



UW PACC

Psychiatry and Addictions Case Conference

UW Medicine | Psychiatry and Behavioral Sciences

COGNITIVE BEHAVIORAL TREATMENT OF INSOMNIA (CBTI)

PART I: UNDERSTANDING SLEEP AND INSOMNIA

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DISCLOSURES

We have no conflicts of interest to disclose relevant to this presentation.

DEFINING AND DIAGNOSING INSOMNIA

- Difficulty initiating or maintaining sleep
- Difficulty functioning during the day (includes distress regarding insomnia)
- Frequency and duration definitions
 - ≥ 3 months duration
 - Frequency of difficulty with sleep onset, middle-of-the-night awakening, or awakening too early
- Definitions sometimes include nonrestorative sleep
- Insomnia is a *subjective* problem



PHARMACOTHERAPY FOR INSOMNIA - OBJECTIVES

- Evaluate data of efficacy of CBT-I vs pharmacotherapy
- Review current guidelines on pharmacotherapy for insomnia
- Categorize insomnia medications, their specific indications and most common side effects



CBTI VS USUAL TREATMENT IN CANCER PATIENTS

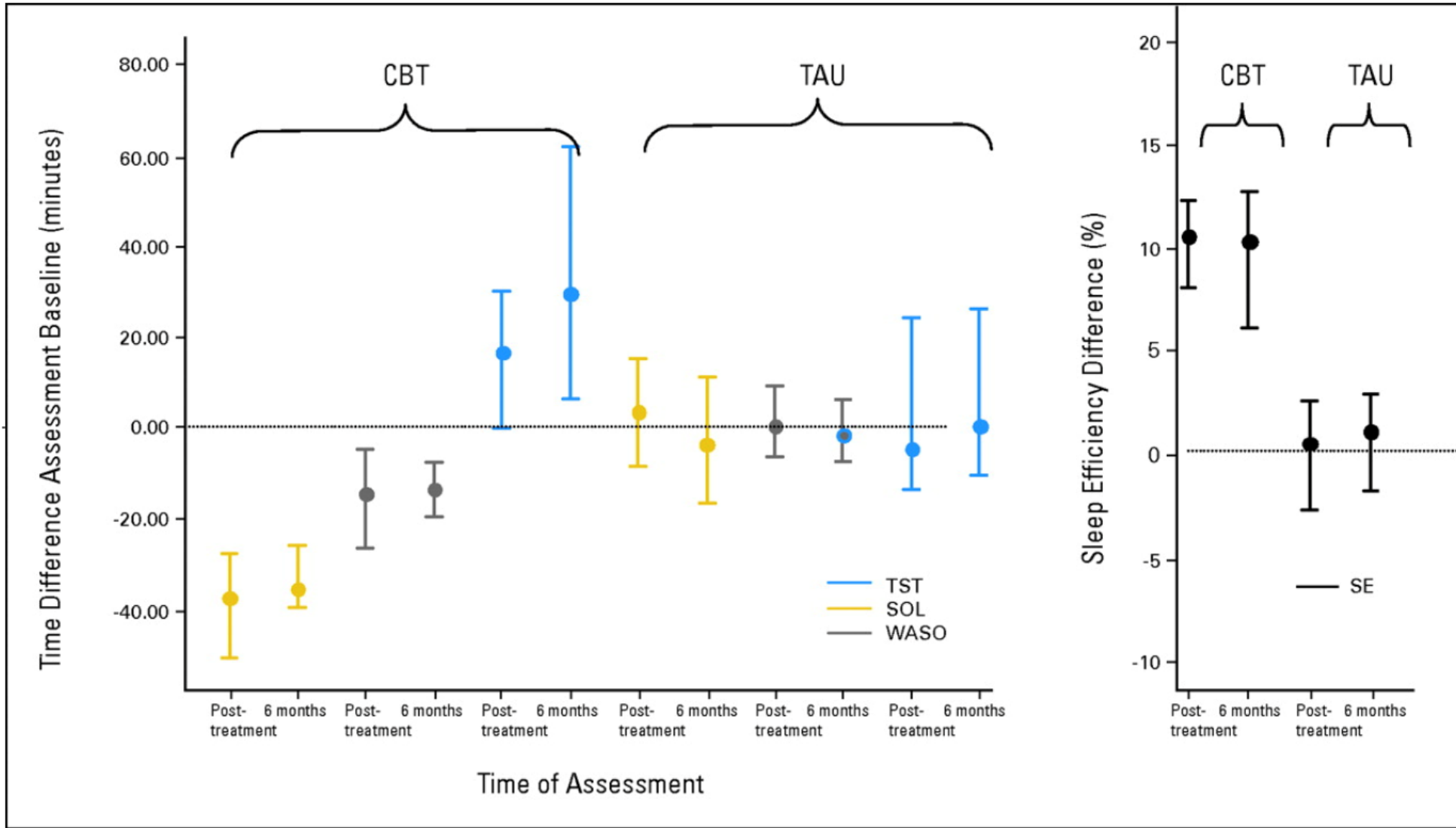
Randomized Controlled Clinical Effectiveness Trial of Cognitive Behavior Therapy Compared With Treatment As Usual for Persistent Insomnia in Patients With Cancer

