

Maryland Behavioral Health Integration in Pediatric Primary Care (MD BHIPP)

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Addressing Sleep Concerns in Pediatric Primary Care

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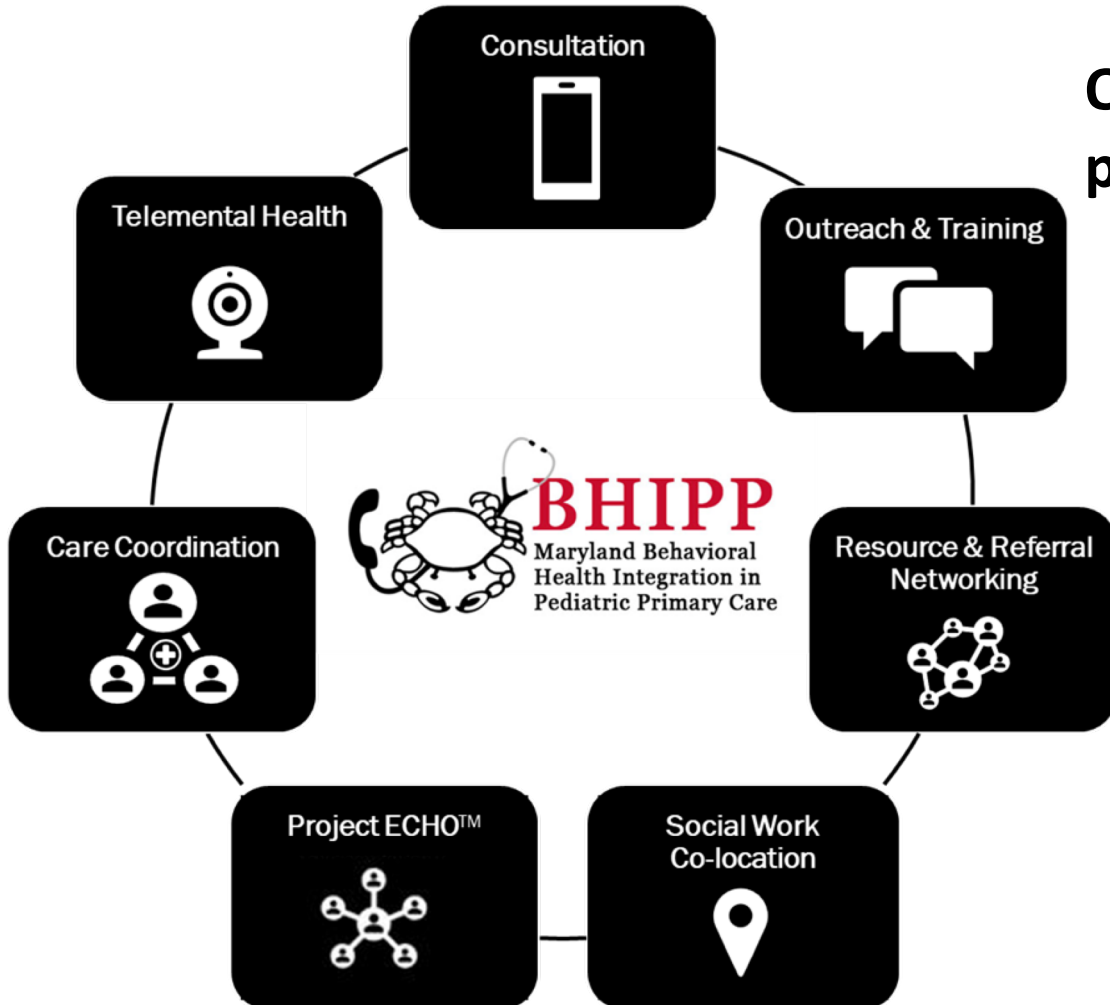
Maryland BHIPP Resilience Break Presentation

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Offering support to pediatric primary care providers through free:

- Telephone consultation (855-MD-BHIPP)
- Resource & referral support
- Training & education
- Regionally specific social work co-location (Salisbury University and Morgan State University)
- Project ECHO®
- Direct Telepsychiatry & Telecounseling Services
- Care coordination

