



Get Your ZZZZZ's

*A (mostly) Non-pharmacologic
Approach to Insomnia*

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Goals for this session:

- Define primary insomnia
- Briefly discuss secondary or comorbid insomnia
- Define an initial approach to primary sleep issues
- Focus on behavioral therapies
- Review the data behind supplements

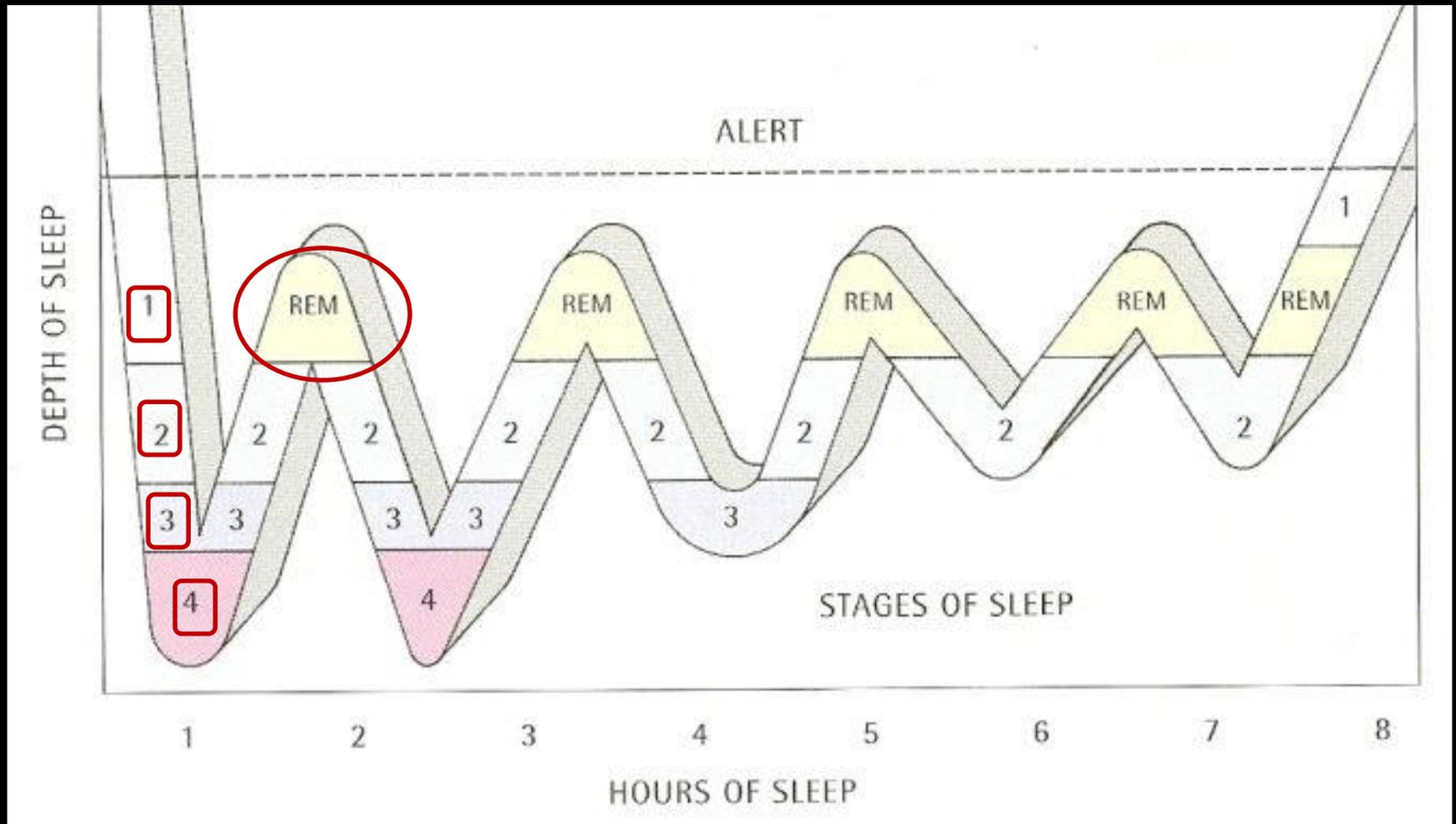




Insomnia:

Problems initiating and/or
maintaining sleep at least three
nights/week for 1 month,
accompanied by daytime distress or
impairment

Architecture of Sleep



- Sleep latency – time to fall asleep – usually less than 30 min
- Sleep quantity – time one is asleep – 7-9 hours recommended
- Sleep consolidation – uninterrupted sleep
- Sleep quality – adequate time for sleep with persistent daytime sleepiness

Can't
sleep. 