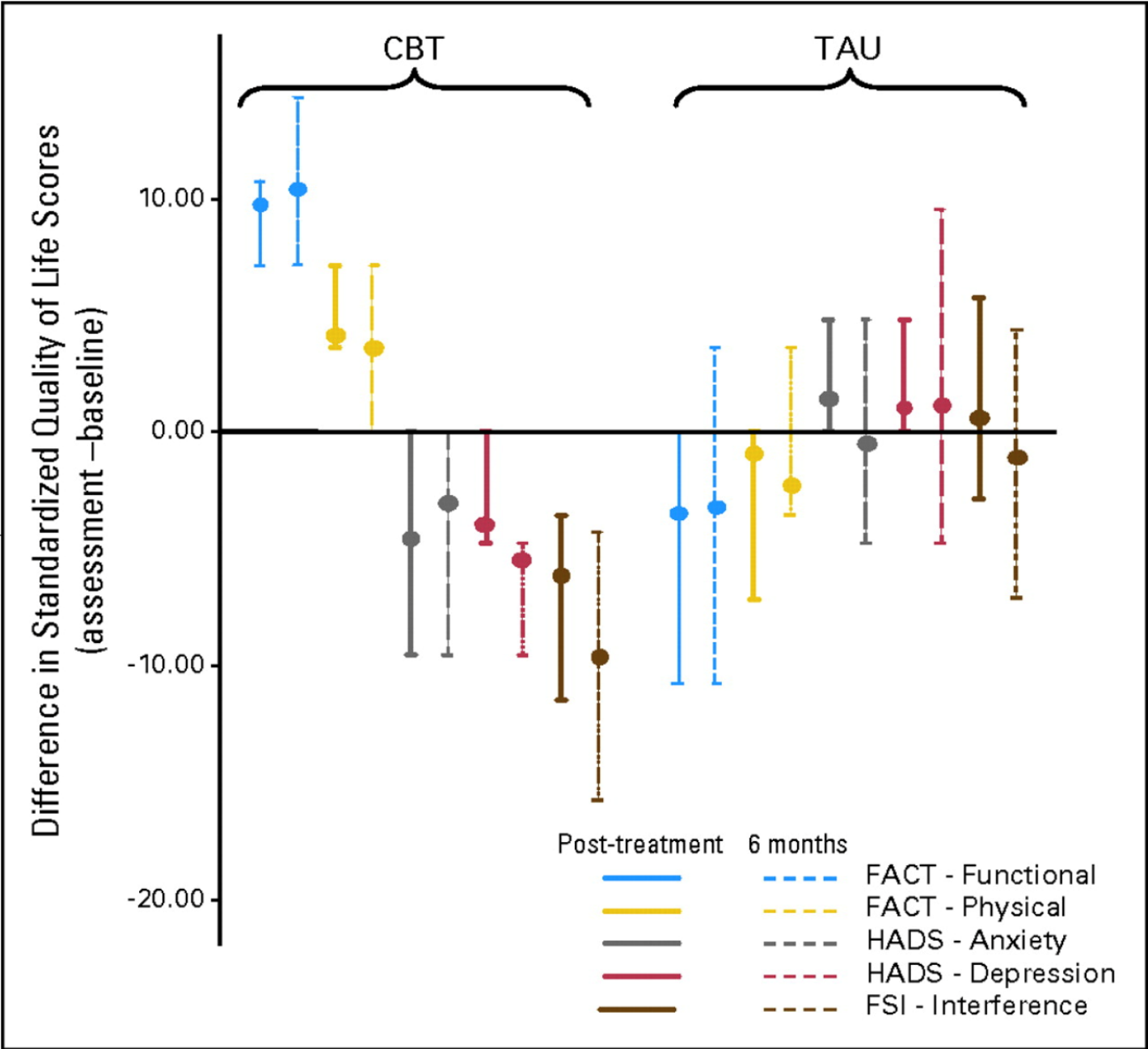
Authors: [Colin A. Espie](#), [Leanne Fleming](#), [James Cassidy](#), [Leslie Samuel](#), [Lynne M. Taylor](#), [Craig A. White](#), [Neil J. Douglas](#), [Heather M. Engleman](#), [Heidi-Louise Kelly](#), and [James Paul](#) | [AUTHORS INFO & AFFILIATIONS](#)

