

Sleep Apnea & Post-Polio Syndrome

Juan A. Albino, MD

Board Certified in Sleep Medicine

www.VillageSleepLab.com

751-4955 October, 2010

Common Sleep Disorders

- **Insomnia:** wants to sleep but cannot
- **Sleep Deprivation:** does not want to sleep but can; problem of sleep *quantity*
- **Sleep Apnea:** sleepy during day, snores (throat obstruction) problem of sleep *quality*
- **Restless Legs Syndrome:** leg discomfort, relieved by movement, symptoms day and night
- **Parasomnias:** abnormal sleep behaviors
- **Circadian Rhythm Disorders:** sleep clock not in harmony with the environment

Sleep Disorders: Major Problem

- **Very common but easily missed**
- Can be disabling but develop slowly
- Worsen or lead to other diseases
- Can lead to much suffering, even fatal
- Easy to diagnose and treat
- Biggest problem: keep them in mind
- New field in medicine: last 25 years
- Raise awareness in the community

Good Sleep Habits: Basics

- Regular times for sleeping and awakening
- Maintain bedroom dark, quiet, cool
- Use bed only for sleep and sex
- Avoid late daytime naps
- Avoid at night: alcohol, caffeine, nicotine
- Sleep around 7 to 8 hours every night
- Prudent exercise and eating
- Avoid stressful situations at bedtime
- Test: spontaneous bedtime and rise time

Neuromuscular Weakness in Post-Polio Syndrome

- Problem: **weakness** of throat & lung muscles that lead to breathing & swallowing problems ***begins at night***
- During **day**: alert mind guards against aspiration and **gravity** keeps food and fluids in stomach
- **Gravity** helps breathing: abdominal organs pulled away from lungs, which can easily drop, making inspiration easier

Neuromuscular Weakness in Post-Polio Syndrome

- At night: **gravity** against the PPS patient: weak muscles allow fluids to back up to throat and go into lungs: **aspiration**
- Weak respiratory muscles may not push away abdominal organs so lungs cannot fully expand, shallow breathing, or **hypoventilation**
- Weak muscles allow throat to collapse, obstruct airway, and lead to **sleep apnea**

Post-Polio Syndrome: Sleep Problems

- **Sleep Apnea** (obstructive, central, both)
- **Hypoventilation** (shallow breathing)
- **Aspiration** (fluid or food down trachea or windpipe with gasping, cough, infection)
- **Hypoxemia** (low oxygen) & **high carbon dioxide** caused by all the above
- **Insomnia** and **daytime sleepiness** can be caused by all the above

Sleep Apnea: Risk Factors

- Affects: 4 to 5% of population: common
- Family history, Sleep maintenance insomnia
- Obesity: 80 % of sleep apnea patients
- Increasing age, Male gender
- Large tonsils / adenoids in children
- Small mandible, large neck, **neurological PPS**
- Smoking, alcohol, sedatives, nasal allergies, can worsen sleep apnea

Sleep Apnea: Consequences

- During **night**: **snoring**, snorting, gasping, difficult or *stops breathing*, wife worries
- During **day**: **sleepy**, tired, depressed, irritable, impotent, forgets, sometimes few complaints, or overlooked
- More ***accidents***: work, home, motor vehicle
- Higher death rates with severe sleep apnea

Sleep Apnea: Consequences

- Hypertension, Atrial Fibrillation, Congestive Heart Failure
- Strokes, Heart Attacks
- Promotes *Obesity* and *Diabetes*
- Sleep Apnea leads to problems: during day & night, accidents, & risk factor for heart & brain diseases

Obstructive Sleep Apnea

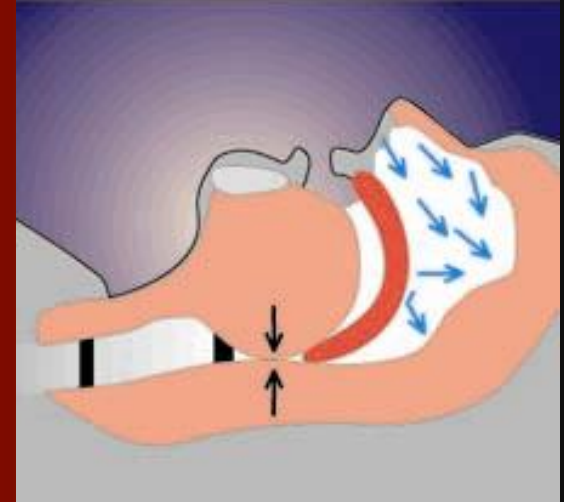
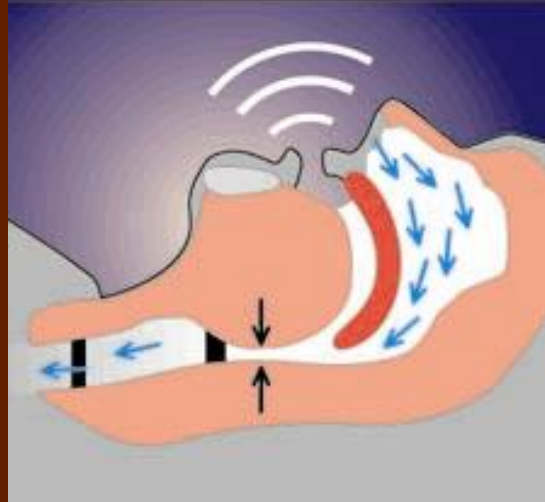
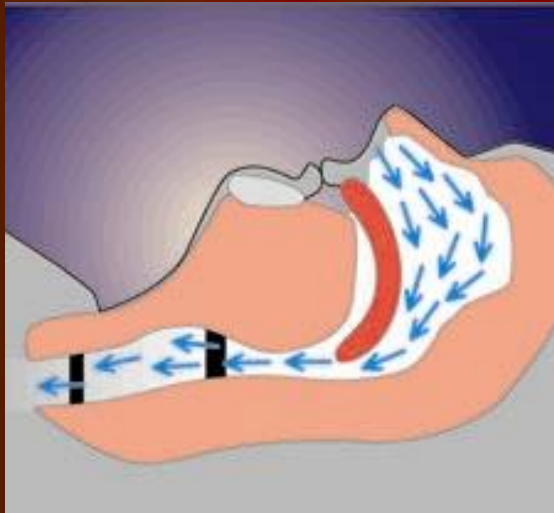
What is OSA?

