An Accredited Sleep Healthcare Provider
ACCREDITED BY THE JOINT COMMISSION
Ambulatory Care Accreditation
Home Care Accreditation

Sleep apnea facts and figures

What is sleep-disordered breathing (SDB)?
SDB describes a number of nocturnal breathing disorders
- Obstructive sleep apnea (OSA)
- Central sleep apnea (CSA)
- Nocturnal hypoventilation
- Cheyne–Stokes respiration (CSR)

What is obstructive sleep apnea (OSA)?
- The most common form of SDB
- A partial or complete collapse of the upper airway caused by relaxation of the muscles controlling the soft palate and tongue
- Person experiences apneas, hypopneas and flow limitation
  - Apnea: a cessation of airflow for ≥10 seconds
  - Hypopnea: a decrease in airflow lasting ≥10 seconds with a 30% reduction in airflow and at least a 3% oxygen desaturation from baseline
  - Flow limitation: narrowing of the upper airway and an indication of an impending upper airway closure

Classification of sleep apnea
Apnea–hypopnea index (AHI)
- Number of apneas and/or hypopneas per hour of sleep (or study time)
- Reflects the severity of sleep apnea
  - AHI: < 5 Normal range
  - AHI: 5 to < 15 Mild sleep apnea
  - AHI: 15 to < 30 Moderate sleep apnea
  - AHI: ≥ 30 Severe sleep apnea

Prevalence of sleep apnea
- Approximately 42 million American adults have SDB\(^1\)
- An estimated 26% of adults have at least mild SDB\(^2\)
- 9% of middle-aged women and 25% of middle-aged men suffer from OSA\(^3\)
- Prevalence in the US is similar to asthma (20 million) and diabetes (23.6 million)\(^4\)
- 75% of severe SDB cases remain undiagnosed\(^5\)

![Prevalence of Sleep Apnea in Comorbidities](chart.png)

Signs and symptoms of sleep apnea
- Lack of energy
- Morning headaches
- Frequent nocturnal urination
- Depression
- Excessive daytime sleepiness (EDS)
- Nighttime gasping, choking or coughing
- Gastroesophageal reflux (GER reflux)
- Irregular breathing during sleep (e.g., snoring)

Increased risk factors for sleep apnea
- Obesity (BMI >30)
- Diagnosis of hypertension
- Large neck circumference (>17" men; >16" women)
- Male gender
- Excessive use of alcohol or sedatives
- Upper airway or facial abnormalities
- Smoking
- Family history of OSA
- Endocrine and metabolic disorders

www.sleep-rite.com

Seven convenient locations throughout southeast Louisiana

Kenner • Metairie • New Orleans • Gonzales • La Place • Westbank • Mandeville
Sleep apnea facts and figures

**Cardiovascular links**
- 5.1 million people in the US have heart failure\(^4\)
- Approximately 76% of congestive heart failure patients have SDB\(^5\)
- Heart failure is the most expensive disorder to treat\(^6\)
- OSA noted in 49% of atrial fibrillation patients\(^7\) and 30% of cardiovascular patients\(^8\)
- OSA presents in 70% of heart attack patients with AHI $\geq 5$ and 52% of heart attack patients with AHI $\geq 10$\(^9\)

**Hypertension links**
- Studies have shown that sleep apnea is an independent risk factor for hypertension\(^8\)
- 30–83% of patients with hypertension have sleep apnea\(^10,11\)
- 43% of patients with mild OSA and 69% of patients with severe OSA have hypertension\(^12\)
- AHA guidelines on drug-resistant hypertension have shown that treatment of sleep apnea with CPAP is likely to improve blood pressure control

**Type 2 diabetes links**
- 48% of type 2 diabetes sufferers have sleep apnea\(^13\)
- OSA may have a causal role in the development of type 2 diabetes\(^14\)
- OSA is associated with insulin resistance (independent of obesity)\(^15\)
- 30% of patients presented to a sleep clinic have impaired glucose intolerance\(^16\)
- Mild forms of SDB may be important in predicting risk of pre-diabetes\(^17\)
- 86% of obese type 2 diabetic patients suffer from sleep apnea\(^18\)

**Stroke risk**
- 65% of stroke patients have SDB\(^19\)
- Moderate to severe sleep apnea triples stroke risk in men\(^20\)

**Mortality links**
- SDB is associated with a threefold increase in mortality risk\(^21\)
- There is an independent association of moderate to severe OSA with increased mortality risk\(^22\)
- Severe sleep apnea raises death risk by 46%\(^23\)

**Health care costs** (Economic consequences of untreated SDB)
- Patients with untreated OSA had 82% higher in-patient hospital costs than treated patients\(^24\)
- Patients with OSA have higher utilization rates and incur greater costs than non-OSA patients for up to 10 years prior to diagnosis\(^25\)
- OSA patients on PAP therapy have 31% lower total medical costs than patients not on PAP therapy\(^26\)

**Traffic accidents**
- In the year 2000, 810,000 US drivers were involved in a motor vehicle accident related to OSA = 1,400 involved fatalities\(^27\)
- Treating all US drivers suffering from sleep apnea would save $11.1 billion in collision costs and save 980 lives annually\(^28\)

**Treatment of OSA with CPAP**
- CPAP treatment reduces the need for acute hospital admission due to cardiovascular disease in patients with sleep apnea\(^29\)
- CPAP reduces blood glucose levels\(^30\)
- Two nights of CPAP improves insulin sensitivity, sustained at the three-month interval\(^31\)
- For every dollar spent on CPAP, $3.49 would be saved in reduced collision costs\(^32\)

---

1 Young et al. New Engl J Med 1993  
2 Peppard et al. J Am Med Assoc 2013  
4 US Department of Health and Human Services, Centers for Disease Control and Prevention 2008  
5 Young et al. Sleep 2000  
6 Logan et al. J Hypertens 2001  
7 O’Keefe & Patterson. Obes Surg 2004  
8 Oldenburg et al. Eur J Heart Fail 2007  
9 Garrigue et al. Circulation 2007  
10 Gami et al. Circulation 2004  
11 Enborn et al. Endocr Pract 2007  
12 Spjøtrom et al. Thorax 2002  
13 Scheler et al. Cardiology 1999  
14 Gu AS et al. American Heart Association 2013  
15 Medicare - $20.4 billion p.a.  
16 Kumaiishi et al. J Am Coll Cardiol 2008  
17 Reichmuth et al. J Am Respir Crit Care Med 2005  
18 Punjabi et al. J Am Respir Crit Care Med 2002  
20 Stamatakis et al. Sleep 2008  
21 Foster et al. Diabetes Care 2009  
22 Dyken et al. Stroke 1996  
23 Redline et al. J Am Respir Crit Care Med 2010  
25 Potts et al. Popul Health Manag 2012  
26 Albarrak et al. Sleep 2005  
27 Sassani et al. Sleep 2004  
28 Ezekiel et al. Am J Respir Crit Care Med 1997  
29 Babu et al. Arch Intern Med 2005  
30 Harnisch et al. Am J Respir Crit Care Med 2004