



If breathing was like
drinking from a glass...

What is Obstructive Sleep Apnea (OSA)?

Apnea: complete cessation airflow for at least 10 seconds

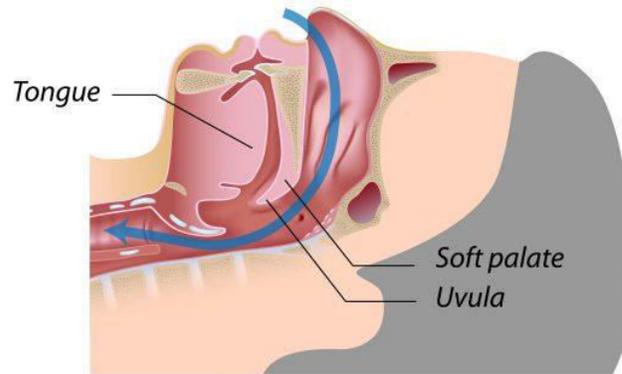
SYMPTOMS:

- Excessive daytime sleepiness/Fatigue
- Chronic snoring
- Morning headaches
- Depression
- Gasping/choking during sleep
- Obesity
- GERD
- Sleep related bruxism (grinding teeth)

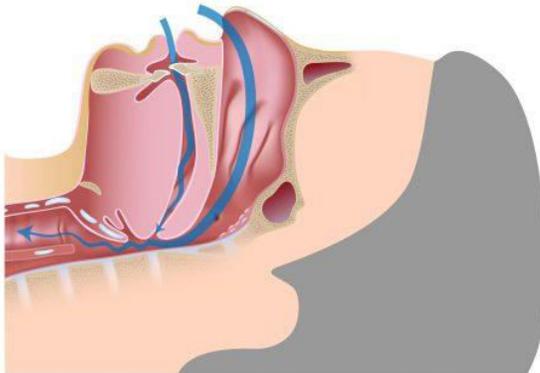
Hypopnea: abnormally **slow & shallow breathing**, decreasing airflow by more than 30%, over 10 seconds

Snoring: air moves across soft tissue that falls against itself at back of the throat, causing a sound

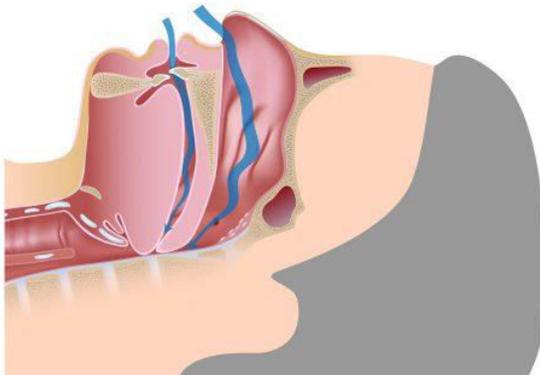
Normal breathing



Snoring - Partial obstruction of the airway



OSA - Complete obstruction of the airway



Do I have Sleep Apnea?

Sleep Study

- Apnea-Hypopnea Index (AHI) – the average number of apnea/hypopnea events per hour of sleep

