

SLEEP DISORDERS AND HEART DISEASE

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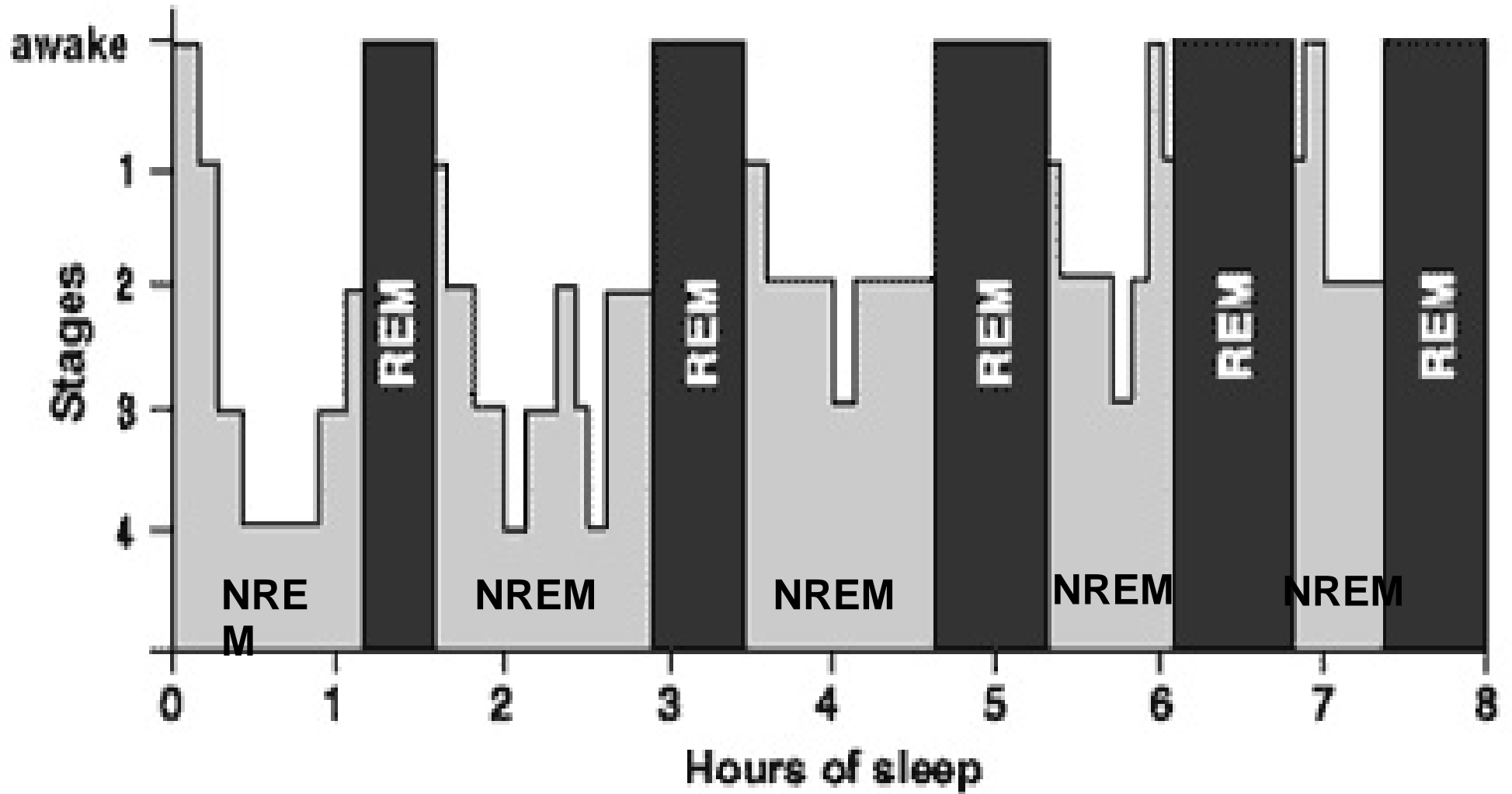


**“If I can put everyone to sleep within the first 3 minutes,
the rest of my presentation should go pretty well.”**

Stages of Sleep

- NREM non rapid eye movement sleep
 - Deep sleep
 - First 60-90 minutes of sleep cycle
 - Muscles relax heart rate slows down
 - REM rapid eye movement sleep
 - Rest of sleep cycle
 - Light sleep
 - Dreams occur in this phase
 - Body is less relaxed