How big is the problem?

10-30% of adults



mention it to their physicians

5% seek treatment

23% turn to over-the-counter

28%

Majority remain untreated



\$77-92 Billion

Who has insomnia?



Immune Function
Neurocognitive Function
Diabetes
Cardiovascular Disease
Cancer
All Cause Mortality



34%



15-30%

Predisposing Conditions

35-44%

- Depression
- RLS, PLMS, OSA,
- GERD, cholelithiasis, IBS, colic
- Neuro – stroke, dementia, Parkinson
- GU – nocturia, prostatitis, BPH
- CV – CHF, dys
- Pulmonary – laryngospasm
- Endo – DM, thyroidal changes



Medications That Can Interfere With Sleep



Antiarrhythmic

Anticonvulsants

Antihistamines

Appetite suppressants

Benzodiazepines

Bronchodilators

Caffeine

Carbidopa/levodopa

Corticosteroids

Diuretics

Decongestants

Estrogen

Lipophilic beta blockers

Monoamine oxidase inhibitors

Nicotine

Pseudoephedrine

SSRI's

Sedatives

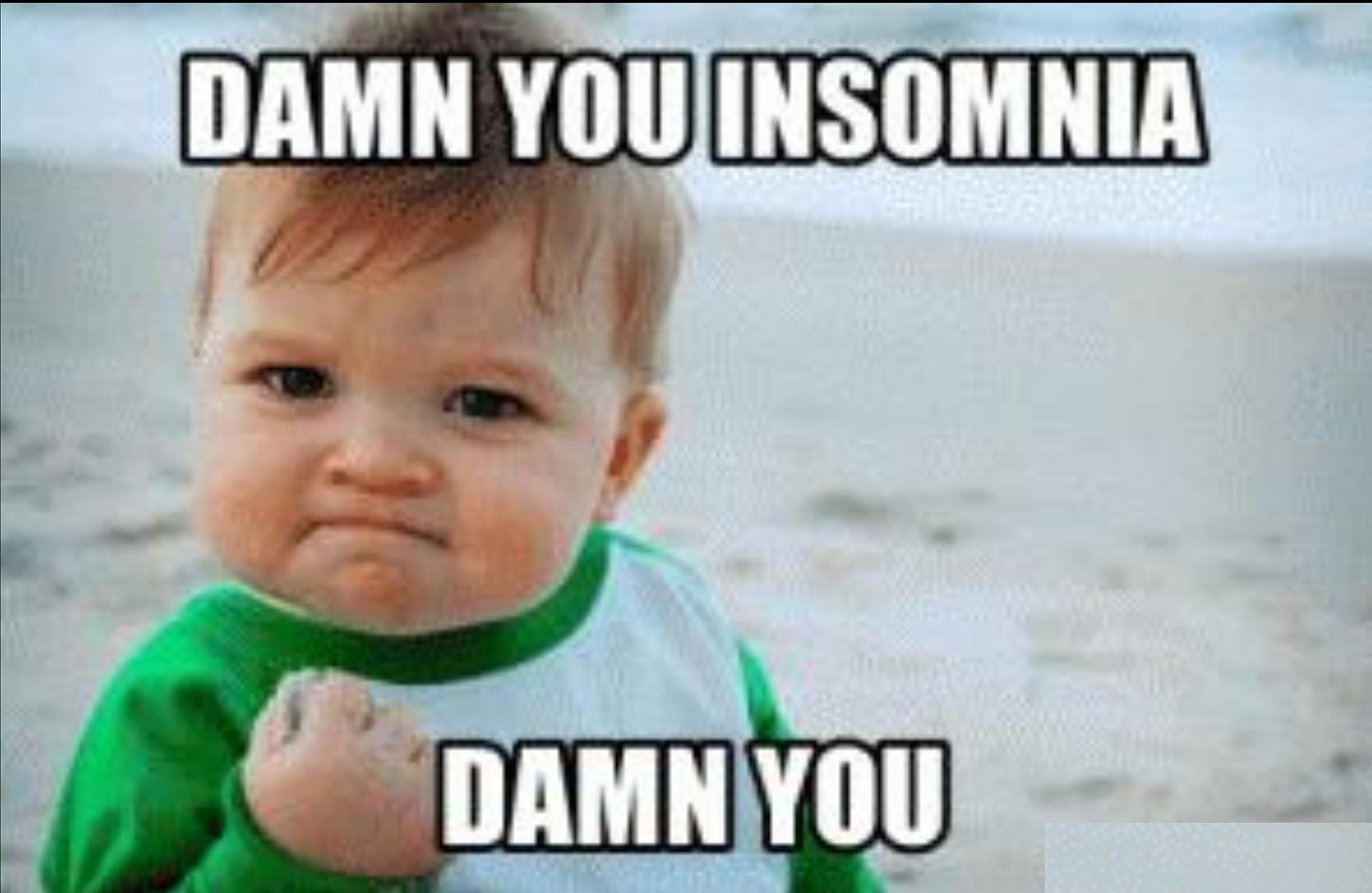
Statins

Sympathomimetics

Tetrahydrozoline

Thyroid hormones

Tricyclic antidepressants



DAMN YOU INSOMNIA

DAMN YOU

Hyperarousal

- Elevated heart rate
- Increased body and brain metabolic rate
- Elevated core body temperature
- Increased beta and gamma electroencephalographic features
- ↑ nighttime cortisol
- ↓ serum melatonin
- Over activation of the hypothalamic-pituitary-adrenal axis



Inflammation

- Bi-directionally associated with chronic inflammation
-  levels of inflammatory markers





Insomnia

Decrease wakefulness

Increase sleepiness

CBT Stress reduction
Breathwork Muscle relaxation

Medications Supplements
Sleep restriction Herbs

Sleep





Pharmacotherapy

- Quickest approach to improve sleep latency
