Insomnia
An Integrative Approach

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Objectives
- Understand the importance of sleep to health
- Identify patients with insomnia
- Understand the various etiologies of insomnia
- Explore current pathophysiologic models of insomnia
- Have a core approach to treatment of insomnia

Why An Integrative Approach?
- Attempts to bring the best of conventional and CAM modalities to the understanding and management of insomnia

Integrative Model
1. Honors the place of subjectivity, as evident in CBT-1
2. Emphasizes the restoration of sleep health, as opposed to symptom suppression
3. Acknowledges the important social and relational context of sleep
4. Strongly emphasizes the role of lifestyle

Definition
Insomnia is present when all three of the following criteria are met:
- A complaint of difficulty initiating sleep, difficulty maintaining sleep, or waking up too early.
- The above sleep difficulty occurs despite adequate opportunity and circumstances for sleep.
- The impaired sleep produces deficits in daytime function.

International Classification of Sleep Disorders, 3rd ed

Short-term Insomnia
- Adjustment insomnia, acute insomnia, stress-related insomnia, or transient insomnia
- By definition, symptoms of short-term insomnia are present for less than three months, but they are accompanied by significant concern.
Chronic Insomnia

- Symptoms occur at least three times per week for three months or more and are not related to an inadequate opportunity for sleep or another sleep disorder.
- In some cases, patients who report repeated episodes of insomnia that occur for weeks at a time over years may be diagnosed with chronic insomnia, even if the individual episodes do not last for a full three months.
- Insomnia should include either a sleep latency of 20 minutes or more in children and young adults or 30 minutes or more in older adults; or wake periods of 20 minutes or more in children or young adults or 30 minutes or more in older adults. Complaints of early morning awakening are substantiated by termination of sleep at least 30 minutes prior to the desired time.

Epidemiology:

Prevalence

- Estimated 50-70 million Americans suffer from disorders of sleep and wakefulness limiting daily function and adversely affecting health and longevity. (1)
- Insomnia is one of the most common medical complaints, generating over five million office visits per year in the United States alone (2)
- A survey of primary care patients found that 69 percent had insomnia. The insomnia was reported as occasional by 50 percent and chronic by 19 percent. (3)

Epidemiology: Sleep Deprivation in U.S.

- The National Institutes of Health suggests that school-age children need at least 10 hours of sleep daily, teens need 9-10.5 hours, and adults need 7-8 hours.
- According to data from the National Health Interview Survey, nearly 30% of adults reported an average of ≤6 hours of sleep per day in 2005-2007.
- In 2009, only 31% of high school students reported getting at least 8 hours of sleep on an average school night. (4)

Epidemiology: Underdiagnosis

- Physicians seldom ask questions about sleep. In two studies in ambulatory clinics, questions related to sleep were only documented in 7–17% of patients. (5,6)

Health Consequences

- Lack of proper sleep takes a toll in nearly every key indicator of public health, including mortality, morbidity, accidents and injuries, functioning and quality of life, family well-being, and health care utilization.

Health Consequences: Quality of Life

- Patients with insomnia have decrements in both medical and emotional aspects of life. The magnitude of the impairment was similar to that seen in patients with a chronic medical condition (eg, heart failure) or depression. (7)
- Patients with insomnia are less likely to receive promotions and more likely to have errors or accidents, to be absent from work, and to have more health-related consequences (8,9)
Health Consequences: Cardiovascular

- Insomnia is associated with sympathetic nervous system activation, and a number of studies have shown an association between insomnia and elevated cardiovascular risk, including hypertension and myocardial infarction (10-15).

Health Consequences: Obesity and Diabetes

- Patients with insomnia and short nocturnal sleep time are at increased risk for diabetes (16), and treatment of insomnia in patients with diabetes has improved both sleep efficiency and glycemic control as measured by HbA1c in at least one study (17).
- A study of 1,024 adults, participants with short sleep had reduced leptin and elevated ghrelin. These differences in leptin and ghrelin are likely to increase appetite, possibly explaining the increased BMI observed with short sleep duration. (18).

