Insomnia

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Learning Objectives

- Define Insomnia Disorder
- Review Behavior Interventions
- Discuss Pharmacological Options

Insomnia Disorder

- Difficulty initiating sleep
- Difficulty maintaining sleep
- Waking up earlier than desired
- Resistance to going to bed on appropriate schedule
- Difficulty sleeping without parent or caregiver intervention

Insomnia Disorder

- Fatigue/malaise
- Attention, concentration or memory impairment
- Impaired social, family, occupational, or academic performance
- Mood disturbance/irritability
- Daytime Sleepiness

Insomnia Disorder

- Behavioral Problems
- Reduced motivation energy/initiative
- Proneness for error/accidents
- Concerns about or dissatisfaction with sleep

Insomnia Disorder

Cannot be explained by inadequate opportunity or inadequate circumstances

Insomnia Disorder

Symptoms occur at least three times a week

Chronic - at least 3 months

Short-term - less than 3 months

Insomnia Disorder

Common
Prevalence 30-50%

Risk factors – older age, previous episodes, family history
Associated – Psychiatric disorders, Medical conditions

Insomnia Disorder

Associated

- Psychiatric disorders – Depression, Anxiety, PTSD, Substance use
- Medical conditions – Pulmonary, Hypertension, Diabetes, Cancer, Chronic Pain, Heart Failure, Neurological disorders

Insomnia Disorder

Substances

- Stimulants – caffeine, ADHD medications, appetite suppressants
- Antidepressants – SSRI, SNRI
- Beta blockers
- Steroids
- Alcohol, tobacco

Insomnia Disorder

Sleep Disorders

- Sleep Apnea
- Restless legs syndrome/periodic limb movements of sleep
- Circadian rhythm sleep-wake disorders

Insomnia Disorder

Assessment

- History
- Sleep Diary/Actigraphy
- Questionnaires
- Sleep Studies

Insomnia Disorder

Treatment

- Behavioral Therapies – First line
- Pharmacologic Treatments

Behavioral Interventions for Insomnia
Case Example

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Goal

Using a clinical case example to illustrate:

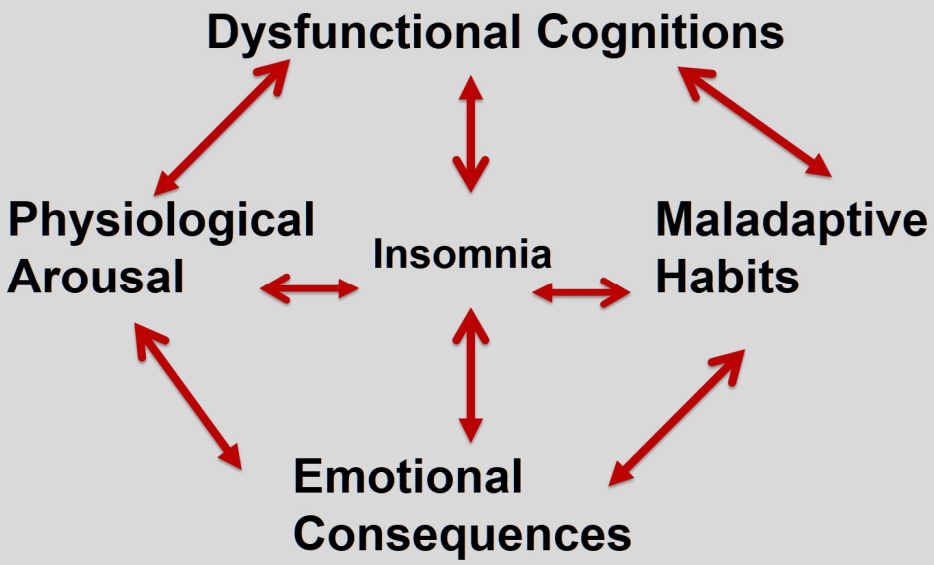
- Basic steps of CBT-I and BBT-I
- That One Size Does Not Fit All

No conflicts of interests to disclose.

Mrs. Luna Soleil

- 70 plus years old, petite, Caucasian, widowed, retired, cisgender female.
- Never a "great sleeper" but last 2 years she "can't sleep at all."
- No RLS, no OSA, no thyroid problems, post menopausal.
- No Hx of Bi-Polar Disorder or ADHD.

