

More Napping on the Job!: Integrating Sleep Disorders into Family Medicine

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Sleep: A Definition

A reversible state of reduced awareness
and responsiveness to the environment



The Three States of Being

- Wakefulness
- REM sleep
- Non-REM sleep

REM vs. non-REM Sleep

- Differences in:
 - temperature control
 - heart rate
 - respiratory rate
 - blood pressure
 - brain activity
 - memory for dreams
 - ability to move body
 - genital engorgement

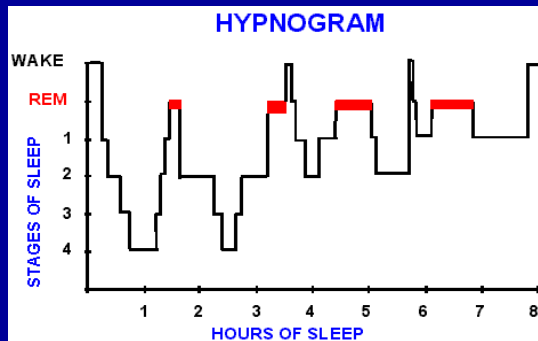


The Purpose of Sleep

“Sleep prevents people from getting up and
bumping into things in the night”

-- Bill Dement

Sleep Hypnogram



Assessment of Sleepiness

- Behavioral: yawning, ptosis
- Subjective: Epworth Sleepiness Scale
- Objective:

MSLT

Five 20-minute nap opportunities are given at two-hour intervals

Parameters measured are:

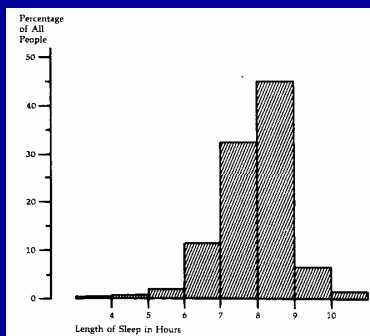
- average latency to sleep onset
- appearance of REM sleep

Test	Latency (min)	Stage	Latency (min)	Stage
1	14:00	W	14:20	W
2	16:00	W	16:20	W
3	18:00	W	18:20	W
4	20:00	W	20:20	W
5	22:00	W	22:20	W

Excessive Daytime Sleepiness

- **Sleep deprivation**
- **Obstructive sleep apnea**
- Narcolepsy
- Idiopathic CNS hypersomnia

Total Sleep Requirement



Obstructive Sleep Apnea

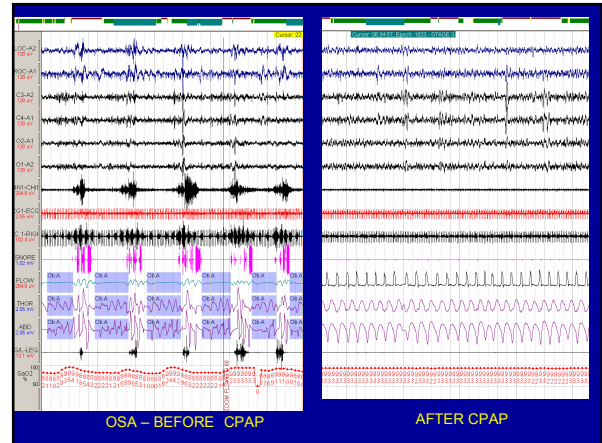
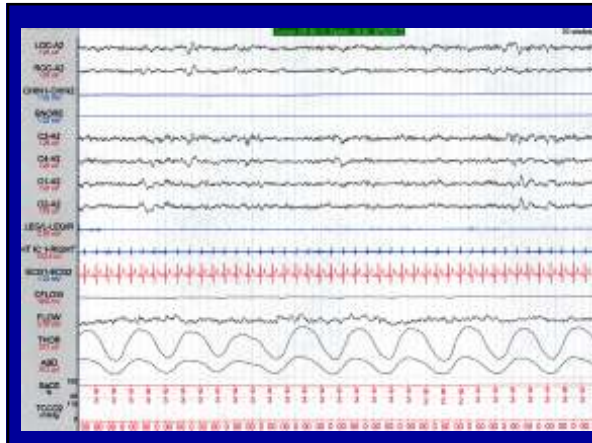
Normal Airway Obstructed Airway