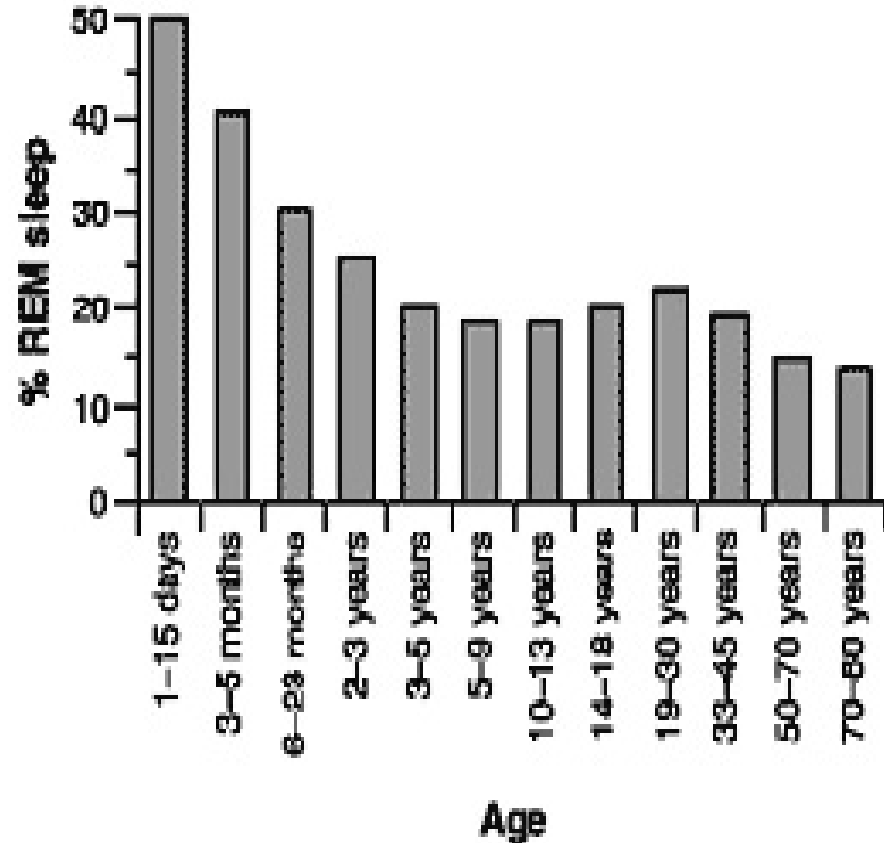
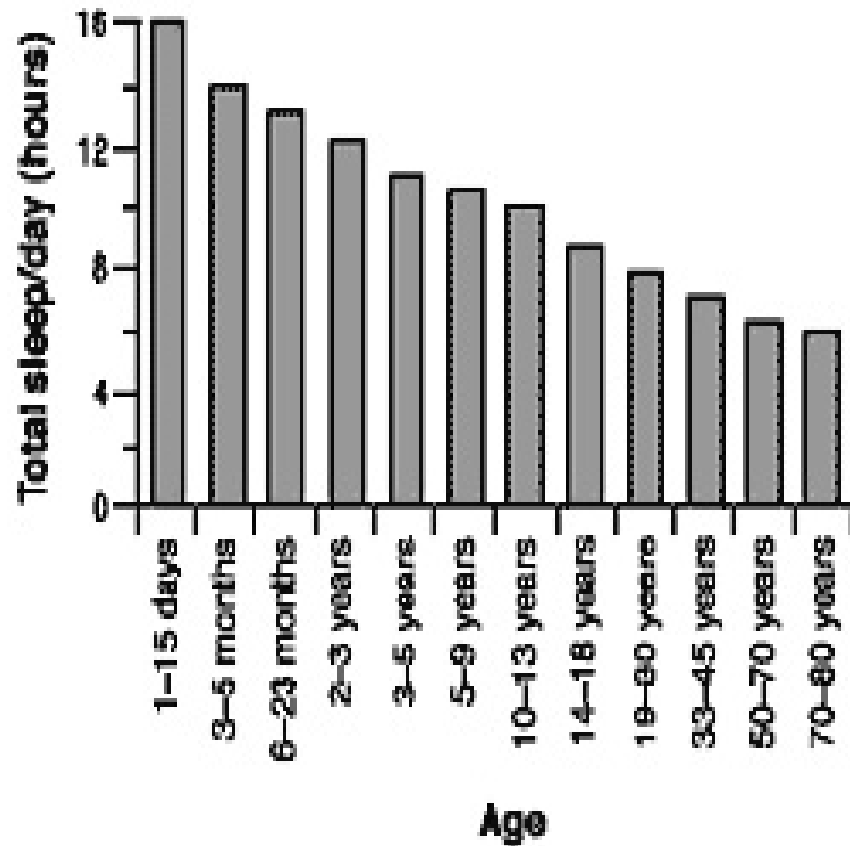
Cycles of Sleep



Sleep and Aging

- Less total night-time sleep
- Multiple night-time arousals and awakening
- Increased daytime sleepiness
- Fragmented sleep-wake cycle
- Changes in circadian rhythm
- Early morning awakening
- Night owl pattern

Aging and Sleep



Data from Roffwarg, H.P., J.N. Muzic, and W.C. Dement. 1966. Ontogenetic development of the human sleep-dream cycle. *Science*, 152: 604-619.

