



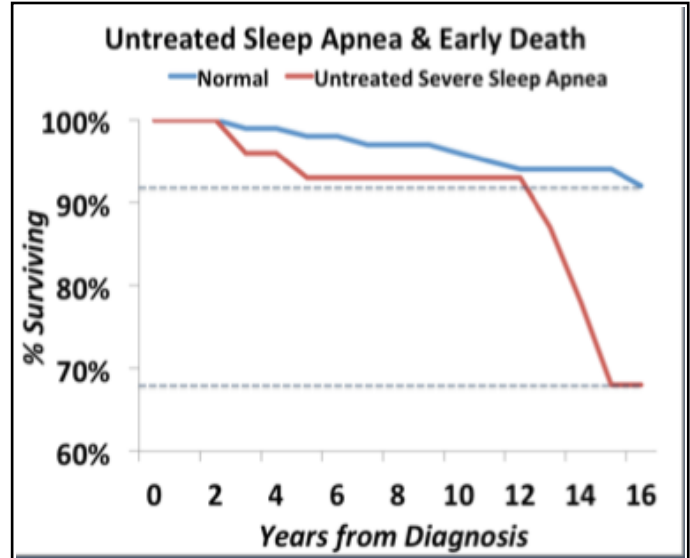
OBSTRUCTIVE SLEEP APNEA (OSA)

Signs of Obstructive Sleep Apnea (OSA)

- Loud snoring followed by a breathless pause
- A snort or gasp following the breathless pause
- Restless movements while asleep
- Frequent awakenings
- Morning headaches
- Problems with memory and concentration
- Extreme tiredness or sleepiness (frequent interruption of sleep)
- Irritability and a short temper
- High blood pressure
- Impotence

Workup

- Thyroid blood test to rule out an underactive thyroid problem
- Thorough nose and throat examination with a flexible endoscope by an ear nose & throat specialist
- Sleep study at a sleep center
- Drug induced sleep endoscopy (DISE)



Normal ↔ Snoring ↔ Upper Airway Resistance Syndrome (UARS) ↔ Mild OSA ↔ Moderate OSA ↔ Severe OSA

Risks of Untreated Obstructive Sleep Apnea

- High blood pressure
- Irregular heartbeat
- Heart disease
- Stroke
- Accidents from excessive daytime sleepiness
- Lost productivity
- Poor quality of life
- Shortened life span by 10-20 years

Self Treatment Options

- Weight loss
- Muscle toning and regular exercise
- Avoid smoking
- Avoid tranquilizers, sleeping pills, and sedating antihistamines
- Avoid alcoholic beverages within 4 hours of bedtime
- Avoid heavy meals within 5 hours of bedtime
- Raise the head of the bed
- Sleep on your side, rather than your back
- Sew a pocket on your pajama back to hold a tennis ball to prevent rolling over
- Try *Breathe Right* nasal strips

Medical and Surgical Treatment Options

- Treat nasal allergy and inflammation
- Treat nasal or sinus infection
- Sinus surgery
- Correction of deviated nasal septum (septoplasty)
- Turbinate reduction (radiofrequency or microdebrider)
- Nasal valve collapse surgery or nasal valve implant (*Latera*)
- Adenoidectomy
- Mandibular advancement device (MAD)
- Continuous positive airway pressure (CPAP) mask
- Tonsillectomy
- Laser assisted uvulopalatoplasty (LAUP)
- Soft palate radiofrequency ablation (RFA) (*Coblation*)
- Soft palate stiffening with *Restore Pillar Implant*
- Partial or complete uvulectomy
- Uvulopalatopharyngoplasty (UPPP) or expansion sphincter pharyngoplasty (ESP)
- Base of tongue radiofrequency ablation (RFA) (*Coblation*)
- Lingual tonsillectomy (endoscopic or robotic)
- Epliglottomy
- Midline glossectomy (robotic or *Coblation*)
- Hyoid-mandibular suspension (*Airlift* with *Encore*)
- Tongue suspension (*Airlift* with *Encore*)
- Genioglossal advancement with osteotomy
- Thyrohyopexy
- Hypoglossal nerve stimulator (*Inspire Upper Airway Stimulation (UAS) Therapy*)
- Upper and lower jaw advancement
- Tracheostomy

Sleep Hygiene

- Weight loss since excessive weight causes neck and throat tissues to be bulky and flaccid. (See below)
- Muscle toning and regular exercise. (See below)
- Avoid smoking.
- Avoid medications such as tranquilizers, sleeping pills, and antihistamines that cause sedation.
- Avoid alcoholic beverages within three hours of bedtime.
- Avoid heavy meals within 5 hours of going to bed.
- Raise the head of the bed to decrease nose swelling.
- Sleep on your side, rather than your back.
- Consider sewing a pocket on your pajama back to hold a tennis ball to prevent rolling over.
- Keep the room temperature at a comfortable level and avoid excessive warmth.
- Avoid excessive noise.
- Establish a regular arousal time in the morning and adhere to it daily, including weekends and vacations, to strengthen circadian cycling.
- Sleep as much as needed to feel alert during the day, but not more since excessive time in bed seems to fragment sleep.
- Allow the non-snorer to get to sleep first.