Polysomnography

- Eye movements
Electroencephalogram
Submental electromyography
Electrocardiogram
Leg movements

Oral / nasal airflow
Respiratory effort
Oximetry
Others as indicated



The Link Between OSA and Hypertension

- > 40% of patients presenting with OSA have daytime hypertension¹
- 30% to 50% of patients with HTN have OSA²
- Even mild OSA is a risk factor for hypertension^{3,6}
- Patients with untreated OSA may be resistant to their anti-hypertensive medications⁴
- Even small decreases in blood pressure may help to decrease the risk of heart attack and stroke⁵

¹ Silverberg et al, Curr HypertensR, 2001
² Kraicze et al, AJRCCM 2000
³ Bixler et al., Arch Intern Med 2000

⁴ Logan et al., J Hypertens 2001
⁵ Heinrich et al., Circulation 2002
⁶ Nieto et al., JAMA 2000

The Link Between OSA and Hypertension



The Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) recommended screening patients with new onset or refractory hypertension for Sleep Apnea¹

¹ Chobanian, A. et al., Hypertension 2003, 42:1200-1252

Does Everyone Have Sleep Apnea?
Does Everyone Need Treatment?

Apnea - Treatment

Medical – none effective
Surgical - mechanical
Tracheostomy
Uvulo-palato-pharyngoplasty
Mandibulotomy, etc.
Oral Devices
Nasal CPAP

Behavioral
Weight loss

CPAP: Pneumatic Splint



Excessive Daytime Sleepiness

- Sleep deprivation
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- **Narcolepsy**
- **Idiopathic CNS hypersomnia**

Narcolepsy Symptoms

Primary

- Excessive daytime sleepiness
- Cataplexy

Auxiliary

- Hypnagogic hallucinations
- Sleep paralysis
- Automatic behavior
- Disrupted nocturnal sleep

Narcolepsy: Strict Diagnostic Criteria

- MSL < 5 minutes
- SOREMs on 2/5 naps

For Perspective: What would it take a non-narcoleptic to get a mean sleep latency of less than 5 minutes?

- Thirty two hours of sleep deprivation is required in non-pathological sleepers to approximate the daily sleepiness reported by narcoleptics.

Hood, Sleep 2001

- Being up all night on call.

Idiopathic Hypersomnolence

EDS despite adequate quantity of sleep at night and no sleep-disordered breathing

Vs. Narcolepsy: MSLT 5-10 min. and 0-1 SOREMs

Treatment - Pharmacologic

- Directed at two categories of symptoms:

Excessive daytime sleepiness

Ancillary symptoms

- Cataplexy
- Hypnagogic hallucinations
- Sleep paralysis
- Disrupted nocturnal sleep

EDS: Concluding Remarks

- EDS places a great burden on public health and individual well-being
- Disorders of genuine hypersomnolence are readily diagnosable and treatable
- A thorough evaluation of EDS might require more than just testing for sleep-disordered breathing

Major Categories of Sleep Disorders

Disorders of excessive daytime sleepiness

Disorders of initiating, maintaining sleep

Disorders of the wake/sleep cycle

Parasomnias



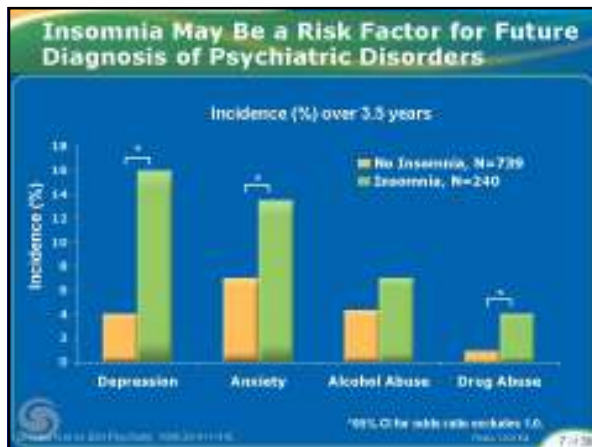
DSM-IV Definition of Chronic Insomnia

- ◆ Difficulty with initiating sleep, maintaining sleep, or nonrestorative sleep for ≥ 1 month
- ◆ Causes distress or impairment in social, occupational, or other areas of functioning
- ◆ Causes life interference

Presented to the 2004 Psychiatric Institute, 10/26/04, 11/11/04. © 2004 American Psychiatric Association. All rights reserved.