Factors That Disrupt Sleep

Primary sleep disorders such as

- Obstructive sleep apnea
- Periodic limb movement disorder
- Restless leg syndrome

Other causes such as

- Pain from any source
- Neurological conditions such as Parkinson's disease, Alzheimer's
- Cardiovascular conditions: CHF, A.fib

Factors That Disrupt Sleep

- Depression and anxiety
- Medications and other substances:
diuretics, steroids, antidepressants,
antihistamines, caffeine, alcohol, nicotine
- Poor sleep habits
- Shift work syndrome

Effect of Technology on Sleep

- Exposure to blue light from cell phones, TV, computers suppresses melatonin.
- Keeps brain alert for some time
- May cause anxiety, excitement delaying the process of onset of sleep
- Proven to disrupt sleep wake cycles leading to excessive day time sleepiness

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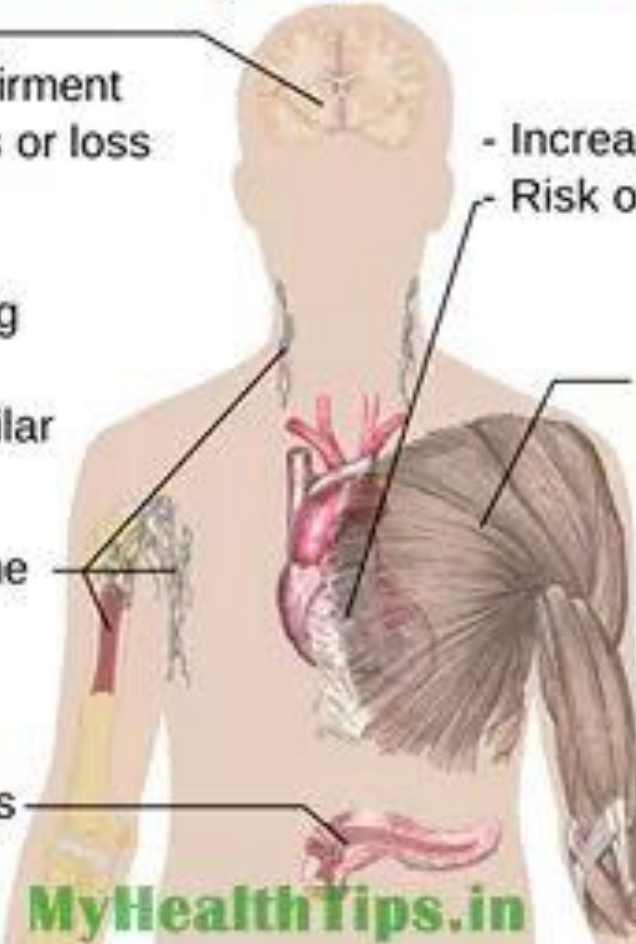
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“Insomnia is very common. Try not to lose any sleep over it.”

Implications/Complications

Effect of not having Enough sleep

- 
- The diagram shows a human torso with internal organs and muscles. Lines connect various parts of the body to lists of health effects:
- Irritability
 - Cognitive impairment
 - Memory lapses or loss
 - Impaired moral judgement
 - Severe yawning
 - Hallucinations
 - Symptoms similar to ADHD
 - Impaired immune system
 - Risk of diabetes Type 2
 - Increased heart rate variability
 - Risk of heart disease
 - Decreased reaction time and accuracy
 - Tremors
 - Aches
- Other:*
- Growth suppression
 - Risk of obesity
 - Decreased temperature
- MyHealthTips.in**

TREATMENT

- Treat underlying conditions:
- Sleep Apnea : confirm with sleep study, treatment includes use of CPAP machine
- Restless leg syndrome: diagnosed based on history, responds to medications
- Periodic limb movements: based on sleep test, involves “kicking” in bed. Responds to medications

Treatment

Prescription medications for insomnia

- Should not be used for more than 2 weeks at a time
- Hangover effect
- Most are habit forming, cause dependence
- Long term use can affect memory, concentration
- Potential for withdrawal after stopping the medication



“Can you give me a non-drowsy medication for my insomnia?”