- **Absence** of data regarding long-term efficacy
- Long-term use can result in tolerance, dependence, and rebound insomnia
- **No data** suggest sustained improvement when medication is withdrawn

Behavioral therapy



Minimal side effects.

Sustained improvement documented from
6 months to 2 years.



Not quick.

Takes commitment.

Requires behavior change.

	Pharmacotherapy	Behavioral Therapy
Sleep Latency	-30%	-43%
Awakenings	-1	-1
Wake Time After Sleep	-46%	-56%
Total Sleep Time	+12%	+6%
Sleep Quality	+20%	+28%



Meta-analysis 2102 pts with 5 hours of therapy time

Cognitive Restructuring

- I should sleep at least 8 hours every night.
- I should fall asleep quickly.
- I should always sleep through the night.
- I can and must get myself to sleep.
- I should just rest in bed if I cannot sleep.
- I will have a terrible day if I do not sleep well.



Bed Noise

- Dark room
- Cool temperature (68° or less)
- Beside clocks – turn off or turn around
- Work free zone – use for sleep and sex
- Do not watch TV, use computer, read in the bedroom



3:33

Bed Noise



- Reduce light exposure for 1-2 hours before sleep
- Regular sleep/wake cycle (even on weekends)
- No pets in the bed
- At least 5 hours in bed*
- Peace with your sleep partner
- Pesticide laden/synthetic/off gassing of bedding

3:33

Body Noise

- Manage all comorbid conditions, especially other sleep disorders, depression, and chronic pain
- Add some kind of movement every day but not within 4 hours of bedtime
- Avoid large meals at the end of the day



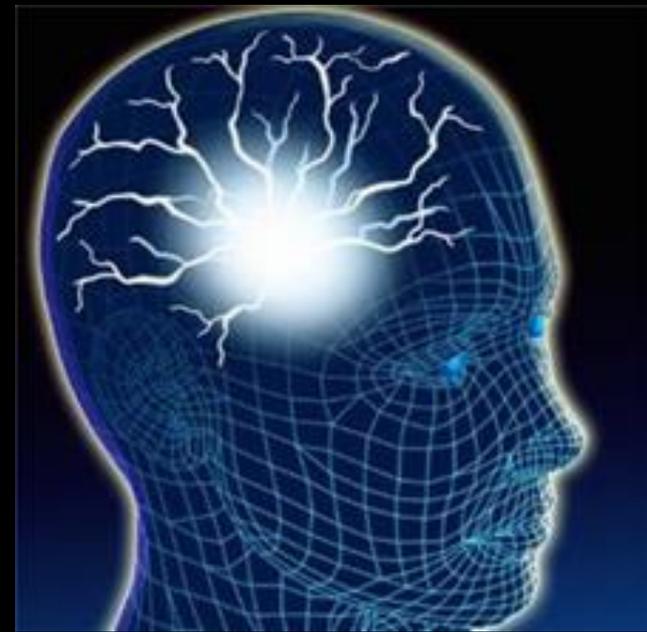
Body Noise

- Gradually reduce caffeine intake to zero over 2 weeks
- Stop alcohol and tobacco use
- Avoid naps
- Manage circadian rhythms