DIET AND EXERCISE TIPS

Excessive body weight contributes to snoring and obstructive sleep apnea, in addition to being a major influence on general health and well-being. Obstructive sleep apnea occurs in about 50-60% of those who are obese. A recent report from the National Center for Health Statistics concludes that seven of 10 adults don't regularly exercise, and nearly four in 10 aren't physically active. Lack of exercise can increase the risk of diabetes, heart disease, and stroke. About 300,000 people in the U.S. die each year from diseases related to inactivity. Proper diet and exercise are the mainstays for a healthy lifestyle, although many Americans turn to costly fad diets and exercise programs that fail to provide weight loss and a healthy lifestyle. The basic tenets to gradual weight loss and good health include developing healthy eating habits and increasing daily physical activity.

Self-help guidelines for healthy activity:

- Consult a physician – men over age 40; women over 50; people with (or at risk for) chronic health problems such as heart disease, diabetes, or obesity.
- Start out slowly and build up activity gradually over a period of months. This will help avoid soreness and injury.
- Try to accumulate 30 minutes or more of moderate-intensity cardiovascular activity each day. You can do all 30 minutes together or through short bouts of intermittent activity (e.g. 10 minutes at a time).
- Add strength-developing exercises at least twice per week.
- Incorporate physical activity into your day (walk to the office or store, take the stairs instead of the elevator, walk or jog at lunch time, etc.).
- Make leisure time active – garden, walk, ride a bike with family and friends, participate in an exercise class, join in a sports activity.
- Select activities you enjoy, find satisfying, and give you a feeling of accomplishment. Success leads to increased motivation to be physically active.
- Be sure your activities are compatible with your age and physical condition.
- Make it convenient to be active. Choose activities that are readily accessible (right outside your door) like gardening, walking, or jogging.
- Try “active commuting.” Cycle, walk or in-line skate to work or to the store.
- Make your activity enjoyable – listen to music, include family and friends, etc.

For those who are already regularly moderately active, increase the duration and intensity for additional benefits.

Weight loss tips:

- Take in fewer calories than you expend. Few people understand this basic, simple concept.
- Eat smaller meals 3-5 times per day.
- Eat nutrient dense foods such as whole grains, lean proteins, fruits, and vegetables.
- Eat slowly, and wait 10-15 minutes before taking second helpings.
- Don't eliminate everything you like from your diet. Eat those things in small amounts (pizza, candy, cookies, etc.)
- Prepare healthy snacks that are easily available (cut carrots, apples, etc.)
- Avoid buffets.
- Drink plenty of water, especially immediately prior to meals.

The healthy weight approach to dieting:

- Enjoy a variety of foods that will provide essential nutrients.
- Three-quarters of your lunch and dinner should be vegetables, fruits, cereals, breads, and other grain products. Snack on fruits and vegetables. Eat lots of dark green and orange vegetables. Choose whole-grain and enriched products more often.
- Choose lower fat dairy products, leaner meats and alternatives, and foods prepared with little or no fat. Shop for low fat (2% or less) or fat-free products such as milk, yogurt, and cottage cheese. Eat smaller portions of leaner meats, poultry, and fish; remove visible fat from meat and the skin from poultry. Limit the use of extra fat like butter, margarine, and oil. Choose more peas, beans, and lentils
- Limit salt, caffeine, and alcohol. Minimize the consumption of salt. Cut down on added sugar such as jams, etc. Limit beverages with a high caffeine content (tea, sodas, chocolate drinks) and caffeinated coffee to two cups per day. Minimize alcohol to 1-2 drinks per day.
- Limit consumption of snack foods such as cookies, donuts, pies, cakes, potato chips, etc. They are high in salt, sugar, fat, and calories, and low in nutritional value.
- Eat in moderation. If you are not hungry, don't eat.

Other Unrelated Sleep Problems**Restless Legs Syndrome**

People with this disorder have "crawling" sensations in their sleep. The sensation goes away as soon as they get up to "walk it off". Good sleep hygiene, exercise, and avoiding caffeine and other stimulants may help.

Periodic Limb Movement Disorder

Some people's legs or arms jerk repeatedly during sleep. In the morning, they awake feeling tired. This disorder can be diagnosed in the sleep center. Medications (Sinemet, etc.) may help in some cases.

Insomnia

Trouble falling or staying asleep which disrupts your daily life. There are many causes that require specific treatment, but good sleep hygiene often helps.

Narcolepsy

Falling asleep unexpectedly many times a day. This can be embarrassing and dangerous. Good sleep hygiene, medications, and scheduled naps are beneficial.