NON-PRESCRIPTION SLEEP AIDS

- OTC Melatonin
- Benadryl, Zzzqyl
- Unisom
- Valerian root
- Homeopathic medication

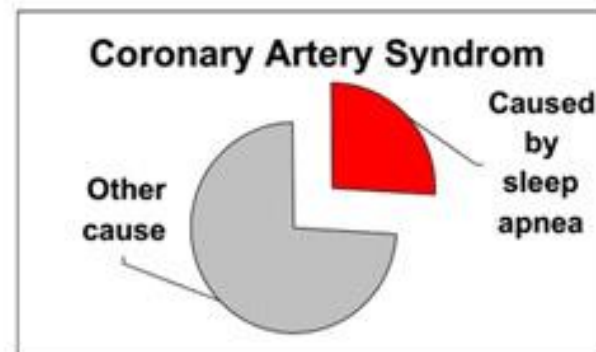
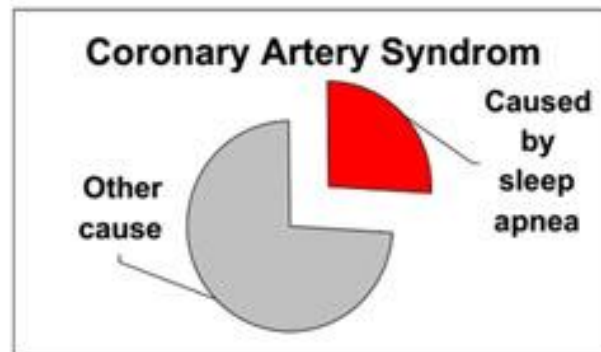
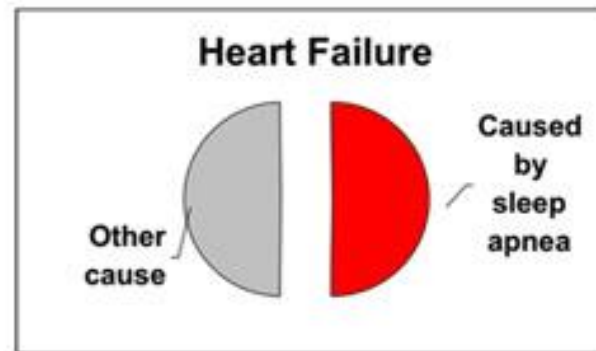
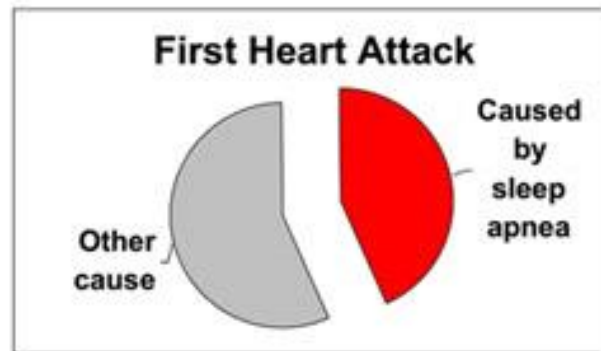
Please check with your doctor before taking any of these medications and ensure there is no interaction with other medications.