Partners & Funding

- BHIPP is supported by funding from the **Maryland Department of Health, Behavioral Health Administration** and operates as a collaboration between the **University of Maryland School of Medicine**, the **Johns Hopkins University School of Medicine**, **Salisbury University** and the **University of Maryland Eastern Shore**.
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Disclosures

- No conflicts of interest to disclose

Learning Objectives

- Describe the importance of assessing sleep concerns and healthy sleep in pediatrics patients
- Describe evidenced-based tools for assessing sleep difficulties in pediatric patients
- Educate caregivers on sleep hygiene strategies and behavioral treatments for pediatric sleep concerns
- Identify pharmacologic treatments of sleep problems in children



Prevalence of Pediatric Sleep Problems

- 25-50% of children experiences sleep problems
- 40% of adolescents impacted by sleep problems

Most common behavioral sleep problems:

- Night wakings: 25-50% of children over 6 months of age
- Bedtime resistance: 10-15% of toddlers *(Burnham et al., 2002)*
- Insomnia:
 - up to 20% of preschool and early school aged children
 - 20-40% of school aged children (trouble falling asleep most common) *(singareddy et al., 2009)*



Sleep helps prevent against the development of:

Type 2 Diabetes

Obesity

High Blood Pressure

Mental health challenges

Injuries

Inattention

Executive Dysfunction

Poor Academic performance

Behavior problems



Psychiatric Disorders and Sleep

Anxiety Disorders

- Anxiety disorders affect up to 20% of children
- Up to 90% of children with anxiety disorders experience sleep problems
- 85% of children with Generalized Anxiety Disorder experience sleep issues

OCD

- 50% of adolescents (age 13-17) with OCD experience sleep problems

Depressive Disorders

- 1% of children and 5% of adolescents have depression
- 90% of youth with depression experience sleep problems

Attention-Deficit/Hyperactivity Disorder (ADHD)

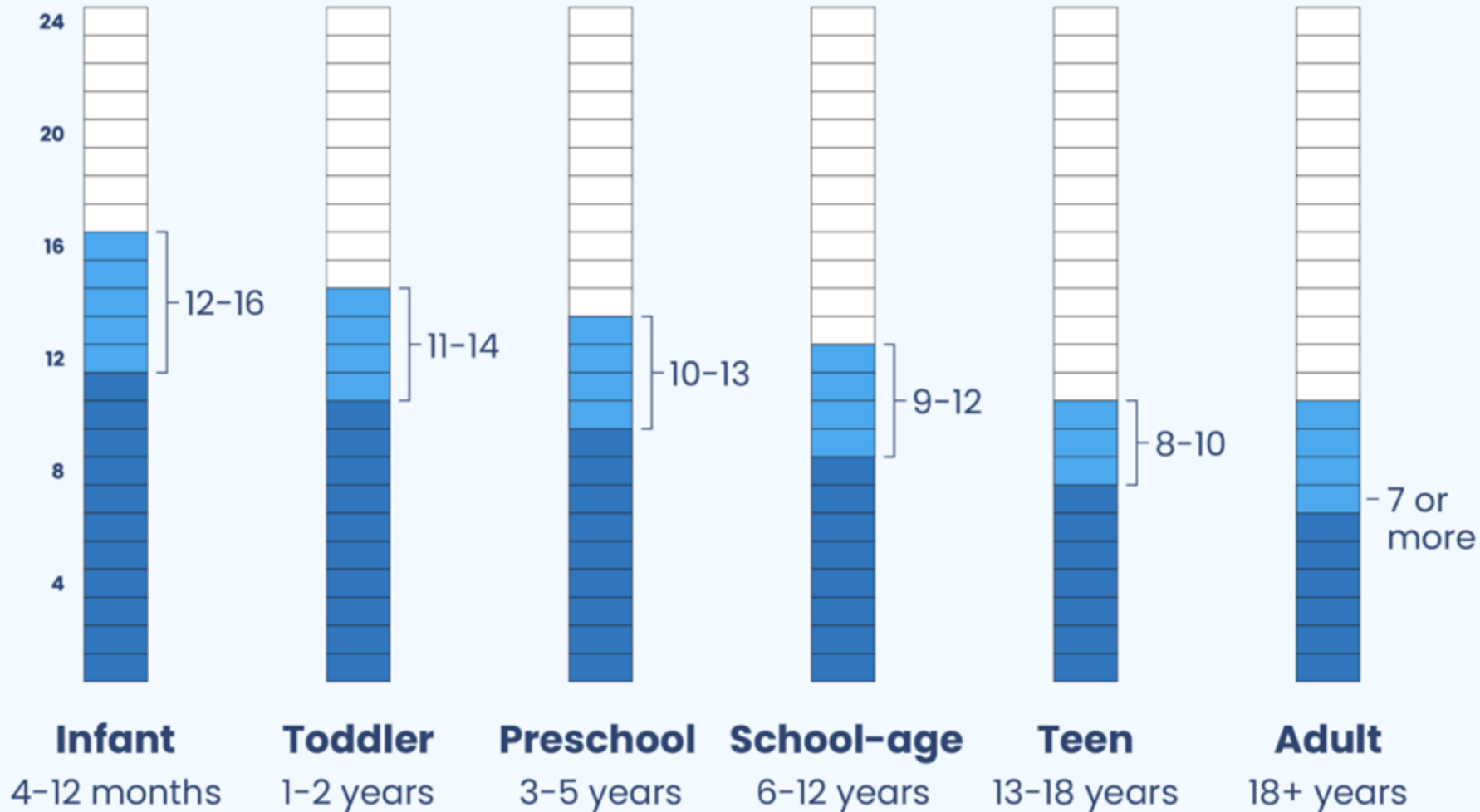
- 2-17% of youth diagnosed with ADHD
- 50% experience sleep challenges