Consequences of Insomnia: New Thinking

- Pain
- Metabolism
- Mental Health



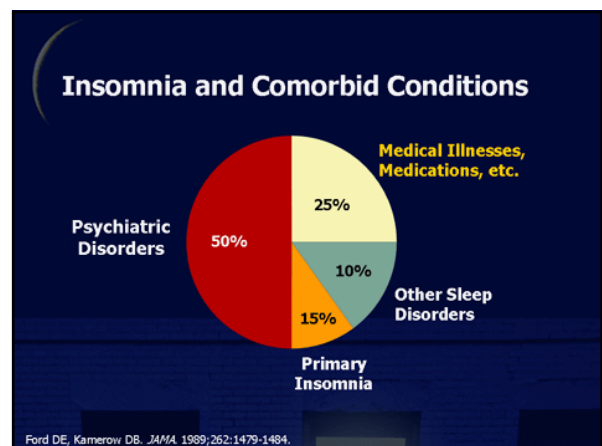
Short-Term Physiologic Studies

- In the laboratory setting, short-term sleep restriction leads to a variety of adverse physiologic sequelae, including
 - Impaired glucose control
 - Increased cortisol
 - Increased blood pressure
 - Sympathetic activation
 - Increased CRP
- These data suggest that sleep loss may have long-term health consequences

Meier-Ewert HK et al. J Am Coll Cardiol. 2004;43:678-683.

Case Study

- KO, a 47 yo woman with S. initiation difficulty and MONAs for 3 years.
- PMHx: kidney stones, migraines, intermittent asthma/allergies.
- Meds: pulmicort, nasalcort
- No Etoh, tob, drugs, or even caffeine
- No history of depression or anxiety
- Previous normal overnight sleep study



Insomnia and Psychiatric Disorders

- Depression
- Anxiety
- Bipolar Disorder

Insomnia and Sleep Disorders

- Obstructive Sleep Apnea
- Narcolepsy
- Restless Legs Syndrome
- Circadian Rhythm Disorders

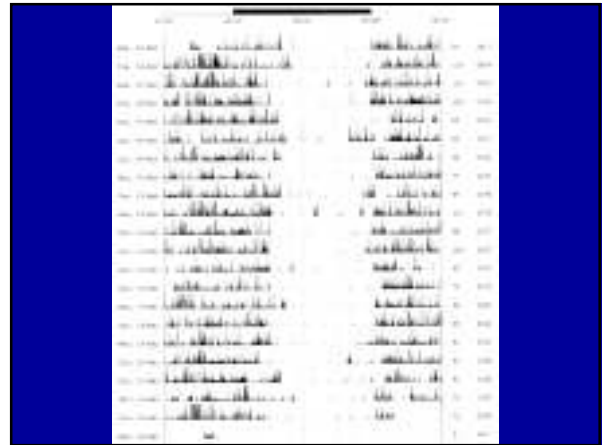
Major Categories of Sleep Disorders

Disorders of excessive daytime sleepiness

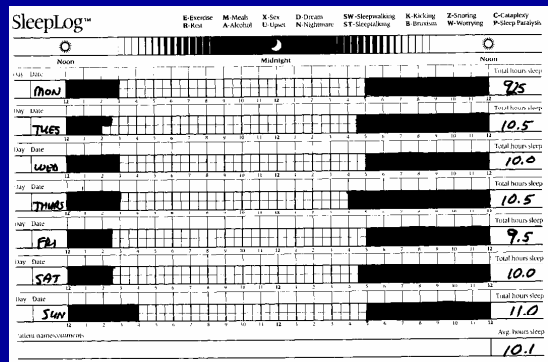
Disorders of initiating, maintaining sleep