TREATMENT

Non-medication treatments include

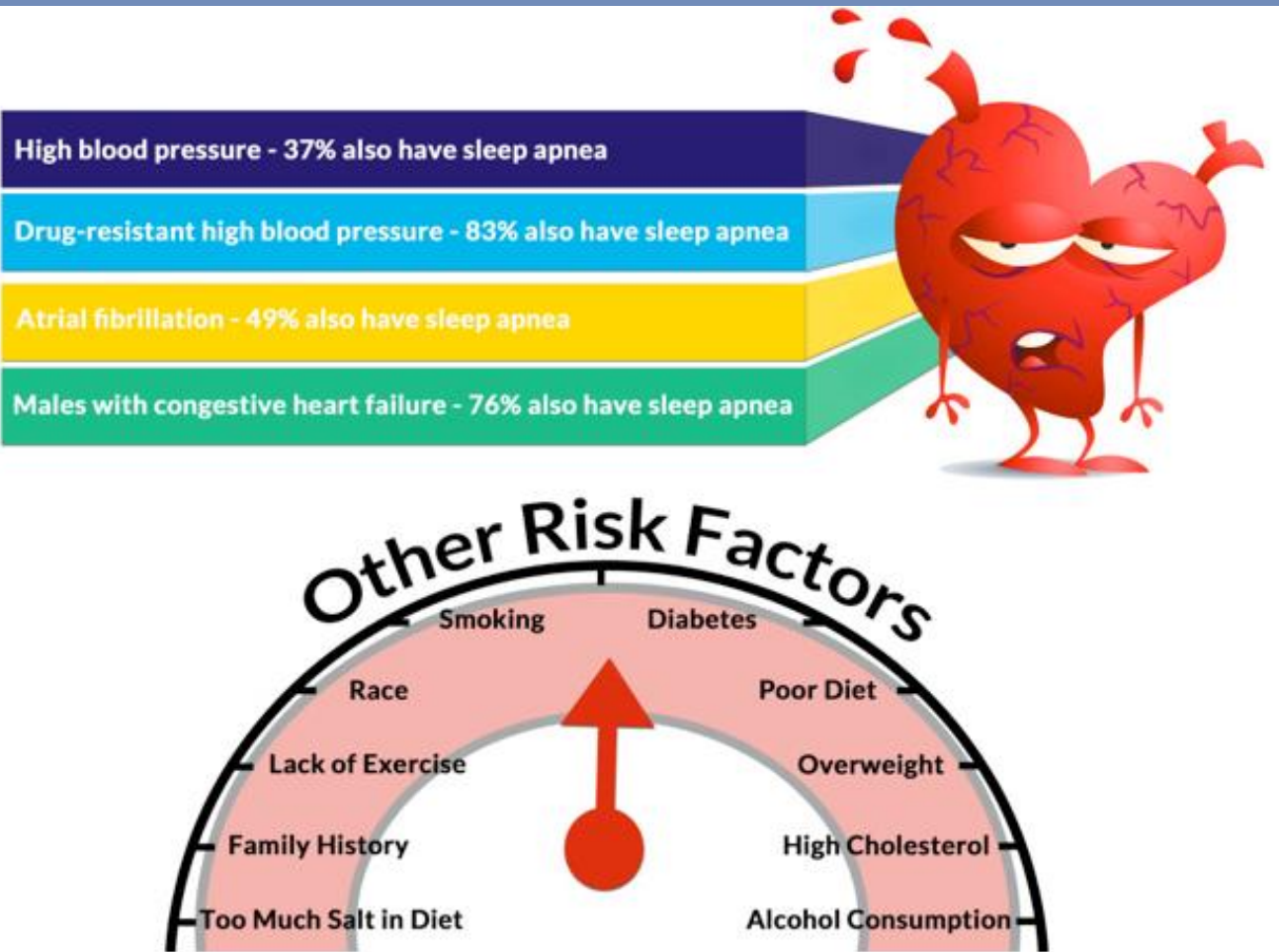
- behavioral modification
- relaxation techniques
- sleep restriction
- light therapy
- cognitive-behavioral therapies including tai chi, yoga, meditation, acupuncture, and acupressure