Cognitive Behavioral Model Of Insomnia



Morin et al. (1993)

Luna's Sleep Narrative: Physiological Arousal and Emotional Conseqences

With the tears in her eyes she tells you a story of a life revolving around the pursuit of sleep.

She assures you with pride that despite being exhausted she "never, ever takes naps", also almost never drinks caffeine.

Her brother is very upset and her friends are upset that she is no longer participating in social gatherings.

Luna's Sleep Narrative: Habits and Maladaptive Beliefs

She stops watching TV around 9pm. In the evenings she is careful not to get too scared or agitated, she listens to music, sometimes goes for a walk, has a light supper, occasionally has a small glass of wine.

She goes to bed religiously at 10pm and "tries to fall asleep". Takes her 30 to 60 min to fall asleep. She wakes up 3-4 times a night, tosses and turns for long time, eventually falls asleep (or not). She gets out of bed for the day around 7 or 8 am.

Her room is dark and cool.

CBT-I and BBT-I
One Size Does Not Fit All!

1. **Education:** Mechanisms of Sleep, TST, WASO, Sleep Latency, Phases of Sleep.

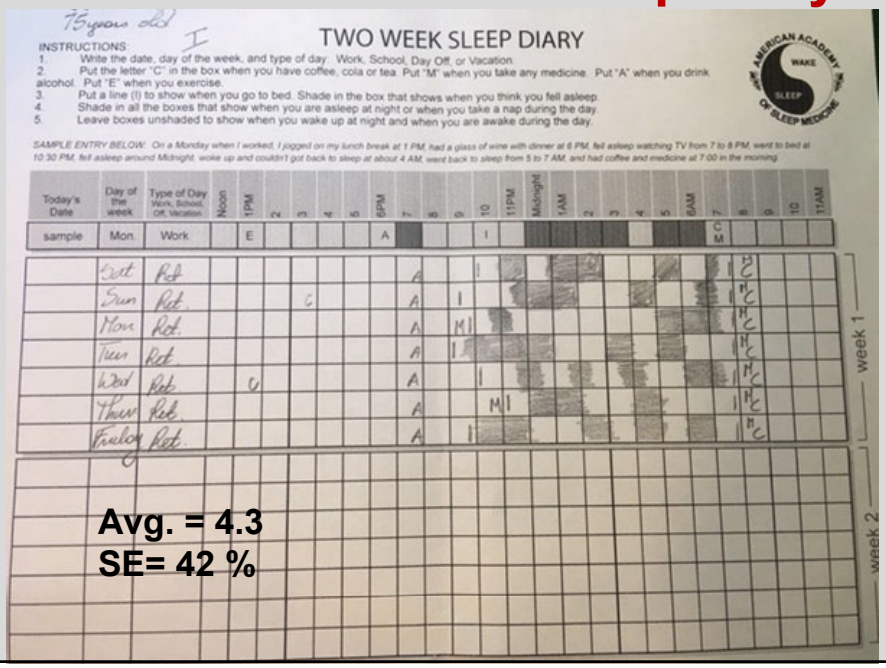
2. **Sleep Restriction**: Sleep Effciency >80%, challange to the life style.

3. **Stimulus Control**: Challenge to self-control.

Best time for…	…for what?
6:45am	*Rise in blood pressure*
7:30am	*Drop in Melatonin secretion*
8:30 am	Likely bowel movement
9:00am	Rise in testosteron levels
10:00am	Peak in alertness
2:30pm	Peak in body coordination
3:30pm	Fastest reaction times
5:00pm	Best muscle and heart performance
6:30pm	Peak in blood pressure
7:00pm	Peak in body temperature
9:00pm	*Melatonin starts flowing*
10:30pm	*Least likely bowel movement*
2:00am	*Deepest Sleep*
4:30am	*Nadir of body temperature*