Mind Noise

- Go to bed only when sleepy
- No clock watching
- Get out of bed after 15-20 min and engage in a restful activity. Return when sleepy. Repeat.
- Use the bedroom for sleep and sex only



Mind Noise

- Relaxation practices and rituals*
- Practice “letting go of waking”
- Try to recall dreams and write them down
- Limit exposure to stressful imagery
books/tv/computer/radio



Relaxation Practices

Autogenic training

Biofeedback

Hypnosis

Meditation

Repetitive Focus

Breathwork

Progressive Muscle

Relaxation

Guided imagery

Relaxation Breath (4-7-8 Breath)

1. Place the tip of your tongue against the ridge behind your front teeth and exhale completely through your mouth.
2. Inhale through your nose for a count of 4.
3. Hold your breath for a count of 7.
4. Exhale through your mouth with a swooshing sound to the count of 8.
5. Repeat this cycle three more times for a total of four breaths.

The ratio of 4:7:8 is key, not the actual time spent on each breath cycle. Practice at least twice daily, beginning with no more than four breath cycles at one time for the first month and increasing to eight breath cycles afterward if desired. This exercise can be used to increase pre-sleep relaxation and to facilitate sleep onset in bed.

BSN
5.7.12

Progressive Muscle Relaxation

- Learn to relax one muscle at a time
- Contract each muscle group one at a time for one to two seconds and then relax
- Can be repeated for up to 45 minutes

Relaxation Response

- Eyes closed
- Relaxed abdominal breathing pattern established
- Relaxation is allowed to spread throughout the body
- Can be practiced in and out of bed to reinforce response

Guided Imagery

- Can help facilitate the relaxation response
- Easier (initially) to be guided than self-directed
- Beleruth Naparstek - Google “Beleruth” and “Kaiser” to find a free link

Cognitive Behavioral Therapy

- Usually 6-12 sessions over a number of weeks
- Very effective
- Limitations include cost, limited resources

Mindfulness Sleep Induction Technique

1. Begin with abdominal breathing

Place one hand on your chest and the other on your abdomen. When you take a deep breath, the hand on the abdomen should rise higher than the one on the chest. This insures that the diaphragm is expanding, pulling air into the bases of the lungs. (Once you have this mastered, you don't have to use your hands).

2. Take a slow deep breath in through your nose for a count of 3-4 and exhale slowly through your mouth for a count of 6-7. (Exhalation should be twice as long as your inhalation).

Allow your thoughts to focus on your counting or the breath as the air gently enters and leaves yours nose and mouth.

If your mind wanders, gently bring your attention back to your breath.

3. Repeat the cycle for a total of 8 breaths.

4. After 8 breaths, change your body position and repeat 8 breaths

It is rare that you will complete 4 cycles of before falling asleep.

Other options

- Tai Chi - especially for older adults
- Exercise training – especially for older adults



Sleep Restriction Therapy

Limiting time in bed to increase efficiency.

- Not fewer than 5 hours
- Wake time the same every day
- $\text{Total sleep time} \div \text{time in bed} \times 100$
- Calculation done weekly
- When sleep efficiency > 90 , increase time in bed by 15-20 minutes
- Caution with seizure d/o, bipolar disorder and parasomnias as it may make these conditions worse