Effects on the Cardiovascular System

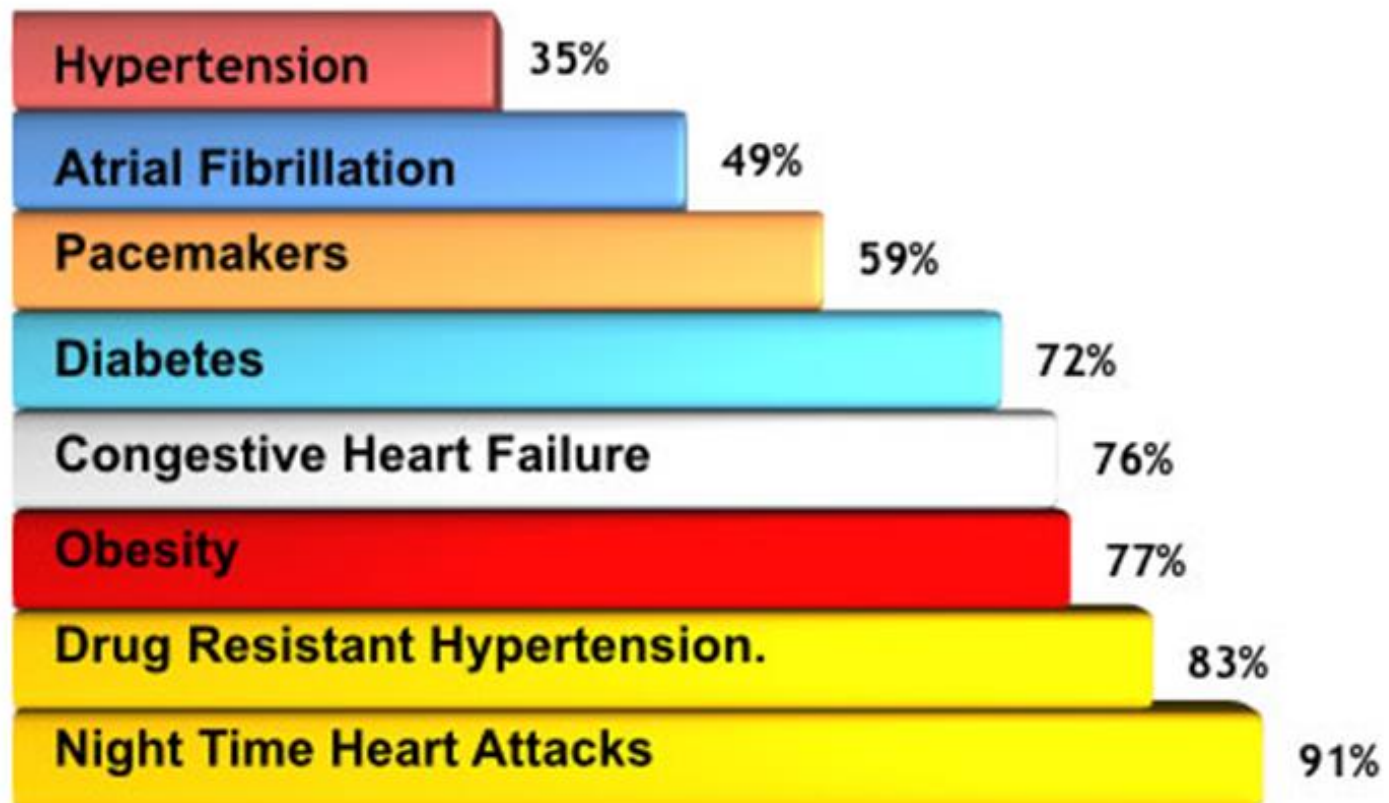


= Caused by sleep apnea
= Caused by other factors

Incidence or Coincidence



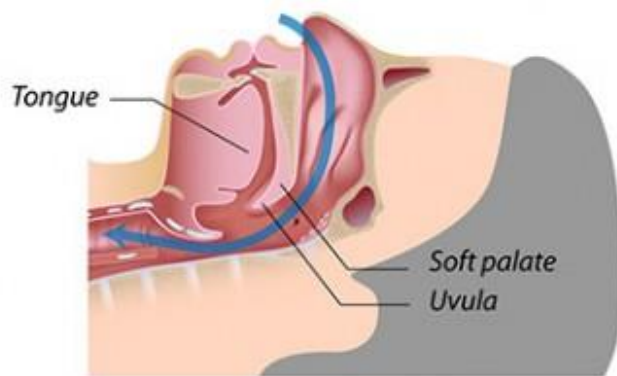
Diseases Associated with OSA



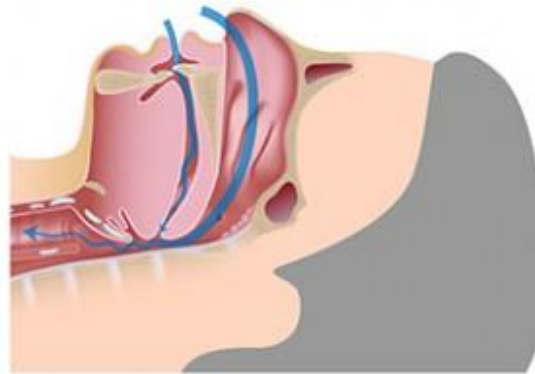
A woman with dark hair is lying in bed, looking distressed and covering her ears with both hands. She is wearing a white t-shirt. Next to her, a man is sleeping peacefully with his eyes closed. The background shows a white pillow and a window with blinds. A large, semi-transparent white circle is overlaid on the center of the image, containing the text "SLEEP APNEA & HEART DISEASE" in bold red letters.

**SLEEP APNEA
&
HEART DISEASE**

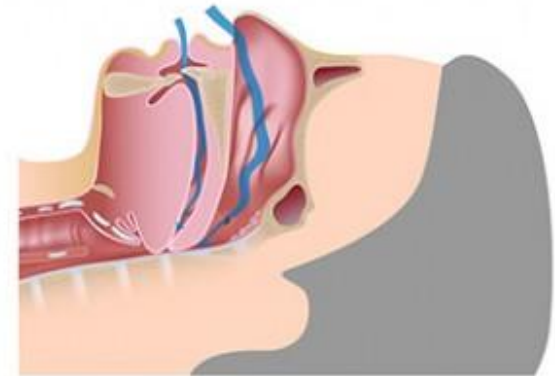
OSA



Normal Breathing



Snoring - Partial Obstruction
of the Airway



OSA - Complete
Obstruction of the Airway

Diagnosis





Results

Apnea Hypopnea Index (AHI)	
Severity	AHI per Hour
None/Minimal	< 5
Mild	5 -15
Moderate	16-30
Severe	> 30

Treatment

Treatment For Sleep Apnea

➔ Always keep nasal passages clear to avoid any obstruction while breathing.



➔ Never sleep on your back.



➔ Use a cervical pillow to elevate your head by few inches.