Circadian Rhythm Counseling

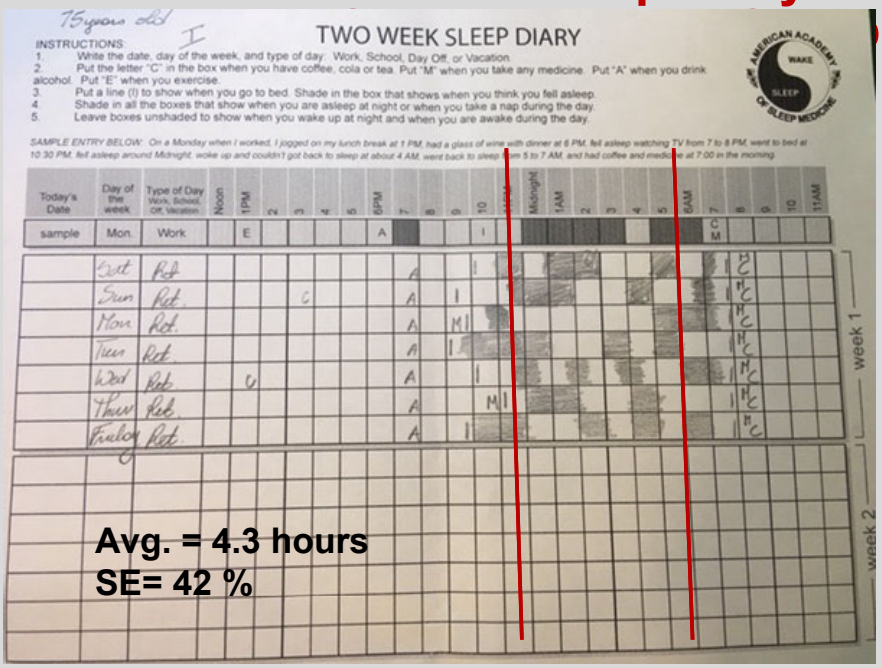
Mrs. Luna Soleil Baseline Sleep Diary - bsln



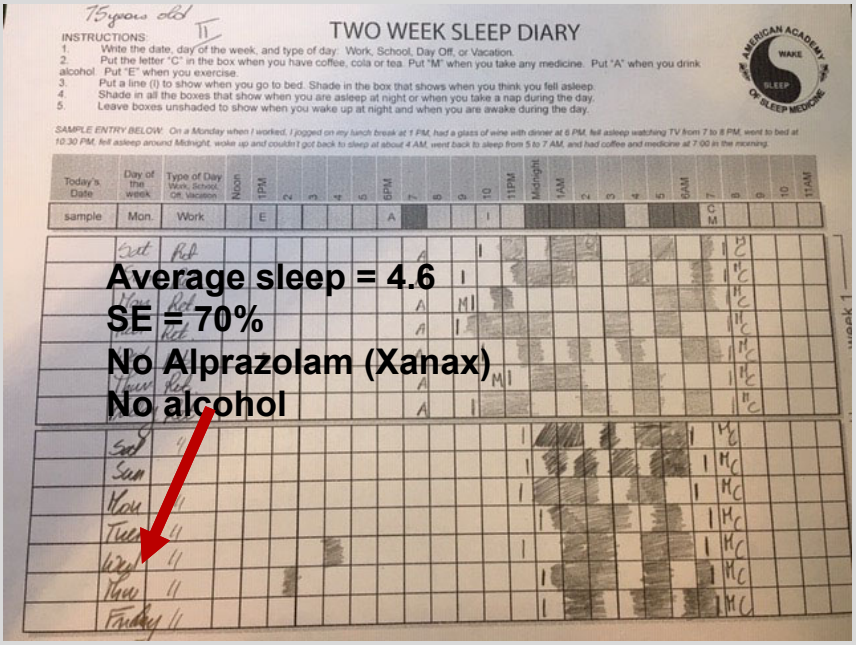
Recommended Sleep Time by the Sleep Foundation (2014)

Stage of Life/Age	Maximum	Optimal	Minimum
Newborn 0-3 months	18-19	14-17	11-13
Infant 4-11 months	16-18	12-15	10-11
Toddler 1-2 Years	15-16	11-14	9-10
Preschooler 3-5 Years	14	10-13	8-9
School Age 6-13 Years	12	9-11	7-8
Teen 14-17 Years	11	8-10	7
Young Adult 18-25 yrs	10-11	7-9	6
Adult 26-64 Years	10	7-9	6
Older Adult 65 +	9	7-8	5-6