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HIGHLIGHTS

- 150 posttreatment cancer patients assigned randomly to a 5 week CBTi intervention vs treatment as usual (TAU)
- They had to have a diagnosis of breast, prostate, bowel, or gynecological cancer, and to satisfy diagnostic criteria for chronic insomnia
- They trained four experienced cancer nurses with a short CBT course, apprenticeship, learning opportunities with an experienced clinical psychologist





AMERICAN COLLEGE OF PHYSICIANS GUIDELINES

- All patients with chronic insomnia should receive CBTi as the initial treatment intervention. (STRONG)
- Shared decision-making approach to determine if pharmacotherapy should be employed for those who did not achieve adequate response with CBTi. (WEAK)
- Overall insufficient evidence to conclude the overall efficacy of pharmacotherapy for insomnia (BZDs, trazodone, melatonin).

CATEGORIES OF MEDICATIONS

- Sleep specific medications (BZD, non-BZD, DORAs)
- Medications with sedating side effects (antidepressants, antipsychotics, anticonvulsants, antihistamines)
- Melatonin agonists
- OTC preparations (Valerian, melatonin, 5HTP, L-tryptophan)

SLEEP SPECIFIC MEDICATIONS

- Benzodiazepines
 - Temazepam (Restoril)
 - Triazolam
- Z-drugs (BZD receptor agonists)
 - Zaleplon (Sonata)
 - Zolpidem (Ambien)
 - Eszopiclone (Lunesta)
- Dual orexin receptor antagonists (DORAs)
 - Suvorexant (Belsomra)
 - Lemborexant (Dayvigo)

SLEEP SPECIFIC MEDICATIONS

- Ideally only for short term use
- A/Es:
 - Somnolence
 - Parasomnias/complex sleep behaviors
 - Risk of falls in older adults (avoid in age >65)
 - Memory impairment
 - Respiratory depression (BZDs)
 - Dependence
 - Rebound insomnia

MEDICATIONS WITH SEDATING EFFECTS

- Antidepressants

- Doxepin
- Mirtazapine
- Amitriptyline
- Trazodone

- Antipsychotics

- Olanzapine
- Quetiapine

- Anticonvulsants

- Gabapentin

- Off label use
- A/E: grogginess, worsening RLS, weight gain
- Can consider use in those with a comorbid condition, with treatment of insomnia as a secondary effect