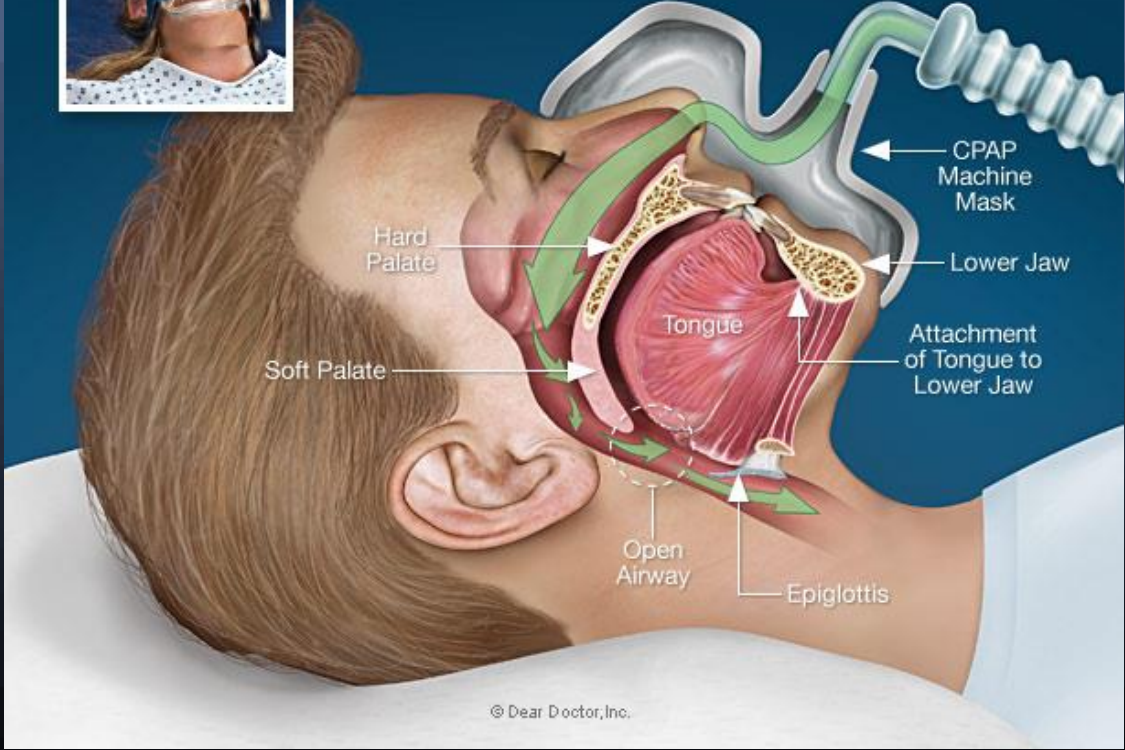


! There are lots of new dental sleep appliances for sleep apnea available such as CPAP, BPAP and ASV.



