SLEEP WORKS

NON-PHARMACOLOGIC SLEEP MANAGEMENT

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DISCLOSURE OF FINANCIAL SUPPORT

Potential for conflict(s) of interest:

- Sleep Works Consulting benefits financially from the sale of a product that will be discussed in this program (Cognitive Behavioural Therapy for Insomnia).
- Marlee & Leah own Sleep Works Consulting.

MITIGATING POTENTIAL BIAS

- Cognitive Behavioural Therapy for Insomnia is the Gold Standard Treatment for Chronic Insomnia.

AGENDA

- Natural Sleep
- Insomnia
- Sedative/Hypnotic Medication
- Components of Cognitive Behavioural Therapy for Insomnia (CBT-i)
- Sleep Disordered Breathing & Treatment
- Q&A

Sleep Stage	Brainwave Type	Cortex Activity
Wakefulness	**Beta** (13-30 Hz) **& Alpha** (8-12 Hz)	**Active, high-frequency waves (Beta) and relaxed but alert (Alpha)**
Stage 1 (Light Sleep)	**Theta** (4-8 Hz)	**Slowing activity, drifting into sleep**
Stage 2 (Light Sleep)	**Theta with Sleep Spindles** (12-16 Hz) **& K-Complexes**	**Sleep spindles help with memory processing, K-complexes help block external noise**
Stage 3 & 4 (Deep /Slow-Wave Sleep)	**Delta** (0.5-4 Hz)	**Very slow, syncronized waves; brain detox and memory consolidation**
REM Sleep (Dreaming)	**Low Voltage, Mixed Fast Beta & Theta Waves**	**High cortical activity, similar to wakefulness; important for memory and learning**

INSOMNIA

Prevalence of Chronic Insomnia

- Characterized by difficulty falling asleep, staying asleep, or waking up too early at least 3 times a week for 3 months or more.
- Approximately 10-15% of adults suffer from chronic insomnia worldwide.

- **Short-term insomnia** (lasting less than 3 months) affects an even larger percentage, around 30-35% of adults, often triggered by stress, life changes, or illness.

CHRONIC INSOMNIA

(Primary or Secondary)

It is recommended to address insomnia with Cognitive Behavioural Therapy for Insomnia (CBT-I) even when insomnia is a secondary issue for several important reasons:

1. Insomnia exacerbates other conditions.
2. CBT-I is effective in the presence of co-morbidities.
3. Improvement in sleep quality and daily functioning.
4. No side effects or risks.
5. Addressing the root cause of insomnia.

Feature	Natural Sleep	Sleeping Pills (Sedative Hypnotic)
Cortical Activity	Alternates between deep sleep (slow waves) and REM sleep	Supresses cortical activity, reducing deep sleep & REM sleep
Brainwave Patterns	Slow waves in deep sleep, fast waves in REM sleep.	More sustained slow waves, but lacks natural cycling
Neural Connectivity	Dynamic connections shift during different sleep stages.	Reduces connectivity, making thoughts more “disconnected”
Consciousness & Awareness	Can wake up easily from external stimuli	Harder to wake up , but sleep may feel less refreshing
Memory & Processing	Memory consolidation occurs (especially in REM)	Memory may be impaired (some drugs cause amnesia)

HOW SLEEPING PILLS DISRUPT BRAINWAVES

Benzodiazepines & Z- Drugs alter the balance of sleep stages, affecting brainwave activity in major ways:

- **Increase Spindle Activity (Stage 2 light sleep)**
  - More sleep spindles (12-16 Hz) but less deep sleep & REM.
  - Sleep feels lighter & less restorative over time.
- **Reduce Delta Waves (Deep Sleep) & Suppress REM**
  - Delta waves (0.5-4 Hz) are needed for deep sleep. Benzodiazipines suppress them, leading to **less deep sleep**.
  - **REM suppression** = Poor emotional processing & memory formation.
- **EEG Looks Like Sedation, Not Natural Sleep**
  - Similar to Stage 2 sleep, but prolonged, without smooth transitions.

COGNTIVE BEHAVIOURAL THERAPY FOR INSOMNIA (CBT-I)

CBT-I is a structured multi-session program, usually between 5-8 sessions, that addresses the underlying thoughts and behaviours that perpetuate the insomnia.

- No side effects.
- Between 70-80% of patients achieve a therapeutic response during acture treatment (within 6 weeks).
- CBT-i therapeutic effects are remarkably stable over time periods up to 24 months.

CBT-I is an evidence based, highly effective and non-pharmacological treatment that can quickly resolve insomnia issues with lasting effect.