***Trazodone not recommended by the AASM

MEDICATIONS WITH SEDATING EFFECTS

- Antihistamines
 - Diphenhydramine (Benadryl)
 - Doxylamine (Unisom)
 - Hydroxyzine (Atarax, Vistaril)
 - Not recommended for insomnia
 - A/E: grogginess, worsening of RLS, possible cognitive decline with long term use

OTC PREPARATIONS

- Valerian, chamomile, 5HTP, l-tryptophan, ashwaganda, lavender
- Controversial, inconsistent
- Avoid tryptophan, 5HTP in those on serotonergic medications

MELATONIN

- Three studies addressed the efficacy of melatonin 2 mg.
- These investigations included only older adults (> 55 years).
- The overall quality of evidence was very low - the minimal overall evidence available was weakly against melatonin's efficacy in improving sleep onset, maintenance, or quality.
- Plus not enough data to determine adverse effects.

ROLE OF MELATONIN

- Circadian rhythm disorders (low dose 0.5 - 1 mg)
- Prolonged release formulations in older adults (>55 years) in whom other medications are contraindicated or there is a concern for side effects.
- Children, especially autism spectrum disorder

- A/E: headaches, grogginess, vivid dreams/nightmares

Sleep onset	Sleep maintenance	Sleep onset AND maintenance	Do not use
<ul style="list-style-type: none"> - Zaleplon (10 mg) - Triazolam (0.25 mg) - Ramelteon (8 mg) 	<ul style="list-style-type: none"> - Suvorexant (10, 15/20, and 20 mg doses) - Doxepin (3 and 6 mg) 	<ul style="list-style-type: none"> - Eszopiclone (2 and 3 mg) - Zolpidem (10 mg) - Temazepam (15 mg) 	<ul style="list-style-type: none"> - Trazodone (50 mg) - Tiagabine (4 mg) - Diphenhydramine (50 mg) - Melatonin (2 mg) - Tryptophan (250 mg) - Valerian (variable doses)

**All of these recommended for short term use only

TAKE AWAYS



- CBTi is gold-standard and should be first line
- Combination of CBTi with medications more effective than medications alone
- Avoid medications until other sleep disorders are ruled out
- Broad categorization and indications can help guide clinical choices

PHARMACOTHERAPY FOR INSOMNIA - REFERENCES

- Matheson E, Hainer BL. Insomnia: Pharmacologic Therapy. Am Fam Physician. 2017 Jul 1;96(1):29-35. PMID: 28671376.
- Sateia MJ, Buysse DJ, Krystal AD, Neubauer DN, Heald JL. Clinical Practice Guideline for the Pharmacologic Treatment of Chronic Insomnia in Adults: An American Academy of Sleep Medicine Clinical Practice Guideline. J Clin Sleep Med. 2017 Feb 15;13(2):307-349. doi: 10.5664/jcsm.6470. PMID: 27998379; PMCID: PMC5263087.

RESEARCH EVIDENCE FOR CBT-I

- Conclusively demonstrated that CBT-I is effective in treating insomnia across many different settings and patient populations
- Stimulus control and time-in-bed restriction are the most important components of CBT-I
- Dissemination of CBT-I has been slow

Vitiello, McCurry, & Rybarczyk, 2013



INDICATIONS FOR CBT-I

- Indications:
 - Insomnia symptoms + maladaptive behaviors or conditioned arousal
- Insomnia defined as trouble initiating or maintaining sleep
 - Average sleep latency
 - Wake after sleep onset (WASO)
 - Early morning awakenings

TOOLS FOR ASSESSMENT AND TREATMENT

- Insomnia Severity Index (Morin et al, 2011)
- Epworth Sleepiness Scale (Johns, 1991)
- STOP-BANG Screening for Sleep Apnea
- Sleep Diary
- Initial Interview

