
- excess weight
- a large neck
- a recessed chin
- smoking
- alcohol use

### **How is sleep apnea diagnosed and treated?**

Along with an assessment of your medical history and a general physical exam, a sleep test is commonly used to diagnose sleep apnea or other sleep-related conditions. The test is usually performed in a sleep lab or sleep center and involves monitoring bodily functions while you sleep. The test is painless.

If you have sleep apnea, it is treatable. Depending its severity, you may be able to try lifestyle changes first, such as avoiding alcohol, quitting smoking, and losing weight. For moderate to severe sleep apnea, a physical appliance or surgical procedure may be recommended by your doctor.

### **Special considerations for children and sleep apnea**

One to 3 percent of children ages 2–18 are estimated to have sleep apnea. Undiagnosed and untreated sleep apnea can severely undermine a child’s physical and psychological well-being. Children with sleep apnea do not typically complain of sleepiness during the day and may not display sleepy behaviors, such as yawning. In fact, many children, paradoxically, display increased activity. Some behavioral indicators include emotional instability, anxiety, low tolerance to frustration, deficits in cognition and attention, impulsivity, and aggression. Sleep deprivation in children is often overlooked and may be attributed to attention-deficit or behavior disorders. In fact, a recent study suggests that some children diagnosed with ADHD (Attention Hyperactive Deficit Disorder ) may actually have attention problems in school because of disturbed sleep patterns caused by obstructive sleep apnea. Like adults, children need to be seen immediately by a doctor if sleep apnea is suspected.

For more information on sleep apnea, see the May 2006 (Vol. 10, No. 4) issue of HealthHints at [http://fcs.tamu.edu/health/Health\\_Education\\_Rural\\_Outreach/index.php](http://fcs.tamu.edu/health/Health_Education_Rural_Outreach/index.php).