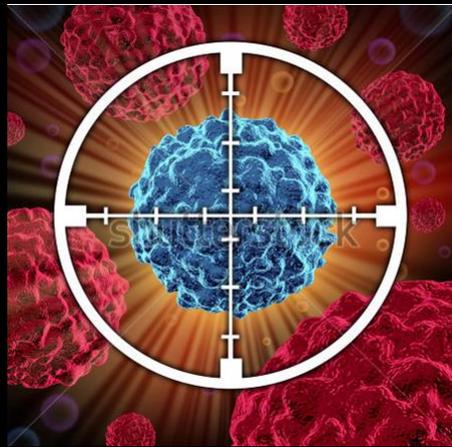
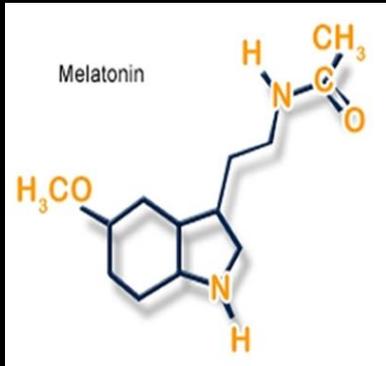
Regulation of Circadian Rhythms

- Use phototherapy, with timed exposure to light and darkness.
- Maintain a regular sleep-wake pattern.
- Simulate dusk by dimming the lights or using blue blocker technology 1 to 2 hours before sleep.
- Supplement with melatonin.
- Sleep in total darkness.

Supplements



Melatonin



Melatonin



- Mediates sleep and dreaming
- Decreases nocturnal body temperature
- Anti-inflammatory, immune-modulating, and free-radical scavenging effects
- Suppressed with advancing age
- Suppressed by common substances and medications (e.g., caffeine, nicotine, alcohol, beta blockers, diuretics, calcium channel blockers, and over-the-counter analgesics)

Melatonin

- Oral, sublingual, and transdermal immediate or sustained-release formulations. Sublingual MT can avoid first-pass liver metabolism, thereby likely resulting in more reliable serum levels
- Sustained-release forms are more likely to maintain effective levels throughout the sleep period due to short $\frac{1}{2}$ life (0.5-2 hours)

Dosage: 0.3 to 0.5 mg for adults



Safety profile

Generally safe. One meta-analysis found adverse effects uncommon and more likely with high doses

Kava (Piper methysticum)

- Effective for the treatment of generalized anxiety
- Helps when tapering off benzodiazepines
- Used for insomnia for its anxiolytic properties



Safety profile

Banned in the UK, Germany, Austria and France due to hepatotoxicity

Valerian Root (*Valeriana officinalis*)

- Mixed data on effectiveness on sleep
- Non-addictive, no withdrawal symptoms on discontinuation
- May require weeks of nightly use before producing an effect



Preparation

Whole powdered root and an aqueous or ethanolic extract standardized to 0.8% valerenic acids.

Dosage

For adults: 300 to 900 mg standardized extract of 0.8% valerenic acid or as a tea of 2 to 3 g of dried root steeped for 10 to 15 minutes and taken 30 to 120 minutes before bedtime for 2 to 4 weeks to assess effectiveness.

Safety profile

Possible sedation. Caution should be exercised during pregnancy or in patients with a history of liver disease. Taper slowly to avoid rebound insomnia.

Hops (*Humulus lupulus*)

- German Commission E Monographs listed hops as approved for insomnia
- Modest hypnotic effect for a valerian-hops combination
- May have antispasmodic properties that can promote relaxation.
- Additional evidence suggests that hops may be beneficial in alleviating hot flashes and other menopausal symptoms.



Dosage

Prescribe 5:1 ethanolic extract, one-half to one dropper full, 30 to 60 minutes before bedtime.

