

Sleep Apnea and Heart Failure

Definition of Obstructive Sleep Apnea (OSA):

- Obstructive Sleep Apnea (OSA) is a potentially life-altering and life-threatening breathing disorder that occurs during sleep.
- The upper airway repeatedly collapses, causing cessation of breathing (apnea) or inadequate breathing (hypopnea) and sleep fragmentation.
- Sleep fragmentation results in chronic daytime sleepiness.

Prevalence:

- 50-60% of patients with impaired cardiac function suffer from sleep related breathing disorders.¹
- Nearly 30% of patients with severe heart failure suffer from daytime sleepiness.¹
- 4% of men and 2% of women aged 30-60 meet minimal diagnostic criteria for OSA with excessive daytime sleepiness (an estimated 18 million people). An even greater number of people have subclinical apnea/hypopnea during sleep.
- The majority of OSA sufferers remain undiagnosed and untreated.

Consequences if OSA is Left Untreated:

- Hypertension
- Cardiac Arrhythmias
- Myocardial Ischemia
- Myocardial Infarction
- Stroke
- Motor vehicle and work-related accidents due to sleepiness
- Decreased quality of life
- OSA patients, prior to diagnosis and treatment, consume 2 1/2 times more health care resources than patients without OSA.

Identification of OSA:

Signs and Symptoms

- Snoring, interrupted by pauses in breathing (apnea)
- Excessive daytime sleepiness
- Gasping or choking during sleep
- Restless sleep
- Intellectual deterioration
- Poor judgment/concentration
- Memory loss
- Irritability
- Hypertension
- Nocturnal angina
- Depression
- Obesity
- Large neck/girth (>17" in men, >16" in women)
- Oropharyngeal crowding
- Morning headaches
- Sexual dysfunction
- Nocturia



1. Normal Breathing
 - Airway is open
 - Air flows freely to lungs



2. Obstructive Sleep Apnea
 - Airway collapses
 - Blocked air flow



3. CPAP Therapy
 - Airway splinted open
 - Air flows freely to lungs

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Identification:

The key signs and symptoms that indicate a high probability of OSA are:
excessive daytime sleepiness

plus

disruptive snoring or pauses in breathing (apnea)
or gasping or choking during sleep.

Diagnosis

- If a patient's signs and symptoms indicate sleep apnea, evaluation by a physician specializing in sleep disorders is recommended.
- A sleep study provides information about how a patient breathes and sleeps. The data that is collected will enable the physician to determine the type and severity of sleep apnea and determine treatment options. Also, information about the physiologic consequences of the abnormal breathing events is obtained.

Intervention:

Primary

- Positive Airway Pressure (PAP) therapy is the treatment of choice for Obstructive Sleep Apnea. This therapy includes Continuous Positive Airway Pressure (CPAP), automatic CPAP, and bi-level positive airway pressure.

Secondary

- Less common treatments include surgery, body position modification, and oral appliances, which may be effective in certain individuals.

Overall

- Any intervention should include lifestyle changes such as weight loss (if needed), good sleep hygiene, and avoidance of alcohol, sedatives, and hypnotics.

Impact of PAP Therapy:

PAP treats Obstructive Sleep Apnea by providing a gentle flow of positive pressure air via a mask. The positive pressure air splints the airway open during sleep to prevent airway collapse. This results in:

- Elimination of snoring and abnormal breathing events
- Absence of daytime sleepiness or fatigue
- Improved quality of life
- Reduction or elimination of comorbidities, such as hypertension
- Decreased consumption of health care resources

Obstructive Sleep Apnea is a serious, potentially life-altering and life-threatening condition that is:

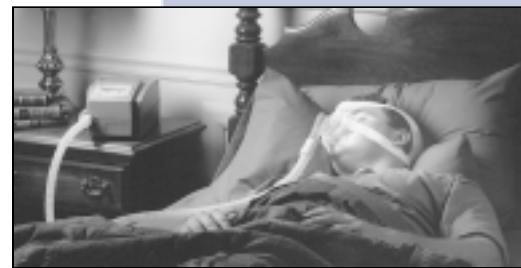
- Easily identified
- Effectively treated

¹Sleep-related breathing disorders in patients with impaired left ventricular function; M. Bangert, et al. Abstracts of the 1997 European Respiratory Society Annual Congress, p. 1815.

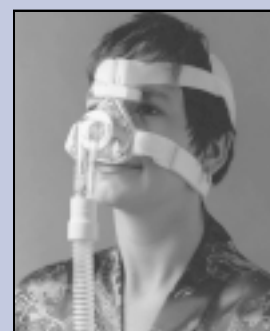


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Smart CPAP System
automatically adjusts the
pressure needed for safe,
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Respironics is a medical products manufacturer that uses innovative thinking to improve clinical outcomes, manage costs, and provide valuable support services. We pioneered the treatment of Obstructive Sleep Apnea by introducing the first commercially available CPAP system in 1985. We continue to be the market leader in technology for the treatment of OSA as well as in noninvasive pressure support and portable volume ventilators. Our broad range of clinically sound products for the hospital and home and throughout the continuum of care can help you manage costs related to OSA, respiratory insufficiency, and respiratory failure.