CBT-I

Insomnia often involves cognitive and physiological hyperarousal, where the bed becomes associated with wakefulness, frustration, and stress.

The cognitive behavioural approach is most effective, but each component can be beneficial to your patient who is struggling with sleep.

Cognitive Restructuring

Sleep Consolidation or Sleep Restriction Therapy

Stimulus Control

Relaxation Techniques

Sleep Hygiene Education

COGNITIVE RESTRUCTURING

Focuses on identifying and changing unhelpful thoughts and beliefs related to sleep. These thoughts often contribute to the maintenance of insomnia by creating anxiety, worry, and unrealistic expectations about sleep. Cognitive restructuring helps individuals challenge these thoughts and replace them with more realistic, helpful ones, reducing sleep-related anxiety.

Maladaptive Sleep Cognitions	Adaptive Sleep Cognitions
"If I don't get 8 hours of sleep, my whole day will be ruined!	"Even if I don't sleep well, I can still have a productive day."
"I will never be able to fall asleep without medication."	"My body knows how to sleep, and I don't need to force it."
"I must try harder to sleep."	"Worrying about sleep only makes it harder to sleep."

SLEEP RESTRICTION THERAPY

A behavioral intervention that reduces time spent in bed to strengthen the body's homeostatic sleep drive and improve sleep efficiency. It is based on the principle that chronic insomnia disrupts the balance between time in bed and actual sleep, leading to fragmented, low-quality sleep. By temporarily restricting sleep opportunities, SRT concentrates sleep into a shorter, more efficient period, making it easier to fall and stay asleep.

1. Calculate Average Sleep Time → Keep a sleep diary for a week to get average sleep time.

2. Set a Restricted Sleep Window → Time in bed should roughly match your average sleep time, but never be less than 5.5 hours to prevent excessive sleep deprivation.

3. Maintain a Fixed Wake Time → Wake up at the same time every day, regardless of how much sleep you got.

4. Increase Time in Bed When Sleep Efficiency Improves → Once sleep efficiency (time asleep ÷ time in bed) exceeds 85% for a week, extend sleep window by 15–30 minutes.

QUICK TIPS

A good rule of thumb is we should spend less than an hour awake in our beds per night.

STIMULUS CONTROL

A behavioral intervention designed to reassociate the bed with sleep and reduce conditioned arousal in individuals with insomnia. It is based on classical conditioning principles and aims to strengthen the brain's association between the bed and sleep rather than wakefulness or frustration.

1. Only go to bed when sleepy.
2. Get out of bed if unable to sleep within ~ 20-30 minutes; do a non stimulating activity; return to bed when feeling sleepy or in about 20-30 minutes.
3. Use the bed only for sleep (and intimacy).
4. Wake up at the same time every day (no matter sleep duration).

QUICK TIPS

This is a good strategy for patients who have difficulty with falling asleep initially.

RELAXATION TECHNIQUES

Physiological and cognitive interventions designed to reduce autonomic hyperarousal. These techniques target the parasympathetic nervous system (PNS) to lower stress responses and create an optimal state for sleep onset and maintenance.

Types of Evidence-Based Relaxation Techniques:

- Progressive Muscle Relaxation: Systematic tensing and relaxing of muscle groups to reduce somatic tension and autonomic arousal.
- Deep Breathing (Diaphragmatic Breathing, Box Breathing, Physiological Sigh Breathing): Activates the parasympathetic nervous system, lowering heart rate and cortisol levels.
- Mindfulness Meditation: Reduces amygdala activity, promoting calm awareness and decreased rumination.

QUICK TIPS

Becoming comfortable with techniques before using it during moments of stress will make any of these techniques more effective.

SLEEP HYGIENE EDUCATION

Sleep hygiene education refers to the set of practices and habits that promote healthy and restful sleep. It involves teaching individuals the importance of good sleep behaviors and how to create an environment conducive to quality sleep.

- Maintaining a regular sleep-wake schedule.
- Creating a bedroom environment conducive to sleep (e.g., cool, dark, and quiet).
- Avoiding large meals, caffeine, and alcohol close to bedtime.
- Limiting screen time (phones, computers, TV) before bed.

QUICK TIPS

A good place to start with sleep hygiene is bedroom environment.

HALO EFFECT

The halo effect of CBT-I refers to the beneficial effects that improved sleep has on co-occurring conditions, such as ADHD, chronic pain, depression, and anxiety.

