

SLEEP APNEA: Obesity, DIABETES, & Headaches

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Thank You !!!

- Jim Smith, Diabetes Support Group
- Phillip Ratliff, AWAKE Group (753-8773)
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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 at night because of obstruction in throat; problem of sleep quality
- Restless Legs Syndrome: leg discomfort, relieved by movement that hinders sleep

Good Sleep Hygiene: Basics

- Regular times for sleeping and awakening
- Maintain bedroom dark, quiet, comfortable
- Use bed only for sleep and sex
- Avoid late daytime naps
- Avoid at night: alcohol, caffeine, nicotine
- Sleep around 8 hours every night
- Prudent exercise and eating
- Avoid stressful situations at bednight

Restless Legs Syndrome

- Leg discomfort, worse at night, relieved by movement, affects 5% of population
- Familial, begins in childhood
- Associated with iron deficiency, drugs, Periodic Limb Movement of Sleep
- Easily treatable with medicines
- Restless Legs Syndrome Foundation,
June K. Wharton (259-0979)

Sleep Deprivation

- Disasters: Exxon Valdez, Challenger Space Shuttle, Chernoble Nuclear Plant, Commuter plane crash in Kentucky
- 33% of fatal truck accidents
- 10% of fatal car accidents
- Impairment the same whether: drunk, sleep deprived (<4-6hrs.), sleep apnea
- Must be taken seriously: sleep 8 hours
- Leads to obesity and diabetes

Chronic Insomnia

- Acute Insomnia (<4 weeks): stress, illness
- Chronic Insomnia: >4 weeks, often years
- Treat basic problem: 50% psychological
- Treat primary insomnia, begins childhood
- Psychotherapy and behavioral therapy
- Medications, new ones coming out
- PCP, Psychologists, Psychiatrists

Sleep Apnea: Risk Factors

- Family history
- Obesity: 80 % of sleep apnea patients; central (visceral, apples) obesity
- Increasing age
- Male gender
- Large tonsils / adenoids
- Small mandible, large neck
- Smoking, alcohol, sedatives

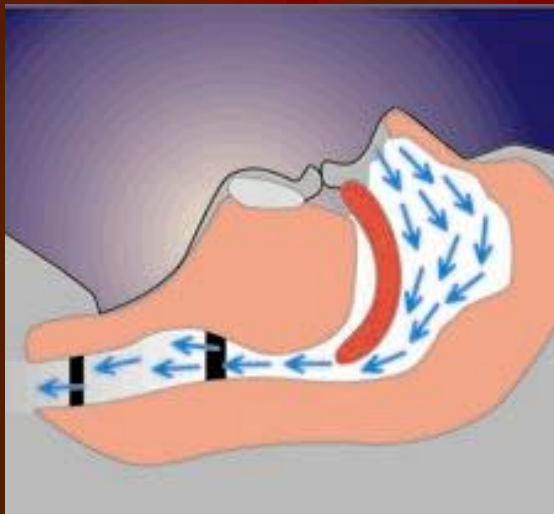
Sleep Apnea: Consequences

- Social / Psychological: work, family
- Personal: fatigue, tired, depression, irritability, impotence, memory
- More accidents: work home motor vehicle
- Higher death rates with severe apnea
- Hypertension, Congestive Heart Failure
- Heart Attacks, Strokes, Atrial Fibrillation
- Obesity, Diabetes, Headaches, Migraines

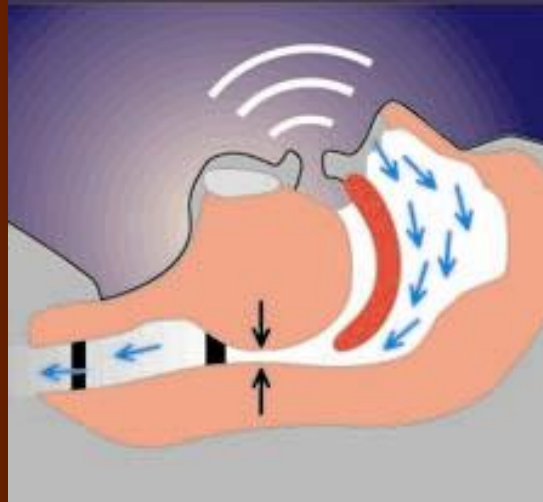
Obstructive Sleep Apnea

What is OSA?

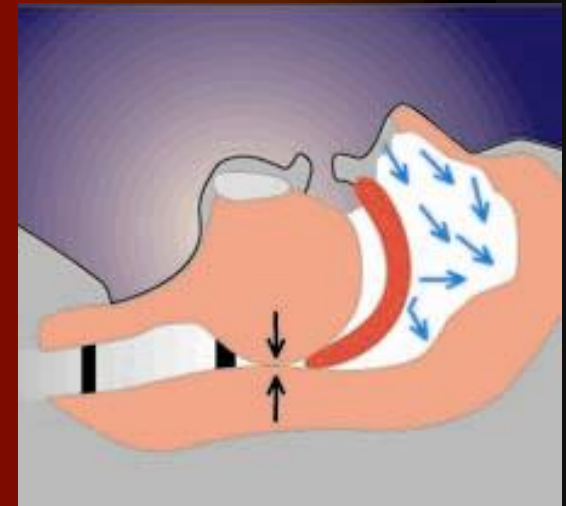
- Cessation of airflow with ongoing respiratory effort
- Normal



