

# Restless Legs Syndrome

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# Thank You !!!

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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 (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 (Shift Work)

# Insomnia: Acute or Chronic

- Insomnia: inability to get to sleep, stay asleep, wakes up early, with daytime impairment
- Acute Insomnia (<4 weeks): stress, illness
- Sleep medicines work well in acute stage
- Chronic Insomnia: >4 weeks, often years
- Treat basic problem: >60% psychological
- Psychotherapy and behavioral therapy better than medicines, not easy to treat
- Psychologists, Psychiatrists, PCP

# 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

# Obstructive Sleep Apnea

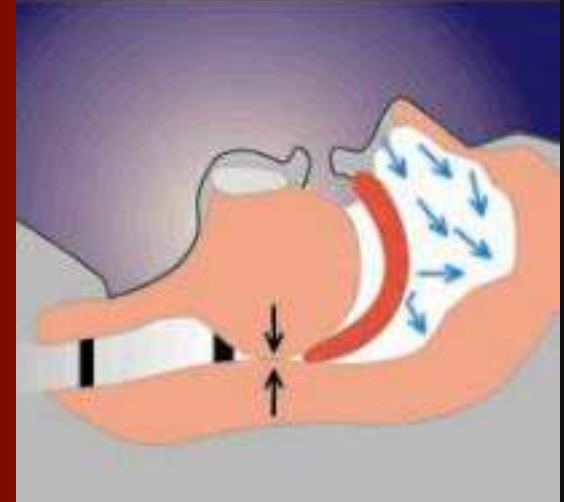
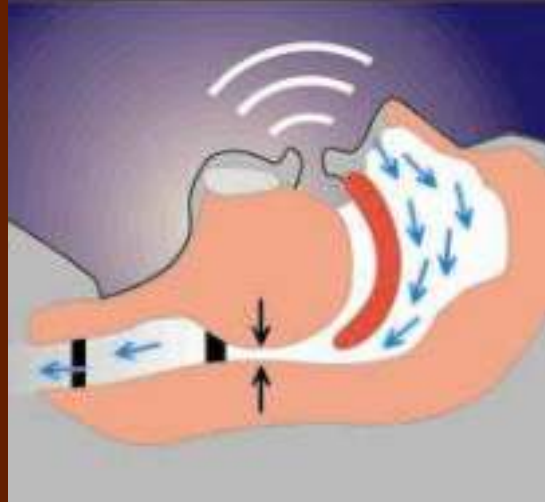
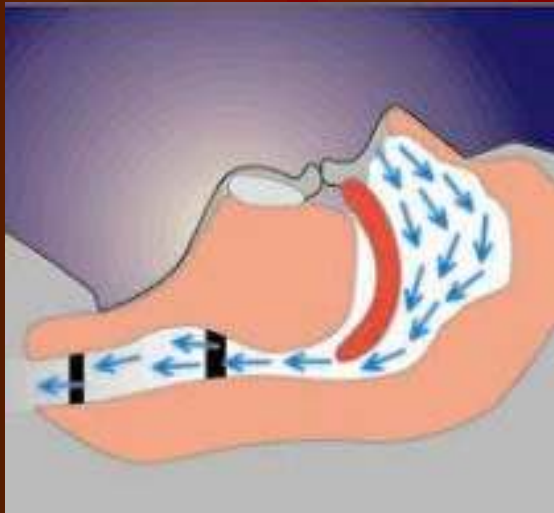
## What is OSA?