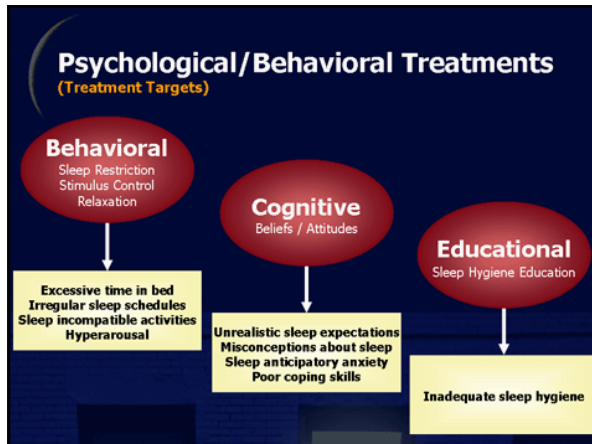
Disorders of the wake/sleep cycle

Parasomnias



Delayed Sleep Phase Syndrome

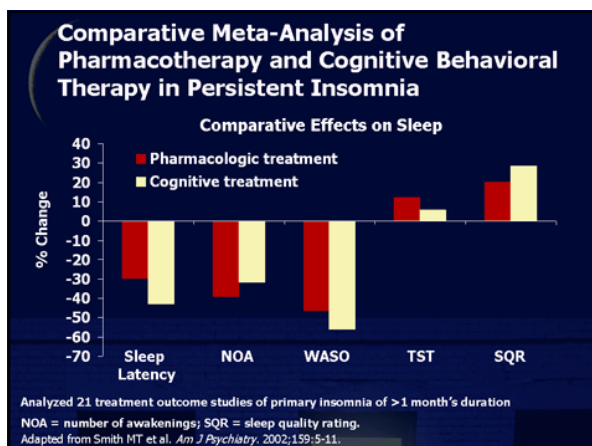




Drug Treatment of Chronic Insomnia: Expert Panel Findings

- Insomniacs tend to show therapy-seeking rather than drug seeking behavior, and patients without histories of drug abuse are unlikely to self-escalate the dose of currently available hypnotics
- Minimal data exist to support the use of antihistamines and antidepressants

- ### Medications for Insomnia
- Benzodiazepine Agonists
 - Benzodiazepines
 - Anti-Histamines
 - Trazodone and Sedating Anti-Depressants
 - Melatonin
 - (Good Ol' Alcohol)



- ### Concluding Thoughts
- Insomnia is highly prevalent, impacts greatly on quality of life, and is undertreated
 - CBT works in chronic insomnia, but it is time consuming and resources are limited
 - Pharmacotherapy is effective and the risks of dependence, tolerance, and addiction are low in the non abusing population

Major Categories of Sleep Disorders

Disorders of excessive daytime sleepiness

Disorders of initiating, maintaining sleep

Disorders of the wake/sleep cycle

Parasomnias

Parasomnias

- Undesirable physical or behavioral phenomena which occur exclusively during the sleep period or are exacerbated by sleep

Parasomnias

- The indications for evaluation are:
 - Potentially injurious or violent behaviors
 - Severe disruption of other household members
 - Resultant excessive daytime sleepiness
 - Atypical clinical features

Most Common Parasomnias

Disorders of arousal

Nocturnal seizures

REM sleep behavior disorder

Disorders of Arousal

Confusional arousals

Sleepwalking

Sleep terrors

Disorders of Arousal

Common features:

Tend to arise from slow wave sleep
Common in childhood
Cluster in families
Decrease with increasing age
Amnesia for event

Arousal Disorders - Treatment

Most need no treatment

Improved sleep hygiene

Benzodiazepines

Tricyclic antidepressants

Hypnosis

Nocturnal Seizure Disorder

Regardless of the specific nature of the symptom, any phenomenon that is:

Recurrent

Stereotyped

Inappropriate

May represent a seizure

REM Sleep Behavior Disorder (RBD)



ABMS Certification in Sleep Medicine

- Historical Notes
- Pathways for Board Eligibility
- Training Programs

Economics of Sleep Medicine

- Reimbursement
- Marketing
- Integration into a family medicine career

Concluding Remarks

- There is a role for family medicine in sleep medicine
- Most genuine sleep disorders are readily diagnosable and treatable
- Genuine sleep complaints are usually not due to psychiatric disorders or character flaws