Autism Spectrum Disorders (ASD)

- 1 in 36 children have autism
- 50-80% of autistic youth have sleep problems

(Alfano et al., 2009)

Recommended Hours of Sleep



Source: American Academy of Sleep Medicine

Routine Screening for Sleep Problems



Sleep questions should be incorporated into routine health assessments for pediatric patients of all ages



Screening tools can provide prompts of questions to assess for sleep problems in children

E.g., BEARS

BEARS Sleep Screening Tool

BEARS is divided into 5 major sleep domains (B=Bedtime Issues, E=Excessive Daytime Sleepiness, A=Night Awakenings, R=Regularity and Duration of Sleep, S=Snoring) and helps clinicians evaluate potential sleep problems in children 2 to 18 years old. Each sleep domain has a set of age-appropriate “trigger questions” for use in the clinical interview. The screen is free to use.

	TODDLER/PRESCHOOL (2-5 YEARS)	SCHOOL-AGED (6-12 YEARS)	ADOLESCENT (13-18 YEARS)
B EDTIME PROBLEMS	Does your child have any problems going to bed? Falling asleep?	Does your child have any problems at bedtime? (P) Do you have any problems going to bed? (C)	Do you have any problems falling asleep at bedtime? (C)
E XCESSIVE DAYTIME SLEEPINESS	Does your child seem overtired or sleepy a lot during the day? Does he/she still take naps?	Does your child have difficulty waking in the morning, seem sleepy during the day or take naps? (P) Do you feel tired a lot? (C)	Do you feel sleepy a lot during the day? In school? While driving? (C)
A WAKENINGS DURING THE NIGHT	Does your child wake up a lot at night?	Does your child seem to wake up a lot at night? Any sleepwalking or nightmares? (P) Do you wake up a lot at night? Have trouble getting back to sleep? (C)	Do you wake up a lot at night? Have trouble getting back to sleep? (C)
R EGULARITY AND DURATION OF SLEEP	Does your child have a regular bedtime and wake time? What are they?	What time does your child go to bed and get up on school days? Weekends? Do you think he/she is getting enough sleep? (P)	What time do you usually go to bed on school nights? Weekends? How much sleep do you usually get? (C)
S NORING	Does your child snore a lot or have difficult breathing at night?	Does your child have loud or nightly snoring or any breathing difficulties at night? (P)	Does your teenager snore loudly or nightly? (P)

(P) Parent-directed question (C) Child-directed question

Source: *A Clinical Guide to Pediatric Sleep: Diagnosis and Management of Sleep Problems*™ by Jodi A. Mindell and Judith A. Owens; Lippincott Williams & Wilkins