- Cessation of airflow with ongoing respiratory effort

• **NORMAL**

**SNORING**

**SLEEP APNEA**



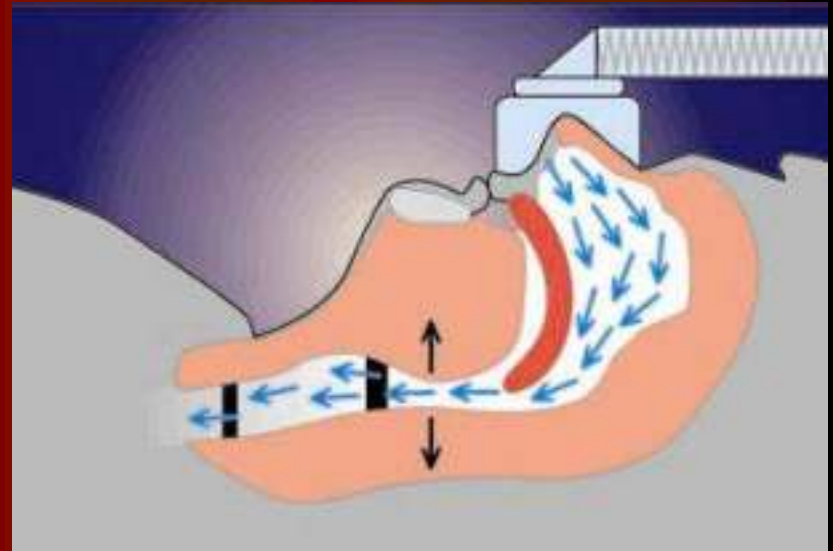
# Sleep Apnea: Consequences

- During **night**: snoring, snorting, gasping, difficult or stops breathing, wife worries
- During **day**: sleepy, tired, depressed, irritable, impotent, forgets, sometimes few complaints
- More *accidents*: work, home, motor vehicle
- Higher death rates with severe sleep apnea
- Hypertension, Congestive Heart Failure
- Heart Attacks, Strokes, Atrial Fibrillation
- Promotes *Obesity* and *Diabetes*
- Problems: at night, during day, risk factor

# Treatment Options: CPAP

## Treatment

- CPAP treatment
- Positive pressure keeps airway open
- 100% effective





# Parasomnias

- Abnormal behaviors while asleep
- Common in childhood: sleep walking, night terrors, nightmares, teeth grinding, talking or shouting
- Adults: REM Behavior Disorder in elderly
- Distinguish from seizures
- Sleeping pills can worsen sleep walking

# Circadian Rhythm Disorders

- The body's natural clock is not in harmony with the light dark cycle or with sleep/wake social cycles
- External disorders: shift work, jet lag
- Internal disorders: Delayed Sleep Phase Disorder, Advanced Sleep Phase Disorder, Irregular Sleep Phases (Alzheimer's, Liver Cirrhosis)

# Restless Legs Syndrome (RLS)

- Urge to move legs, discomfort at rest, worse at night, relieved by movement
- Severity: mild to incapacitating
- Affects 5-10% of population, women more
- Familial, often begins in childhood
- Still not well known by patients or doctors
- Common, easily diagnosed, and treatable
- Restless Legs Syndrome Foundation

# Restless Legs Syndrome

- Neurological *movement disorder* of unknown cause, lead to severe **insomnia**
- Primary or Familial Type, Secondary Type
- Common: 10% of population, 3% severe
- Disruptive of social activities and sleep
- Can lead to social withdrawal and daytime fatigue and sleepiness
- RLS occurs while awake, but can lead to waking at night, restlessness, nightwalker

# Restless Legs Syndrome

- Do you have RLS: see questions from RLS Foundation brochure
- Irresistible urge to move legs
- Leg discomfort occurs at rest or inactivity
- Leg discomfort gets better with movement
- Worse in the evening, rare in the morning

# Confused with RLS

- Leg Cramps, Fibromyalgia, Low potassium
- Anxiety, Stress, Akathisia (Drug effect)
- Arthritis, Vasculitis, Varicose Veins
- Pinched nerves, Neuropathy
- Blocked arteries (claudication)
- Positional discomfort, excess exercise
- Leg pains from statins (cholesterol drugs)

# RLS and PLMD

- Periodic Leg Movement Disorder, PLMD
- Involuntary leg movements while *asleep*
- RLS occurs while *awake*, but 80% PLMD
- Both PLMD and RLS can disrupt sleep
- Leg movements are common during sleep
- Need sleep study to diagnose PLMD but not RLS
- Same treatment for PLMD and RLS