THE SLEEP DIARY

Fundamental to assessing progress and identifying problems

Based on patient recall of the events of the night (and day) before

Compliance with keeping it is good when it is assigned with care

SLEEP DIARIES

- Consensus Sleep Diary
 - Varying degrees of complexity
 - Provides considerable data (potentially)
 - Various means of calculating the parameters of interest
- Visual Sleep Log
- CBTi Coach App

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
In Bed							
Time to Fall Asleep							
Awake After Sleep Onset							
Time Out of Bed							
Time in Bed TIB							
Total Sleep Time - TST							
Sleep Efficiency							

Week 1			day 1	day 2	day 3	day 4	day 5	day 6	day 7	AVERAGE	
5/1-5/8		sample									
Dates		1/1/2011									
Bedtime (Time went into bed)	Q1_BT	23:30								#DIV/0!	Bedtime
Lights out (Try to go to sleep)	Q2_LO	23:45								#DIV/0!	Lights out
Latency to sleep (minutes to fall asleep)	Q3_SL	30								#DIV/0!	Latency to fall asleep
minutes awake in middle of night (how long awakenings last)	Q5_WASO	60								#DIV/0!	Minutes awake in middle of night
awakening)	Q6a_WT	7:00								#DIV/0!	Wake time
Mins awake too early (how many minutes earlier)	Q6c_EMA	30								#DIV/0!	minutes awake too early
Out of bed (out of bed for the day)	Q7_OB	8:00								#DIV/0!	out of bed for day
	BT	-0.50								#DIV/0!	
	LO	-0.25								#DIV/0!	
	WT	7.00								#DIV/0!	
	OB	8.00								#DIV/0!	
Time in Bed	TIB	8.25								#DIV/0!	Time in Bed
Total Sleep Time	TST	5.75								#DIV/0!	Total Sleep Time
Sleep Efficiency	SE (%)	69.70%								#DIV/0!	Sleep Efficiency

TWO WEEK SLEEP DIARY

INSTRUCTIONS:

(1) Write the date, day of the week, and type of day: Work, School, Day Off, or Vacation. **(2)** Put the letter "C" in the box when you have coffee, cola or tea. Put "M" when you take any medicine. Put "A" when you drink alcohol. Put "E" when you exercise. **(3)** Put a vertical line (|) to show when you go to bed. Shade in the box that shows when you think you fell asleep. **(4)** Shade in all the boxes that show when you are asleep at night or when you take a nap during the day. **(5)** Leave boxes unshaded to show when you wake up at night and when you are awake during the day.

SAMPLE ENTRY BELOW: On a Monday when I worked, I jogged on my lunch break at 1 PM, had a glass of wine with dinner at 6 PM, fell asleep watching TV from 7 to 8 PM, went to bed at 10:30 PM, fell asleep around Midnight, woke up and couldn't get back to sleep at about 4 AM, went back to sleep from 5 to 7 AM, and had coffee and medicine at 7 AM.

Date	Day of the week	Type of Day (Work, School, Day Off, Vacation)	Noon	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Midnight	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM
sample	Mon.	Work		E					A																	

week 1
week 2

24-HOUR SLEEP INTERVIEW

- What time do you get out of bed in the morning? Is it the same on weekends?
- How do you spend your day?
- Do you take naps?
- Do you drink alcohol with dinner? Use cannabis?
- What is your routine before bed?
- What time do you get in bed?
- When do you try to fall asleep?
- How long does it take to fall asleep? What do you think about?
- How often do you wake up during the night?
- What do you do when you wake up during the night?
- Are there environmental disturbances at night?