By addressing the root cause of insomnia, CBT-I improves sleep, which in turn enhances cognitive function, mood, pain tolerance, and overall well-being, leading to a cascade of positive effects in managing other conditions.

This makes CBT-I not just a treatment for insomnia but a holistic intervention that can support overall health and functioning.

SLEEP APNEA

<5 events/hour	Normal
≥5 to <15 events/hour	Mild
≥15 to <30 events/hour	Moderate
≥30 events/hour	Severe

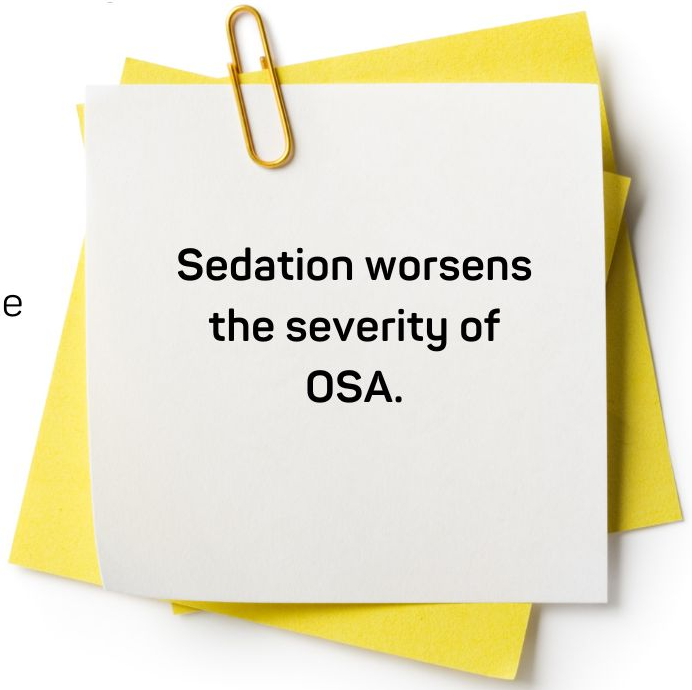
Apnea Classification:

- **Obstructive Apnea:** Airflow stops, but respiratory effort continues.
- **Central Apnea:** Airflow stops, and there is a lack of respiratory effort.
- **Mixed Apnea:** A combination of both obstructive and central apneas.

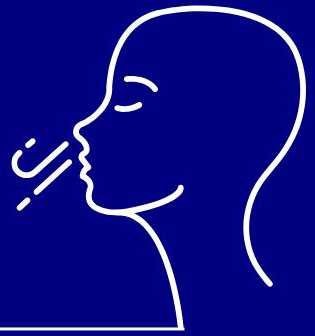
PEARLS FOR ALTERNATIVES TO CPAP THERAPY

If Your Patient:

- Has a recessed chin or obvious overbite, a MAS/MAD is a good alternative.
- Has had a sleep study that shows a higher AHI in the supine position, a positional device is a good alternative.
- Has a large neck due to obesity, weight loss would be beneficial.



GENDER DIFFERENCES IN SLEEP DISORDERED BREATHING



- Women, particularly post-menopausal women, are more likely to have sleep apnea without obesity.
- Women tend to have less severe OSA but experience higher levels of insomnia and more significant cognitive dysfunction.
- In Upper Airway Resistance Syndrome (UARS) resistance can cause brief awakenings from sleep, resulting in fragmented sleep, leading to excessive daytime sleepiness and other related symptoms.
- Women often exhibit more subtle symptoms and experience insomnia, fatigue, and mood disturbances such as depression or anxiety.

SYMPTOMS OF SLEEP DISORDERED BREATHING IN WOMEN

- **Fatigue and Insomnia**
- **Daytime Sleepiness and Cognitive Impairment**
- **Mood Disorders**
- **Subtle Snoring and Less Severe Apneas**

Recognizing differences in symptom presentation, and diagnostic challenges is critical for improving detection and treatment of sleep-disordered breathing in women.

PEDIATRIC SLEEP APNEA

<1 event/hour	Normal
≥1 to <5 events/hour	Mild
≥5 to <10 events/hour	Moderate
≥10 events/hour	Severe

Symptoms:

- Habitual snoring, apnea episodes, choking, or gasping during sleep.
- Mouth breathing.
- Bedwetting.
- Nocturnal diaphoresis.
- Restless sleep/frequent awakenings.
- Irritability.
- Behavioral issues; impulsivity, aggression, and hyperactivity.

SLEEP IS MEDICINE

...and the foundation of our health!

SLEEP DIARY TOOL & OTHER RESOURCES

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