- Cessation of airflow with ongoing respiratory effort

• **NORMAL**

SNORING

SLEEP APNEA



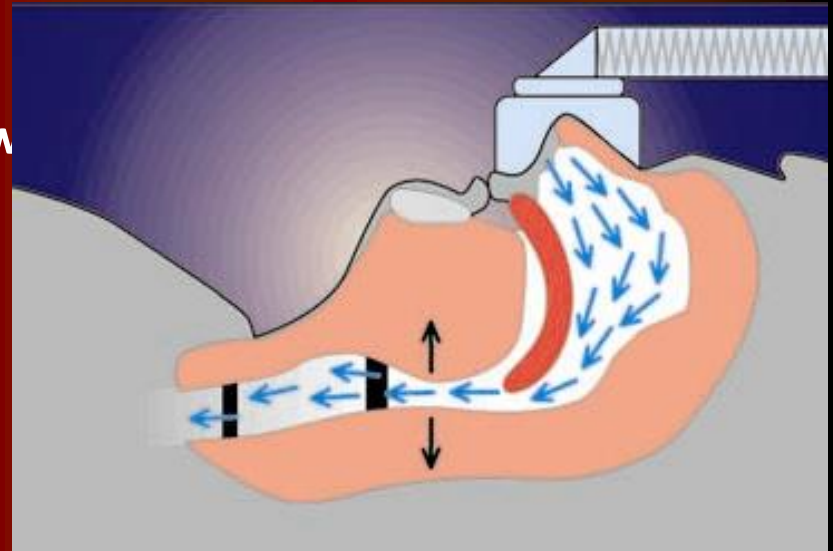
Sleep Apnea: Treatment

- General: Weight Loss, Sleep Position (Sleep on side, head raised), Oxygen, Avoid sedatives
- **CPAP**: proven therapy, needs motivation: widely available, 70%: patients adapt well
- Dental or **Oral appliances**: also pull forth mandible or tongue; expertise necessary
- Surgery: tracheostomy, tonsillectomy, pull forth mandible or tongue
- Bariatric Surgery: for obesity, banding, bypass

Treatment Options: CPAP

**Continuous Positive Airway
Pressure**

Positive pressure
keeps airway open
100% effective



Types of PAP Machines

- **CPAP**: set one continuous pressure
- Exhalation relief, e.g. Cflex
- Bilevel, e.g. **BIPAP**, set 2 pressures
- **Auto-CPAP**, set range of pressures
- **BIPAP-Auto**, set range of pressures
- **ASV** for Central Sleep Apnea, smart
- PAP used for OSA, CSA, Hypoventilation

Problems with CPAP

- 3 types of masks: **full face, nasal, pillows**
- 90% of problems are with masks
- Change size, style, manufacturer, *patience*
- Leaks common early on: mouth, mask
- After 2 weeks less leaks as brain adjusts
- Claustrophobia: desensitization, sedative
- If pressure a problem, use ramp, lower it, try a different type of machine
- At least try for 2 months, if severe 3 months

Summary: Sleep Apnea

- **Very common and dangerous**
- **Easily diagnosed and treated**
- **Benefits of treatment: sleep better at night, also**
- **Feel better during the day: less sleepiness and fatigue, more energy, less accidents**
- **Reduce risk factor for heart disease and strokes**
- **Control better: obesity, diabetes, hypertension**
- **Bed partner sleeps better: less noise and less worry (but dog or cat scared of CPAP)**

Neuromuscular Weakness with Advanced Post-Polio Syndrome

- Weakness of throat, lungs worse at night
- Management: **Head Elevation** 35 angle, avoid bedtime eating or drinking, helps prevent aspiration
- Avoid sedatives or alcohol, not worsen muscle weakness
- Positive airway pressure: **CPAP, BIPAP**, keep throat open & lungs expanded
- **Oxygen**

Summary: Sleep Disorders & PPS

- PPS patients often have sleep disorders, but the **majority can be diagnosed and treated**
- Fatigue and daytime sleepiness are hard to distinguish and sleep studies often necessary
- **Neuromuscular weakness at night easily missed**
- **Sleep apnea is easily missed**

Websites

- **The Village Sleep Lab: www.villagesleeplab.com**
- National Sleep Foundation: www.sleepfoundation.org
- American Sleep Apnea Association: www.sleepapnea.org
- Restless Legs Syndrome Foundation: www.rls.org
- American Academy of Sleep Medicine:
www.sleepeducation.com
- Commercial: www.talkaboutsleeeep.com
- Commercial: www.MyResmed.com
- Commercial: www.Respironics.com

Books

- *The Promise of Sleep* by William Dement
- *Sleeping Well* by Michael Thorpy
- *No More Sleepless Nights* by Peter Hauri
- *A Woman's Guide to Sleep Disorders* by Meir H. Kryger
- *Restless Legs Syndrome* by Robert H. Yoakum
- *Say Good Night to Insomnia* by Gregg D. Jacobs