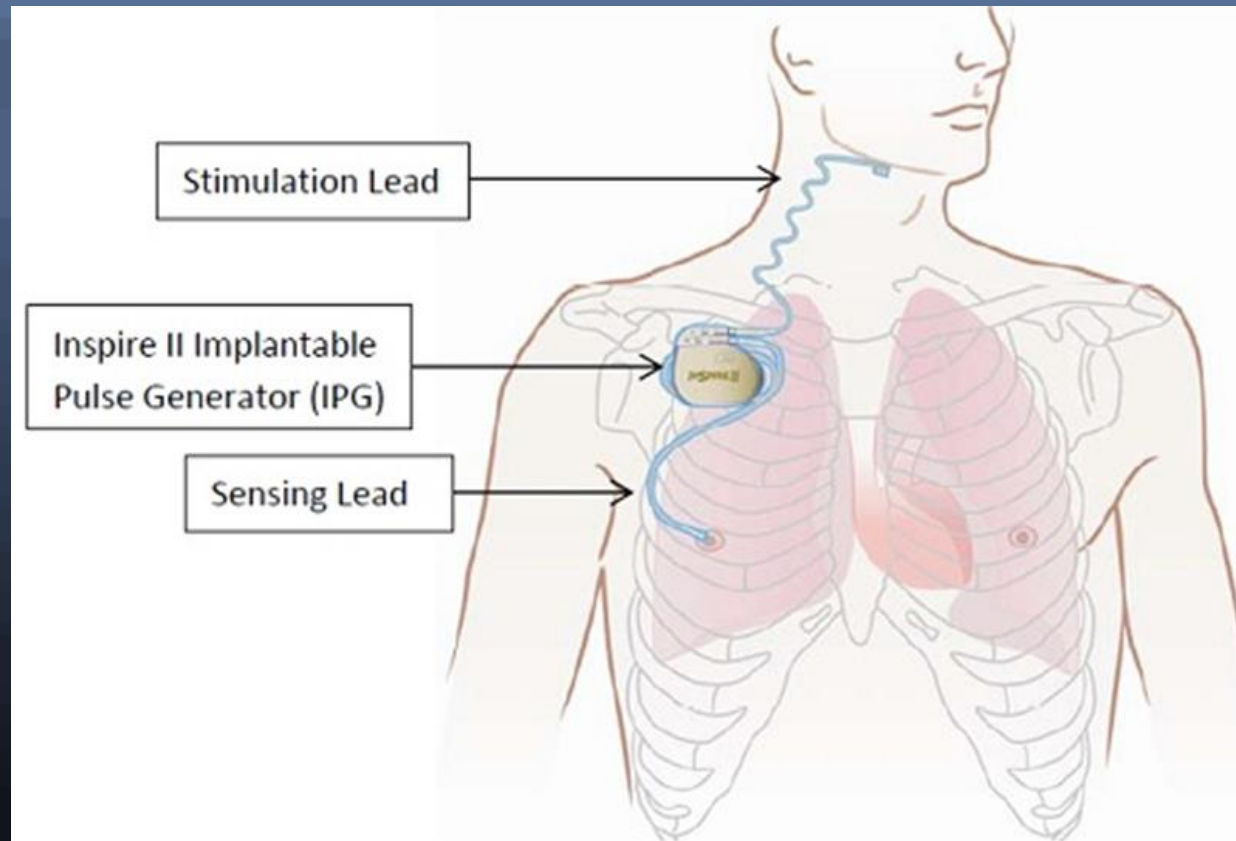
CPAP Therapy

A potential life saving and changing option for the treatment of sleep apnea.

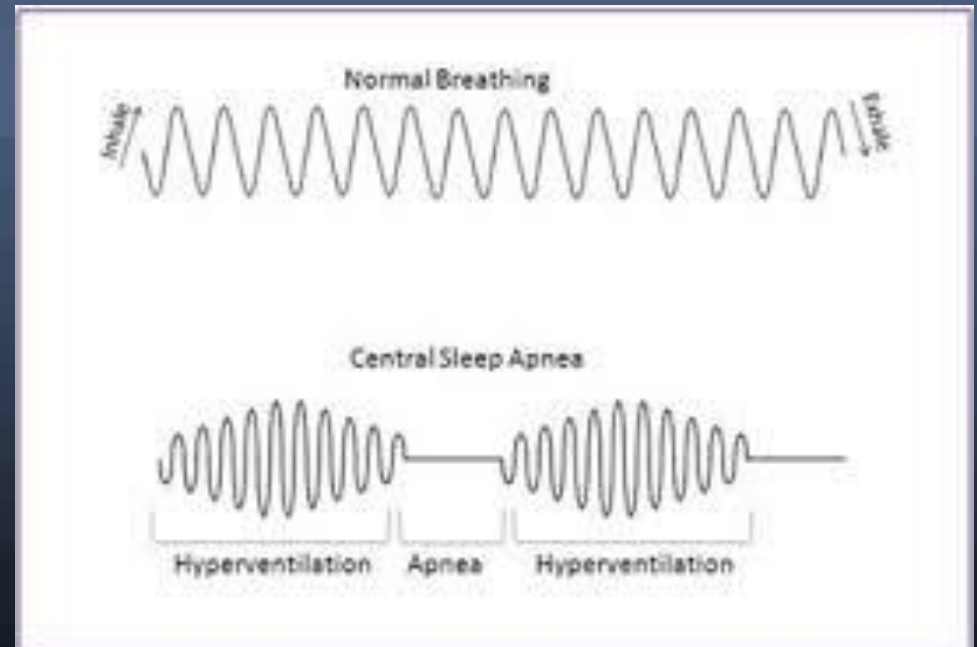




Invasive options



Central Sleep Apnea



Incidence of sleep-related disorders in 440 consecutive patients with HF

Sleep-related disorder	Incidence (%)
Central sleep apnea	25
Obstructive sleep apnea	28
Milder sleep-related disorders	18
No sleep-related disorder	29

Lamp B. Heart Failure Society of America 2004 Annual Scientific Meeting;
September 12-15, 2004; Toronto

Treatment



DEALING WITH JET LAG

- Simulate schedule of the time zone you will be flying into. If traveling to India, can try sleeping a little early
- Adapt to the new schedule while in flight
- Stay hydrated
- Move around on the flight
- May try Melatonin to help reset circadian rhythm
- Avoid high carb, fried foods.
- Avoid use of electronics half hr before you plan on sleeping

Fluids

- Avoid drinking fluids after 5 pm
- Drink fluids first thing in the morning and minimize after 5 pm
- If you wake up at night, drink a sip of water if you are thirsty
- This decreases night-time awakening and falls when you wake up

CONCLUSION

- Prevalence of Insomnia and sleep apnea increases with age
- Important to recognize it as a problem and address it with your doctor.
- If required, your doctor can refer you to a Sleep Medicine Specialist for further evaluation
- Avoid taking medications daily for sleep due to various side effects
- Remember that improvement in quality of sleep is essential to overall health.



"The good news is that you don't have apnea.
The bad news is that Fluffy sleeps on your face."

Thank you