Snoring



Sleep Apnea



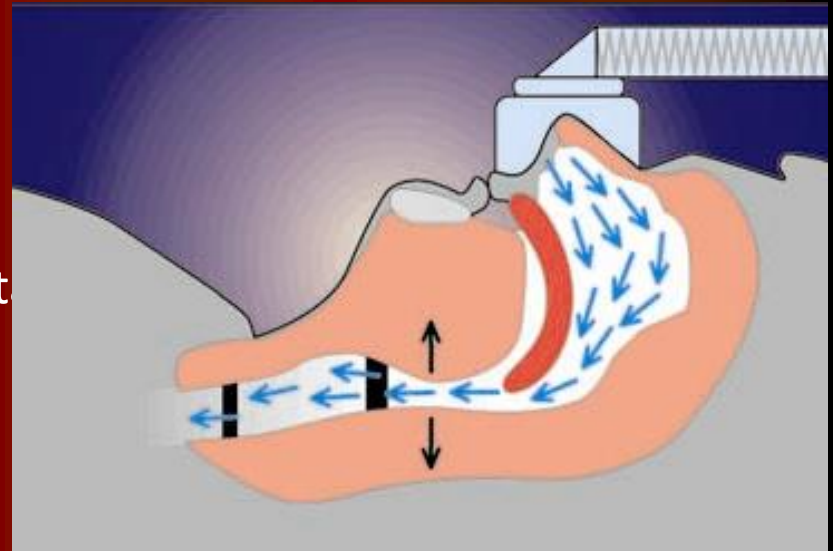
Sleep Apnea: Treatment

- Behavioral: Weight Loss, Sleep Position (Sleep on side, head raised), Oxygen, Avoid sedatives and alcohol
- CPAP: proven therapy, needs motivation: widely available
- Surgery: tracheostomy, tonsillectomy, pull forth mandible or tongue
- Dental appliances: also pull forth mandible or tongue; expertise necessary

Treatment Options

Treatment

- CPAP treatment
 - Positive pressure maint
airway patency
 - Titration
 - 100% effective



Linkage

- Obesity, sleep, stress, diet, and exercise
- One study: if not enough sleep wake up with greater hunger
- Proper amounts of sleep and exercise decrease appetite and obesity
- Much easier to obtain proper sleep and treat sleep apnea than to diet

Sleep Apnea & Other Conditions

- Diabetes worsened by Sleep Apnea
- Better control of Sleep Apnea leads to better control of Diabetes
- Sleep deprivation leads to a diabetic state
- Hypertension worsened by Sleep Apnea
- Fibromyalgia associated with sleep apnea
- Migraine headaches triggered by sleep apnea (stress & low oxygen)

Obesity

- Obesity, Sleep Apnea promote each other
- Hormonal links: *leptin* decreases and *ghrelin* increases hunger, while having opposite effects on sleep
- Unfortunately medical trials with leptin have not been fruitful
- Body is programmed: if not sleeping then eat more, in particular CHO and fat

Obesity and Sleep Deprivation

- Direct link with avoiding sleep and obesity
- Risk of obesity rises with sleep deprivation
- Less than 4 hours : 73% risk
- Five hours : 50% risk
- Six hours : 23% risk
- Less sleep: lower leptin levels
- Obese persons sleep less

Obesity & Sleep Apnea

- Sleep apnea, obesity promote each other
- BMI: Body Mass Index
- Underweight: <19
- Normal : 19 – 24
- Overweight : 25 – 29
- Obese : 30 – 39
- Morbidly Obese: 40 or above
- If obese RISK of Sleep Apnea is the BMI

Approach to Weight Loss

- Directly Dieting in long run: 5 to 10%
- By regular Exercise: 20 to 30%
- Avoid Sleep Deprivation when associated with obesity: 50 to 70%
- Treatment of Sleep Apnea associated with obesity: 50 to 70%
- Treating sleep disorders is a promising approach to obesity control

Sleep and Diabetes

- Sleep problems: risk factors for Diabetes
- Sleep problems worsen Diabetes
- Sleep deprivation worsens insulin resistance and glucose intolerance
- Sleep apnea does the same
- Control of sleep problems improves DM
- CPAP improves Diabetes control

Control Sleep Apnea: Better Diabetes Control

- Improve insulin sensitivity
- Lower blood sugars
- Lower HbA1-c
- Lower dosages of oral hypoglycemic agents or less medicines

Metabolic Syndrome

- Early risk factor: cardiovascular disease
- Affects: 50 million Americans
- High waist: men >40" women >35"
- High triglycerides: >150 mg/dl
- Low HDL: men <40mg women <50mg
- High blood pressure: >130/85
- High fasting glucose: >100
- Add: sleep deprivation or sleep apnea

Websites

- National Sleep Foundation:
sleepfoundation.org
- American Sleep Apnea Association:
sleepapnea.org
- Restless Legs Syndrome Foundation:
rls.org
- National Center on Sleep Disorders:
healthfinder.gov/orgs/HR2536.htm

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