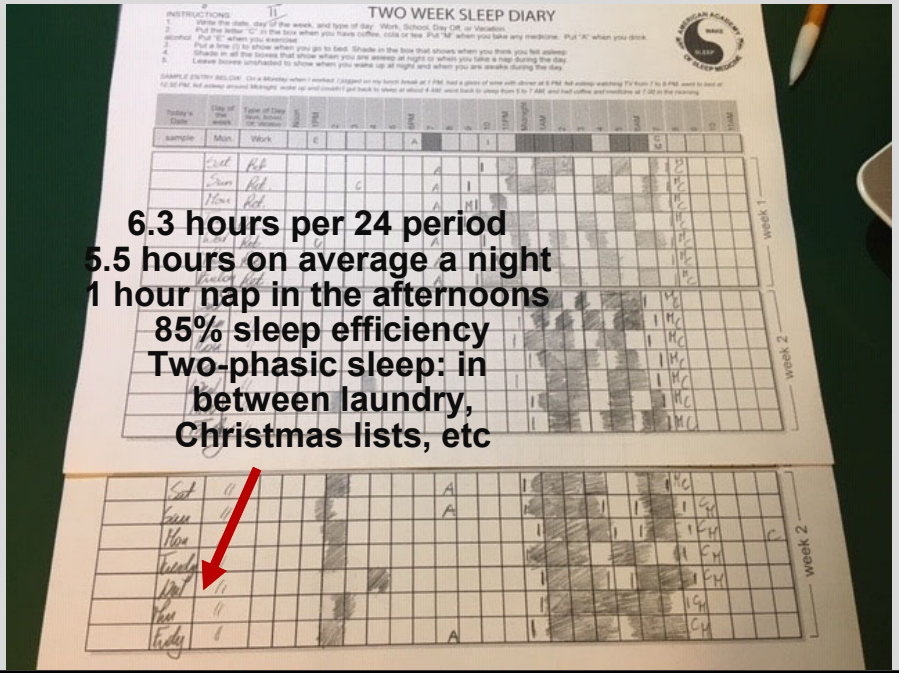
Mrs. Luna Soleil Baseline Sleep Diary - bsln



Mrs. Soleil 2nd Sleep Diary



Mrs. Soleil 3rd sleep Diary



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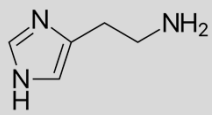
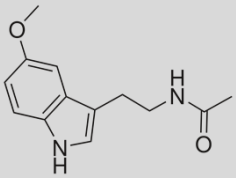
Pharmacologic Treatments

2nd line treatment

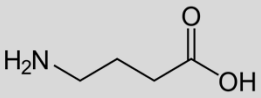
Ideally not the only treatment



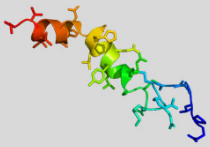
Histamine



Melatonin

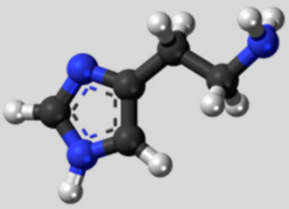


GABA



Orexin

Histamine



Doxepin

- Tricyclic antidepressant
- At low dose, selective H1 antagonist
- Dosage - 3-6mg
- Improved sleep by 25-38 min of total sleep time (TST)
- Pro – less abuse potential
- Cons – TCA (anticholinergic, QT prolongation)

Melatonin

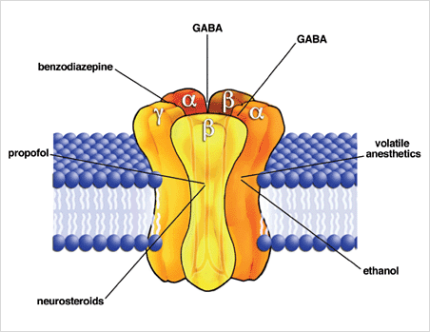
Ramelteon

- Melatonin receptor agonist, 6x more than melatonin supplements
- Dosage – 8mg
- Improved sleep latency 4.6min, total sleep time 7.3 min
- Pro – not controlled
- Con – cost, insurance coverage, small effect size