CONDITIONS REQUIRING REFERRAL TO A SLEEP CLINIC

- Excessive daytime sleepiness
- Sleep-disordered breathing
 - Obstructive sleep apnea (OSA)
 - Central sleep apnea (CSA)
 - Upper airway resistance syndrome (UARS)
 - Obesity hypoventilation syndrome (OHS)
- Restless Legs Syndrome (RLS) or Periodic Limb Movement Disorder (PLMD)
- Circadian Rhythm Disorders
- Parasomnias



SITUATIONS IN WHICH CBTI IS CONTRAINDICATED

- Seizure Disorder
- Bipolar Disorder
- Excessive Daytime Sleepiness (Epworth Sleepiness Scale \geq 11)
- Untreated or suboptimally treated sleep apnea
- Unstable medical conditions
- Unstable psychological conditions
- Active substance abuse (may include heavy drinking)

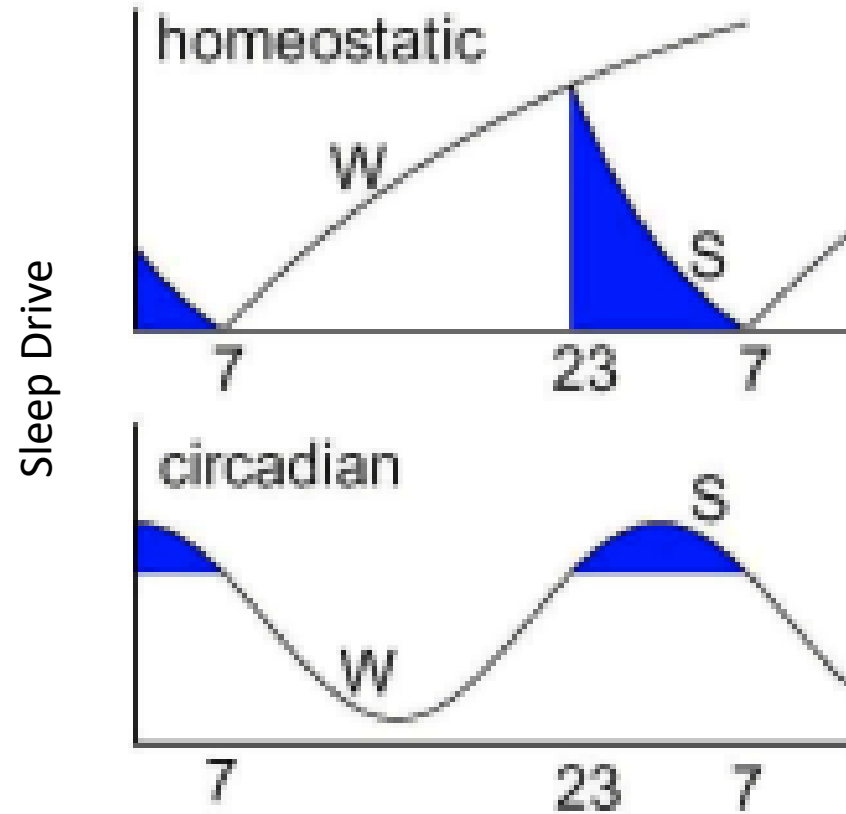
SLEEP – A BRIEF PRIMER



SLEEP IS A FUNCTION OF 3 PROCESSES:

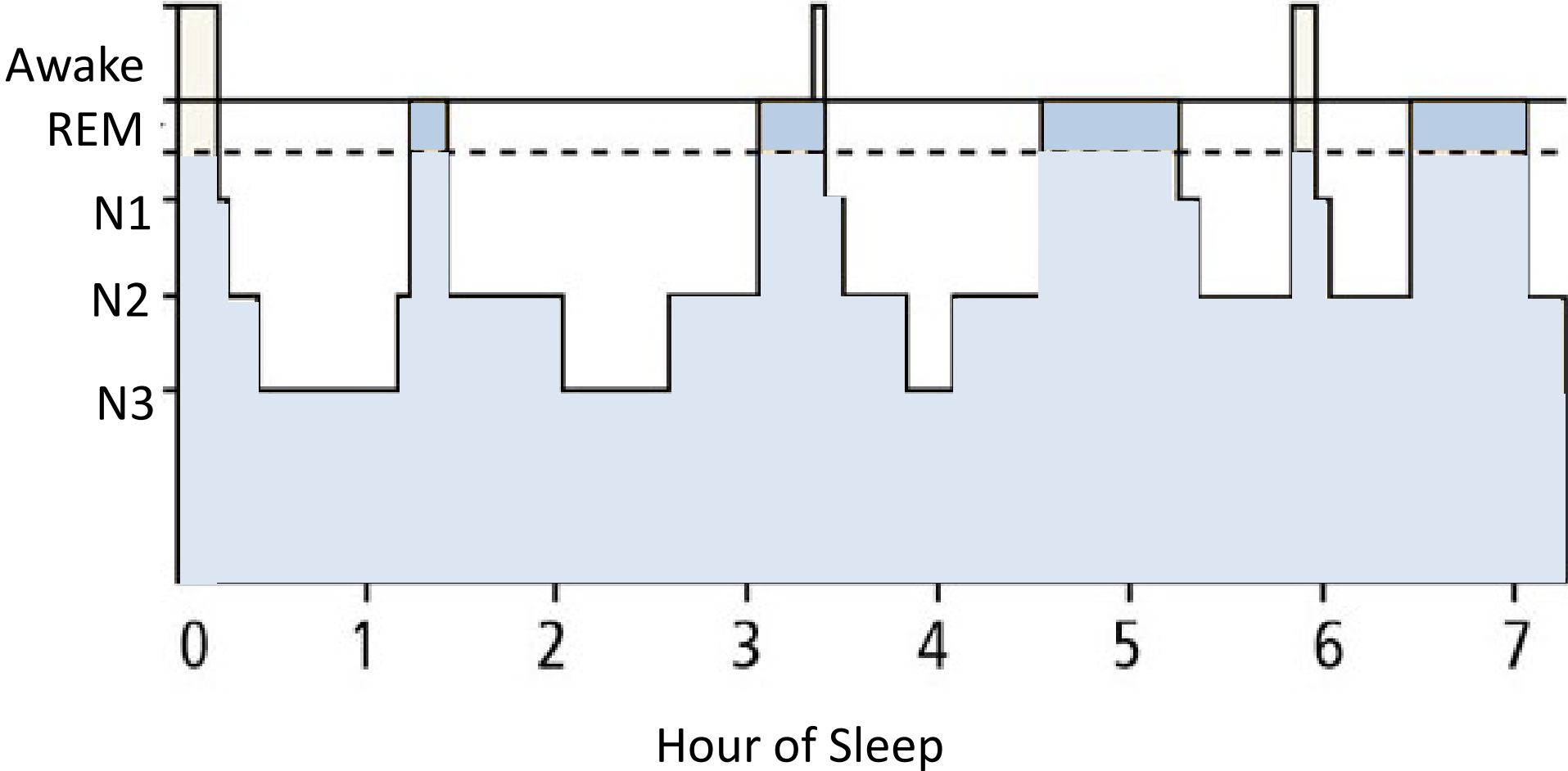
- **Process C** is the Circadian Clock – we sleep best at night
- **Process S** is the homeostatic drive for sleep (called sleep drive, sleep pressure) – everybody sleeps!
- **Arousal level** – too much arousal (physiological, cognitive, or conditioned) can override Process C and Process S
- It is normal to have difficulty sleeping during periods of acute stress
- Social and environmental timekeepers (Zeitgebers) also play a role