Health Consequences: Mental Health

- Insomnia is a strong predictor of the development of psychiatric disorders, such as depression, anxiety, and drug abuse.
- Among patients with both insomnia and a mood disorder, approximately one-third developed insomnia prior to the mood disorder (19).
- A majority of alcoholics report sleeping problems prior to their alcohol dependence (20).
- Insomnia is highly predictive of relapse in both depression and alcohol dependence (21,22).
- Depression improves more rapidly in patients with insomnia and depression when both the insomnia and depression are treated (23).

Etiology

- Three P’s
  - Predisposing Factors
  - Precipitating Factors
  - Perpetuating Factors

Predisposing Factors

- Broad range of biomedical, psychological and lifestyle
- Drug dependence: alcohol, caffeine, nicotine, etc. including medication.
- Illness - mood disorders, pulmonary disease, pain conditions, cancer, GERD, heart failure
- Primary sleep disorders - OSA, RLS, PLMD
- Circadian disorders - shift work, jet lag, sleep-phase syndromes

Precipitating Factors

- Stress!
Perpetuating Factors

- Behavioral - range of behaviors meant to manage or compensate for insomnia that inadvertently exacerbate symptoms
  - excessive waking time in bed
  - irregular sleep-wake cycle
  - excessive caffeine, alcohol or other drugs
  - anxiety with trying to control sleep

- Biomedical
  - Medications:
    - Stimulants
    - Calcium channel blockers
    - Lipophilic Beta Blockers - propranolol, metoprolol, pindolol
    - Antidepressants
    - Glucocorticoids
    - Fat soluble statins
    - Vitamin B12 and B6
    - Glucosamine

- Environmental
  - Light Exposure - ordinary light exposure before bedtime suppresses melatonin secretion (24)
  - Sound (25,26)
  - Temperature

Pathophysiology

- Chronic Cognitive-Emotional Hyperarousal
  - Premorbid condition?
  - Associated elevated metabolic rate, heart rate, core body temperature
  - Neuroendocrine dysregulation; elevated nighttime cortisol and decreased MT

Dual - Process Model of Sleep Regulation

- Sleep as a dynamic interaction between daytime alertness and sleep
- Sleep normally occurs with nightly, rhythmic release of daytime alertness
- Insomniacs are generally less sleepy but more fatigued due to a state of hyperarousal

Evaluation

Clinical History

1. Presenting Complaint
2. Sleep-Wake Routine
3. Daytime Functioning and Symptoms
4. Sleep Conditions and Routines
5. Previous Treatment Effects
6. Other Sleep Disorders
7. Comorbid Medical Conditions, including medications
8. Psychiatric Conditions and Stressors, including substance use and abuse
Evaluation

- Subjective Measures - the most critical component of the evaluation of insomnia
- What is the patient’s basic posture toward sleep and dreaming?

Evaluation

- Objective Measures - sleep logs and diaries
  - www.sleepeducation.com - AASM
  - PSG
    - not routinely indicated
  - R/O other sleep disorders - PLMD, RLS, OSA

Integrative Therapy

- "If there is a secret to a good night’s sleep, it is a good day’s waking.”
  - Rubin Naiman, PhD

Integrative Therapy

Basic Approaches

1. Taking something to sleep - the fundamental belief that insomnia results from a lack of sleepiness
2. Letting go of something to sleep - reducing the noise of excessive wakefulness or hyperarousal

Integrative Therapy

Basic Approaches

- Combination therapy: involves initially prescribing both cognitive behavioral therapy and a medication (usually for six to eight weeks), then tapering the medication off or to an as-needed schedule while continuing cognitive behavioral therapy.
- The use of medication prior to the initiation of behavioral therapy appears to be less effective (36)
Integrative Therapy
Taking Something To Sleep

- Medication Side Effects
  - Damaged sleep architecture: Diminished deep sleep, suppression of REM
  - Cognitive Impairment and hangover