Apnea Severity

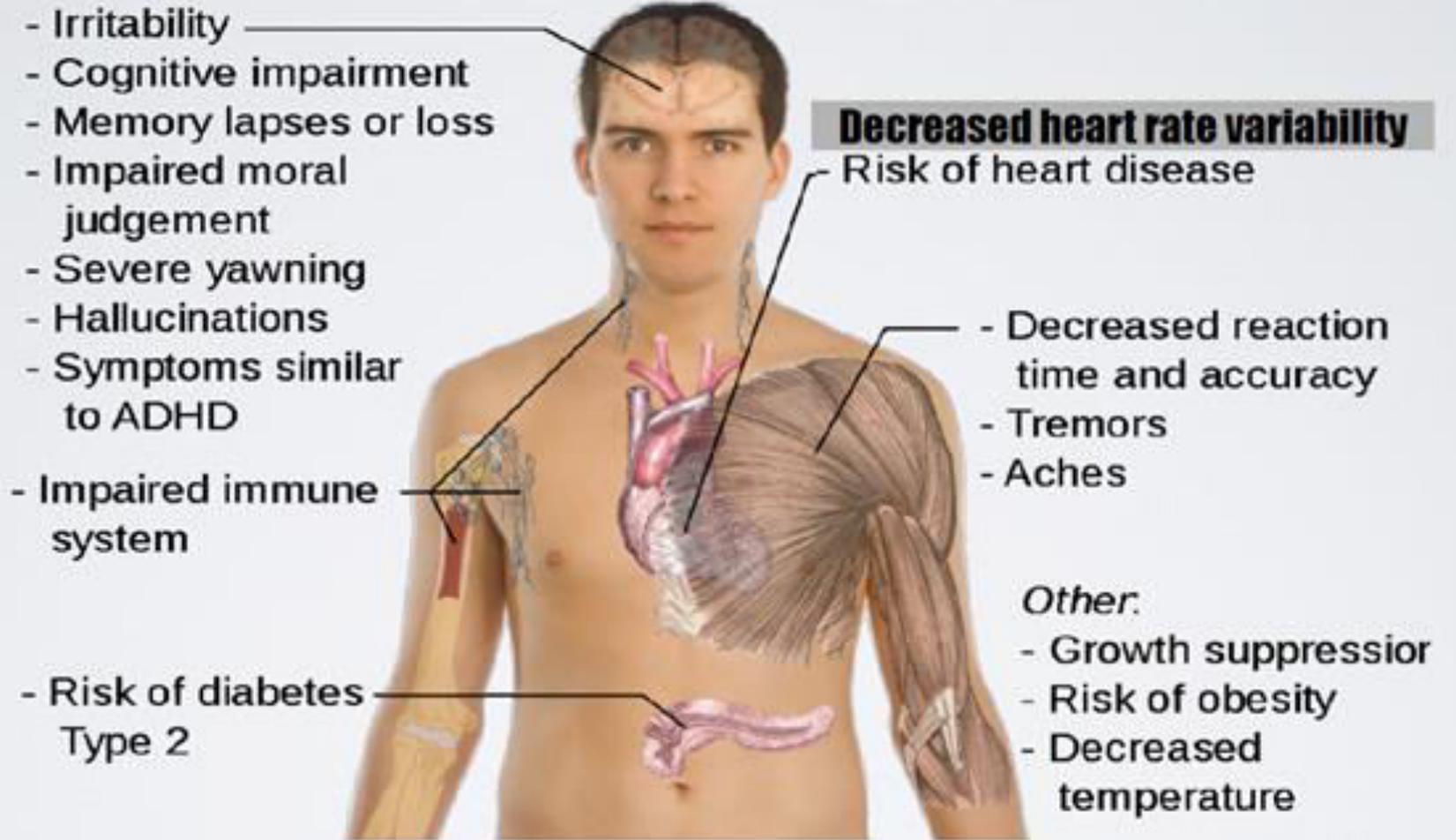
- Mild: 5-15
- Moderate: 16-29
- Severe: 30+

Why is it important?

OSA INDEPENDENTLY ASSOCIATED WITH :

- type 2 diabetes
- hypertension
- coronary heart disease
- stroke
- work-related accidents
- overall health morbidity
- cognitive, mood deficits impairing work efficiency and productivity

Effects of Sleep Deprivation





Effects of Obstructive Sleep Apnea



86% Type II Diabetes



80% Loud Snoring



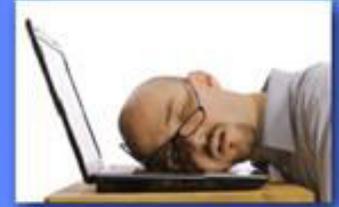
Untreated costs
4.3 Billion/year

76% Congestive Heart Failure

38% Heart Disease
30% Sudden Death



37% Hypertension
30% Coronary Artery Disease



87% Daytime Sleepiness



77% Obesity

58% Cardiac Arrhythmias



92% Stroke



60% GERD



58% Mood Disturbance



80% Sexual Dysfunction

Copyright



25% of Americans

Non-surgical Management of OSA

- **Continuous Positive Airway Pressure (CPAP)**: prevents obstruction by delivering room air under pressure via a mask
- **Oral Appliance Therapy**: relieve upper airway obstruction by advancing the lower jaw forward, moving the tongue and structures of the throat, creating airway space



Effective Treatment*	Oral Appliance	CPAP
Total Population (n=103)	76.5% (39/51)	82.7% (43/52)
Non-severe OSA (n=50)	84.0% (21/25)	80.0% (20/25)
Severe OSA (n=53)	69.2% (18/26)	85.2% (23/27)

*AHI <5, or ↓AHI of at least 50% from baseline to <20 in a patient who had no symptoms while using therapy.

Hoekema, A Oral Appliance Therapy In Obstructive Sleep Apnea-Hypopnea Syndrome. A clinical study on therapeutic outcomes. 2008