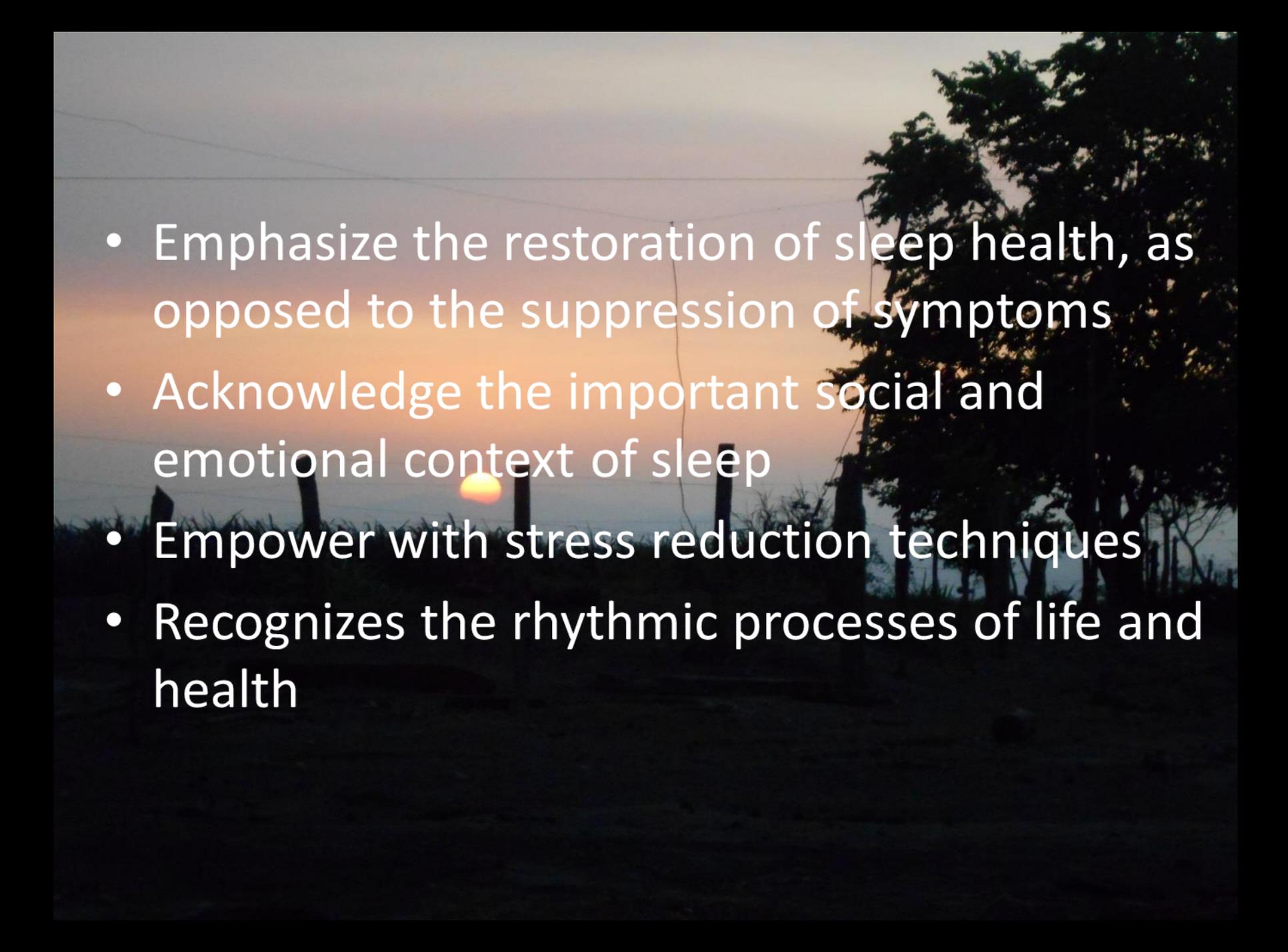
Precautions

Although no evidence indicates toxicity in medicinal dosages, avoiding the use of hops in pregnancy may be advisable.

**INSOMNIA:
BECAUSE SLEEP IS
FOR THE WEAK AND
THE SANE.**

Prevention Prescription

- Preventing insomnia by intentionally maintaining healthy sleep is considerably less daunting than treating it.
- Recognize the value and joy of sleep.
- Attend to and journal dreams.
- Engage in relaxation practices daily.
- Obtain adequate regular exercise.
- Obtain daily exposure to morning light.
- Limit the use of stimulants and sedatives.
- Maintain a regular sleep-wake schedule.
- Dim lights or use blue blocker tools 1 to 2 hours before sleep.
- Sleep in total darkness or use a sleep mask.
- Consider low-dose melatonin replacement therapy.

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- Emphasize the restoration of sleep health, as opposed to the suppression of symptoms
 - Acknowledge the important social and emotional context of sleep
 - Empower with stress reduction techniques
 - Recognizes the rhythmic processes of life and health



A good laugh
and a long sleep
are the
two best cures
for anything

Irish Proverb

Good night.

Resources

- Belleruth Naparstek – FREE guided imagery downloads. Google “Belleruth Naparstek and Kaiser”. Click on the link that starts with “podcasts”
- Rubin Naiman PhD: www.drnaiman.com Guided imagery, books.
- Hartford Hospital Behavioral Health - CBT program specifically for insomnia
- BestRest formula by Pure Encapsulations
- www.fammed.wisc.edu University of Wisconsin has fantastic patient handouts on insomnia and the IM approach to many other issues