- Dosing Precautions
  - 2013 FDA recommended max dose zolpidem 5mg/6.25mg ER for women (24)
  - No driving or other activities requiring mental alertness the day after taking zolpidem ER (24)
  - 2014 similar communication regarding 2 and 3 mg doses of eszopiclone. Starting dose now recommended at 1 mg for all patients (25)

- Mortality Concerns
  - Several observational studies have found an association between use of prescription of hypnotic drugs and all-cause mortality, with adjusted hazard ratios ranging from 1.1 to 4.5 (26-31)

- Valerian Root - Valeriana Officinalis
  - Sedating botanical with purported anxiolytic and hypnotic properties
  - Most studies are of weak methodological design and mixed outcomes
  - Does appear to be safe, non-addictive and without withdrawal symptoms
  - Used with caution in pregnancy and liver disease

- Hops - Humulus lupulus
  - German Commission E approved for insomnia
  - No evidence of toxicity at medicinal doses
  - Caution in pregnancy

- Melatonin
  - Neurohormone
  - Regulates circadian rhythms, mediating sleep and dreams
Integrative Therapy
Taking Something To Sleep
- Melatonin
  - Mixed efficacy for insomnia
  - 2004 AHRQ Publication - limited usefulness (32)
  - 2005 meta-analysis - modest beneficial effects on sleep latency and sleep efficiency (33)

Integrative Therapy
Taking Something To Sleep
- Melatonin
  - Dosing
    - 90% eliminated in first pass through liver, so sublingual may have advantage
    - Half-life of only 0.5 - 2 hours
    - 0.3 - 0.5 mg generally recommended for adults

Integrative Therapy
Taking Something To Sleep
- Melatonin
  - Safety: Adverse reactions are uncommon, but more likely at high dose (34)

Noise Reduction Approach to Insomnia
Body, Mind and Bed Framework
- Body - biomedical factors
- Mind - psychological factors
- Bed - environmental factors

Noise Reduction Approach to Insomnia
Sleepiness to noise ratio
- Sleepiness - refers to propensity to sleep
- Noise - any stimulation that interferes with sleep, the subjective experience of hyperarousal
- Insomnia occurs when a person’s noise level exceeds that of sleepiness
- Identification and management of factors that produce noise (35)

Noise Reduction Approach to Insomnia
Body Noise
- Manage all comorbid conditions, especially other sleep disorders, depression, menopause and chronic pain
- Manage sleep side effects of medications
- Manage alcohol, caffeine, nicotine use
**Noise Reduction Approach to Insomnia**

**Mind Noise**
- Cognitive Behavioral Therapy for Insomnia
  - Decreasing psychological and emotional expressions of hyperarousal

**Daily Relaxation Practice**
- Meditation or Prayer
- Movement Relaxation Practices - Yoga, Tai Chi
- Progressive Muscle Relaxation
- Guided Imagery
- Biofeedback
- Self-Hypnosis
- Breath Work - 4:7:8 relaxation breath exercise

**Stimulus Control Therapy**
- Go to bed with the intention to sleep only when sleepy
- Bedroom is for sleep and sex only
- Do not watch the clock
- Stay in bed for no longer than 15 minutes
- Keep a fixed waking time, irrespective of total sleep time
- Avoid napping

**Evaluate and discuss dysfunctional thoughts**
- I should sleep 8 hours every night
- I should fall asleep quickly
- I should always sleep through the night
- I can and must sleep through the night
- I should rest in bed if I can't fall asleep
- I will have a terrible day if I do not sleep well

**Bed Noise**
- Regulation of Circadian Rhythms
  - Phototherapy - 30-45 minutes of bright light shortly after rising
  - Maintain regular sleep-wake cycle
  - Dimm lights or use blue-blocking technology 1-2 hours before bed (www.lowbluelights.com)
  - Sleep in total darkness

**Create a Sense of Sanctuary**
- Establish the bedroom as a stress-free and work-free zone
- Limit exposure to stressful imagery from books, TV, computer, etc.
- Conceal clocks
- Maintain peace with sleep partner