Benzodiazepine Receptor Agonists (BZRA)

Nonbenzodiazepine benzodiazepine receptor agonists

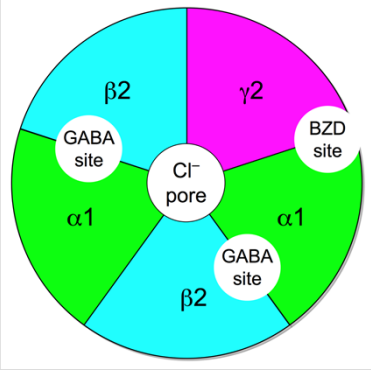
Benzodiazepine



Benzodiazepine Receptor Agonists (BZRA)

Nonbenzodiazepine benzodiazepine receptor agonists

Benzodiazepine



Nonbenzodiazepine BZRA

Zolpidem

Eszopiclone

Zaleplon

Nonbenzodiazepine BZRA

Zolpidem

- positive allosteric modulator
- intermediate half-life 1.5 to 4.5 hours
- Dosage 5-10mg
- tablet, controlled release, sublingual, oral spray
- Pro- improved TST 29 min
- Con – complex sleep behaviors, high risk medication (Beers Criteria), schedule IV

Nonbenzodiazepine BZRA

Eszopiclone

- longer half-life 6hrs
- Dosage 1-3 mg
- Pro- sleep maintenance, recent meta-analysis
- Con – complex sleep behaviors, high risk medication (Beers Criteria), schedule IV

Nonbenzodiazepine BZRA

Zaleplon
- positive allosteric modulator
- shorter half-life 1 hr
- Dosage 5-20 mg
- Pro- reduced sleep latency 10 min, middle of the night awakenings
- Con – complex sleep behaviors, high risk medication (Beers Criteria), schedule IV

BZRA

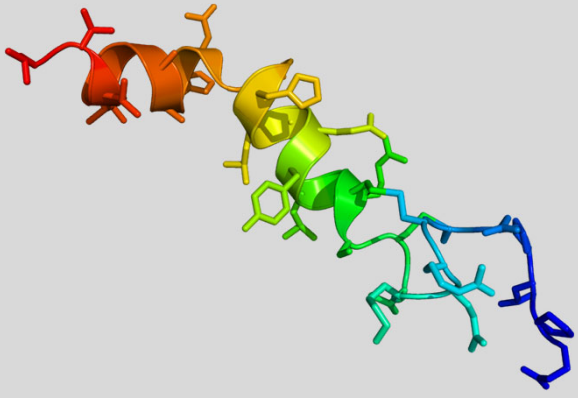
Estazolam
Flurazepam
Quazepam
Temazepam
Triazolam

BZRA

Positive allosteric modulator
Tend to have longer half lives, up to 160 hours
Pro- Temazepam improved sleep latency 37min TST 99 min
Con - Risk of cumulative effects, risk with opioids, dependence, addiction, withdrawal

Dual Orexin Receptor Antagonists

Suvorexant
Lemborexant
Daridorexant



Dual Orexin Receptor Antagonists

Suvorexant

- Antagonist at orexin receptors
- Decreases wakefulness
- Dosage 10-20mg
- Pro – lower abuse potential, different target
- Con – contraindicated in narcolepsy, schedule IV, complex sleep behaviors, cost

Dual Orexin Receptor Antagonists

Lemborexant

- Dosage 5-10mg
- Pro – improved sleep onset and maintenance vs zolpidem older adults (>55yo), less risk of withdrawal or rebound
- Con – contraindicated in narcolepsy, schedule IV, complex sleep behaviors, cost

Dual Orexin Receptor Antagonists

Daridorexant
- Dosage 25-50mg
- Pro – improved sleep older adults (>65yo)
- Con – contraindicated in narcolepsy, schedule IV, complex sleep behaviors, cost

Summary

Insomnia Disorder
- Common with many associations

Treatment
- Behavioral Therapies – First line
- Pharmacologic Treatments