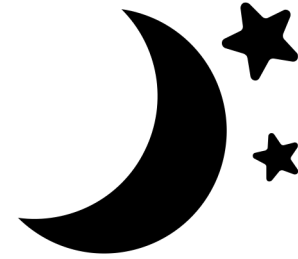


Detailed Sleep History



Chief Sleep Complaint

- Trouble falling or staying asleep
- Excessive daytime sleepiness
- Snoring or breathing problems while sleeping
- Abnormal movements/behaviors immediately before or during sleep



Additional Sleep History

- Sleep-wake schedule
- Duration and frequency of problem
- Variability from night to night
- Attempted interventions/strategies
- Daytime symptoms (e.g., sleepiness, inattention, irritability)

Medical History



Review of medical history

Chronic conditions that may disrupt sleep

Neurologic disorders

ADHD

Anxiety/Depression



Medication & substance use

Caffeine

Alcohol

Subjective Measures of Sleep



Sleep Diary

Infant and child sleep diary																													
Two week sleep diary for (name): _____																				Rating scale: 1 = poor 2 = fair 3 = good									
1. Answer the questions in the shaded area. 2. Draw a line through the times your child was asleep (include naps). Each box represents one hour. 3. Put down arrow (↓) at the times your child went to bed, and up arrow (↑) at the times your child got out of bed.																				Rate your child's:									
Date	Day	8:00 am	9:00 am	10:00 am	11:00 am	12:00 pm	1:00 pm	2:00 pm	3:00 pm	4:00 pm	5:00 pm	6:00 pm	7:00 pm	8:00 pm	9:00 pm	10:00 pm	11:00 pm	Midnight	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am	6:00 am	7:00 am	Quality of sleep	Level of quality of alertness	Mood on awakening	
	Day 1																												
	Day 2																												
	Day 3																												
	Day 4																												
	Day 5																												
	Day 6																												
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	Day 10																												
	Day 11																												
	Day 12																												
	Day 13																												
	Day 14																												
Comments:																													

Questionnaires

- Children's Sleep Habits Questionnaire (CSHQ)
- Epworth Sleepiness Scale for Children and Adolescents (ESS-CHAD)
- Pediatric Sleep Questionnaire (PSQ)

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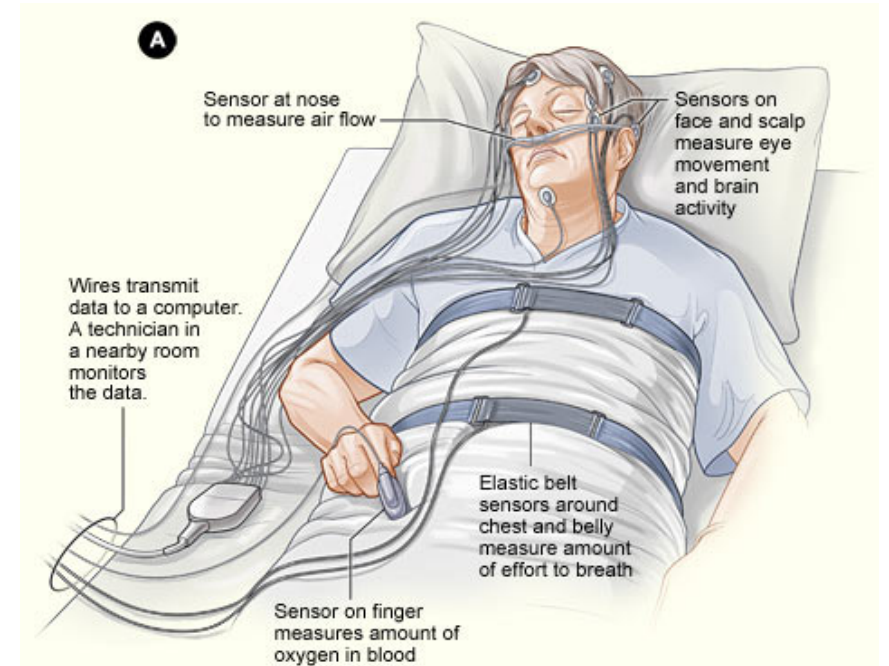