# RLS / PLMD : Associations

- Iron deficiency, Pregnancy: 25%
- ? Other deficiency: B12, Folate, Magnesium
- Chronic Renal Failure on Dialysis, Varicosities
- Rheumatoid Arthritis, Fibromyalgia
- Diabetes, Peripheral Neuropathy, Spinal Stenosis
- COPD, Chronic Lung Disease, Sleep Apnea
- ADHD: Attention Deficit Hyperactivity Disorder, especially in children



# RLS / PLMD: Drugs

- Many common drugs can worsen RLS/PLMD: caffeine, alcohol, smoking
- Medicines antihistamines, antidepressants, calcium channel blockers, anti-nausea, strong tranquilizers
- Antihistamines: Benadryl, sleep aid
- Big exception among antidepressants: Wellbutrin or bupropion does not worsen RLS
- Problem with surgery: metoclopramide (Reglan), promethazine (Phenergan), restriction

# Drugs That Worsen RLS

- Antihistamines: Benadryl, Antivert
- Antidepressants: amitriptyline (Elavil), fluoxetine (Prozac), Paxil, Zoloft, Celexa
- Major Tranquilizers: haldol, Zyprexa
- Anti-nausea: Reglan (metoclopramide)
- Calcium Channel Blockers: Procardia, Cardizem, Verapamil

# RLS: General Treatment

- Mild, majority of patients, usually daily drugs not necessary, join support group
- Intermittent therapy for stressful situations: surgery, long duration of travel or public events
- Always replace low iron (ferritin) in: pregnancy, blood loss, donations
- Good sleep hygiene, stretch, massage, exercise, cold/hot, move legs, stand

# Good Sleep Hygiene: Basics

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

# RLS / PLMD: Worsening Symptoms

- Look for excess caffeine or alcohol
- New medications that aggravate condition
- Drug withdrawals: anticonvulsants, sedatives, narcotics
- Sleep Apnea, fatigue, other new diseases
- Subtle low iron (ferritin): GI blood loss (cancer or ulcer), blood donation

# RLS / PLMD: Drug Treatment

- Moderate to Severe: frequent symptoms, disabling, interfere with sleep, social events
- Drug Class: dopaminergic: new, modern, preferred, highly effective, Sinemet not used
- Include: Requip and Mirapex, expensive
- Side effects: nausea, dizziness, sleepiness, rarely: impulsive behavior, more with high doses
- Begin low and titrate up slowly, take 1-2 hours before bedtime

# RLS / PLMD: Other Medicines

- Sedatives / Hypnotics: especially useful at night: lorazepam (Ativan), temazepam (Restoril), zolpidem (Ambien), Lunesta
- Klonopin and Valium often last too long
- Ambien and Sonata often last too short
- Anticonvulsants: effective especially if pain or neuropathy involved: gabapentin (Neurontin), Lyrica (Fibromyalgia)
- Narcotics: low potency: Darvon, Codeine, Ultram  
high potency: Percocet, Vicodin, Methadone

# Complications of Therapy

- Drug side effects: new (dopaminergic) such as Mirapex & Requip:
- Nausea and vomiting
- Dizziness, sleepiness
- Sleep walking
- Impulsive behavior (gambling, sex)
- Begin at low dose, slowly titrate up



# Complications of Therapy: Side Effect of Medications

- Benzodiazepines: temazepam (Restoril), lorazepam (Ativan), clonazepam (Klonopin), diazepam (Valium)
- Sedation, falls, dizziness, addiction
- Narcotics: codeine, propoxyphene (Darvon), tramadol (Ultracette), morphine, oxycodone, methadone
- Sedation, falls, dizziness, addiction, hypoxemia, sleep apnea (central, obstructive), constipation, urination difficulty, nausea