TWO-PROCESS MODEL OF SLEEP

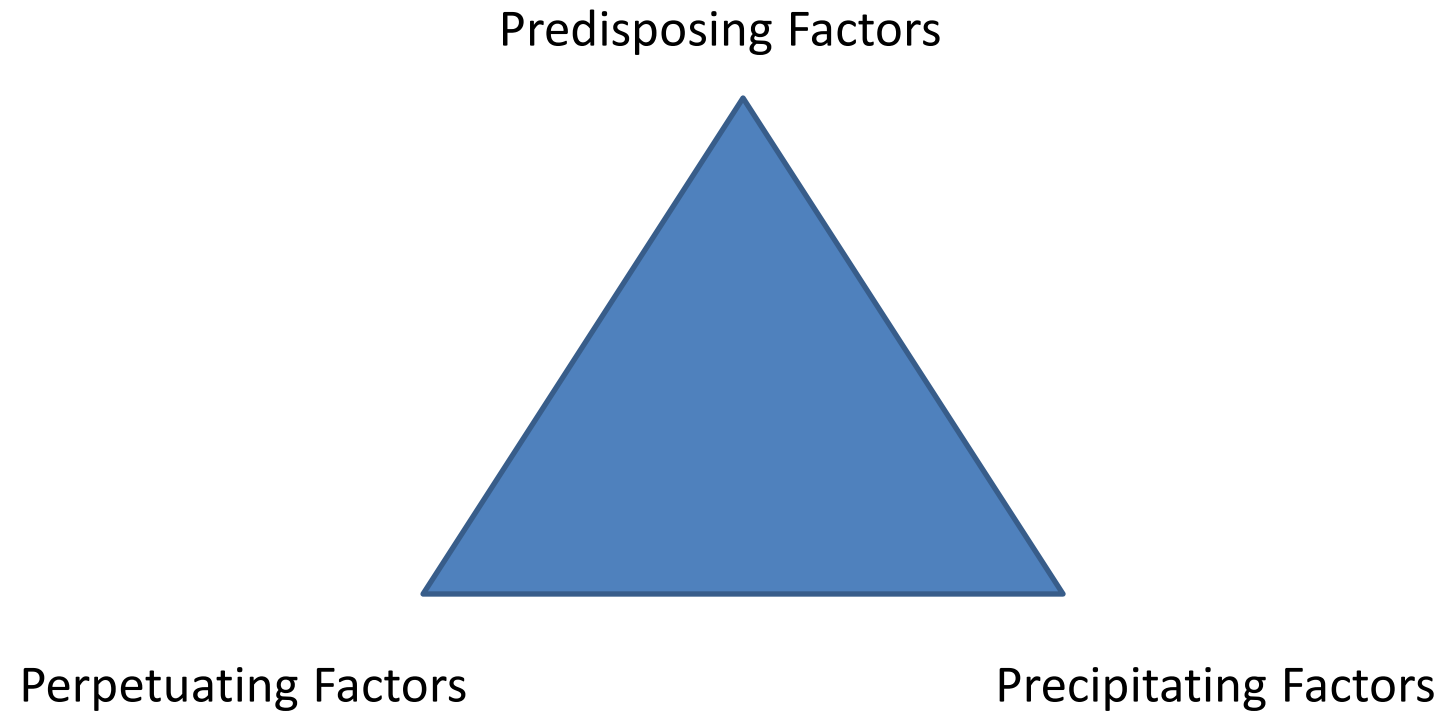


Borbély & Achermann, 1992

SLEEP ARCHITECTURE DURING THE NIGHT



THE “THREE P’S” OF INSOMNIA



Spielman, Caruso, & Glovinsky, 1987

THE “3 P’S” MODEL OF CHRONIC INSOMNIA

- Predisposing factors
 - Anxious disposition
 - Lifestyle factors
- Precipitating factors
 - Acute Stress
 - Other temporary sleep disruptors
- Perpetuating Factors
 - Things people due to address transient disruptions in sleep
 - CBTi addresses perpetuating factors

Ellis et al, 2021

COMPONENTS OF CBTI



- Psychoeducation
- Behavioral Components
- Sleep Hygiene
- Cognitive Components
- Sleep Diary

PSYCHOEDUCATION

- Provide a general description of the role of circadian rhythms and sleep drive in achieving a good night's sleep
- Normalize the experience of insomnia
- Explain sleep requirements vary from person to person, and across the lifespan
- Explain that acute stress is associated with difficulty sleeping
- Find examples of good functioning despite a poor night of sleep
- Describe, if necessary, the pattern of sleep architecture over a typical night

PLEASE CONTACT ME IF YOU HAVE QUESTIONS!!!!

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