# Complications of Therapy: Side Effect of Medications

- Anticonvulsants: gabapentin (Neurontin), pregabalin (Lyrica)
- Dizziness, confusion, blurred vision, dry mouth, constipation, allergic reactions
- Lyrica only drug also indicated for fibromyalgia

# Problems with Therapy

- **Tolerance** to drugs: symptoms gradually less well controlled: can increase or change drug or add a second med
- **Rebound**: symptoms return when drug wears off, usually in morning: change or increase drug
- **Augmentation**: daily Sinemet main culprit, symptoms increase in distribution, time, and intensity: change drug, add 2<sup>nd</sup> drug

# Classification of RLS

- **Mild / Intermittent:** Symptoms less than 3/week, little insomnia or social problem; treat as necessary: Sinemet, Sleeping Pill, Mirapex, Requip, Gabapentin
- **Moderate:** Symptoms 3/week to every night, insomnia or social concern, treat daily one drug: Mirapex, Requip, if cannot afford: generic sedative/hypnotic or narcotic

# Classification of RLS

- **Severe:** Symptoms cause marked nightly insomnia, daily fatigue, not only legs but arms, back or stomach can be involved, symptoms occur in afternoon or morning; use one drug: one or 2 doses, use 2 drugs
- **Intractable:** Not responsive to either Requip or Mirapex alone: need 2 higher dosages, add 2<sup>nd</sup> drug: sedative/hypnotic, narcotic, anticonvulsant
- **Intractable & Augmentation:** 2 drugs including long acting narcotic (pill, patch, sublingual, pump); always replace iron if low

# Primary vs Secondary RLS

- Primary or Familial begins before age 30
- Secondary mainly associated with pregnancy, renal failure, iron deficiency and resolves with these conditions
- Iron replacement is a very slow process and relief may take months
- Secondary RLS may be associated with peripheral neuropathy and have more pain; gabapentin or Lyrica most useful

# Anxiety and Depression

- Anxiety: difficulty going to sleep, worries
- Depression: difficulty going or staying asleep, or waking up early; hopeless, helpless, no fun, sad
- Depression: before or after RLS; problem recognizing, admitting to illness
- Drugs are effective in treating both
- Treat chronic insomnia: behavioral therapy
- Beware: anti-anxiety drugs & sleepiness; anti-depressants & insomnia

# Sleep Study: Polysomnogram

- Not usually required to diagnose RLS
- Not usually required for many circadian rhythm disorders: advanced or delayed sleep phases
- Required to diagnose sleep apnea, PLMD, and many parasomnias
- Sleep studies require considerable skill and expertise
- Assurance if technicians registered by the AAST, physician who interprets study is board certified in sleep medicine, and overall the sleep center is accredited by the AASM



# RLS / PLMD: Summary

- Restless Legs Syndrome is diagnosed by *history*: exclude leg cramps, normal exam
- Periodic Leg Movement Disorder is diagnosed by a *sleep study*
- **Common, easily diagnosed, and treatable**
- Symptoms: usually mild but can be incapacitating and very severe
- Once not known but news is spreading

# Websites

- Restless Legs Syndrome Foundation:  
[www.rls.org](http://www.rls.org)
- The Movement Disorder Society:  
[www.wemove.org](http://www.wemove.org)
- National Sleep Foundation:  
[www.sleepfoundation.org](http://www.sleepfoundation.org)
- American Academy of Sleep Medicine:  
[sleepeducation.com](http://sleepeducation.com)
- Village Sleep Lab [www.villagesleeplab.com](http://www.villagesleeplab.com) (Dr. Albino, coming in late February, 2007)

# RLS: Books

- *Restless Legs Syndrome*  
by Robert H. Yoakum (Founder RLS Foundation)
- *Restless Legs Syndrome: Coping with Your Sleepless Nights (American Academy of Neurology)* by Mark J. Buchfuhrer, et. al.
- *Restless Legs Syndrome: The RLS Rebel's Survival Guide* by Jill Gunzel
- *Sleep Thief: Restless Legs Syndrome*  
by Virginia N. Wilson