Objective Assessment of Sleep



Polysomnography

- Takes place in a sleep lab overnight
- Used to assess for:
 - Snoring +
 - Gasps and pauses in respiration
 - Academic or attention problems
 - Other sleep disorders
 - Movement related sleep disorder
 - R/O narcolepsy, idiopathic hypersomnia
 - Persistent and treatment resistant sleep disturbances



Actigraphy



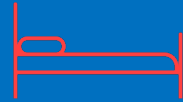
- Monitors movement at night for days to weeks
- Shows patterns of sleep vs. wakefulness
- Used to assess:
 - Circadian sleep-wake rhythm disorders
 - Insomnia
 - Excessive daytime sleepiness
- Monitors treatment response

Sleep Hygiene

1. Stick to the same bedtime and wake time every day, even on weekends



2. Beds are for sleeping



3. A comfy, cozy room

4. Alarm clocks are for waking up



5. Bedtime routine

6. Quiet, calm, and relaxing activities



7. How to relax



8. Start the day off right with exercise



9. Avoid caffeine

10. If you can't sleep, get out of bed



11. Put kids to sleep drowsy, but awake

12. Cuddle up with a stuffed animal or soft blanket



13. Bedtime checkups should be short and sweet



14. Maintain a sleep diary

From CHOC Children's



Treatment of Behavioral Insomnias of Childhood










- Bedtime routines
 - Include soothing activities (e.g., bath, stories)
 - Avoid tv and other electronics
 - Child should be placed in bed drowsy but awake
- Extinction
 - “Cry it out”
 - Graduated extinction (“Ferberize”)
- Bedtime fading
 - addresses sleep onset insomnia
 - Temporarily set bedtime to current sleep onset time and gradually advance bedtime
- Positive reinforcement
 - Sticker charts
 - Obtainable goals, immediate rewards



Cognitive Behavioral Therapy for Insomnia (CBT-I)

CBT-I is a multicomponent treatment that is comprised of behavioral and cognitive components.

- Component 1: Sleep hygiene and psychoeducation
- Component 2: Stimulus control
- Component 3: Sleep restriction
- Component 4: Relaxation training
- Component 5: Cognitive therapy

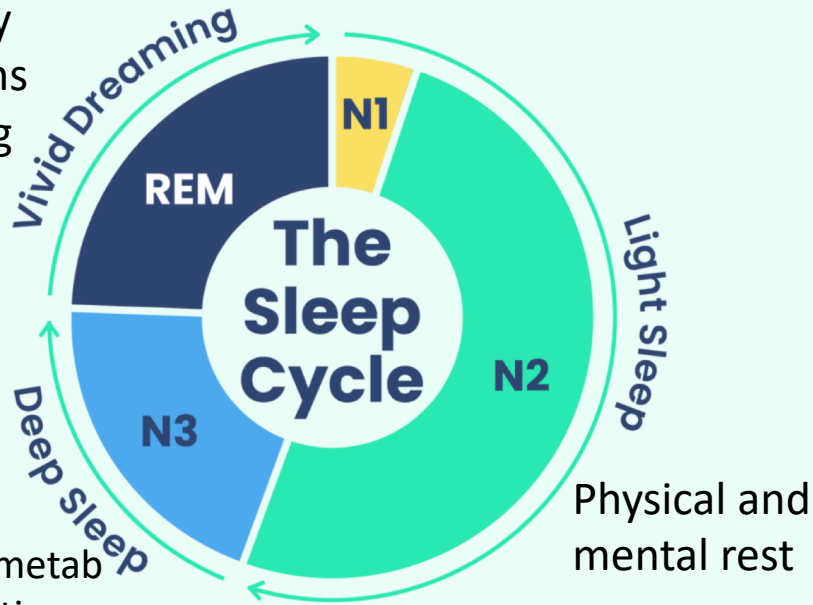
Sleep Hygiene	Stimulus Control	Sleep Restriction	Relaxation	Cognitive	Wrap-Up
 appropriate bedroom environment	 using bedroom only to sleep	 restricting sleep times	 taking short and long relaxations during the day	 restructuring undesired thinking patterns	going over each component to prevent the relapse of insomnia
 avoiding screen-based devices before bedtime	 leaving bedroom when cannot fall asleep	 increasing in-bed sleep times			
 avoiding coffee or alcohol consumption					

Treatment of Sleep Problems



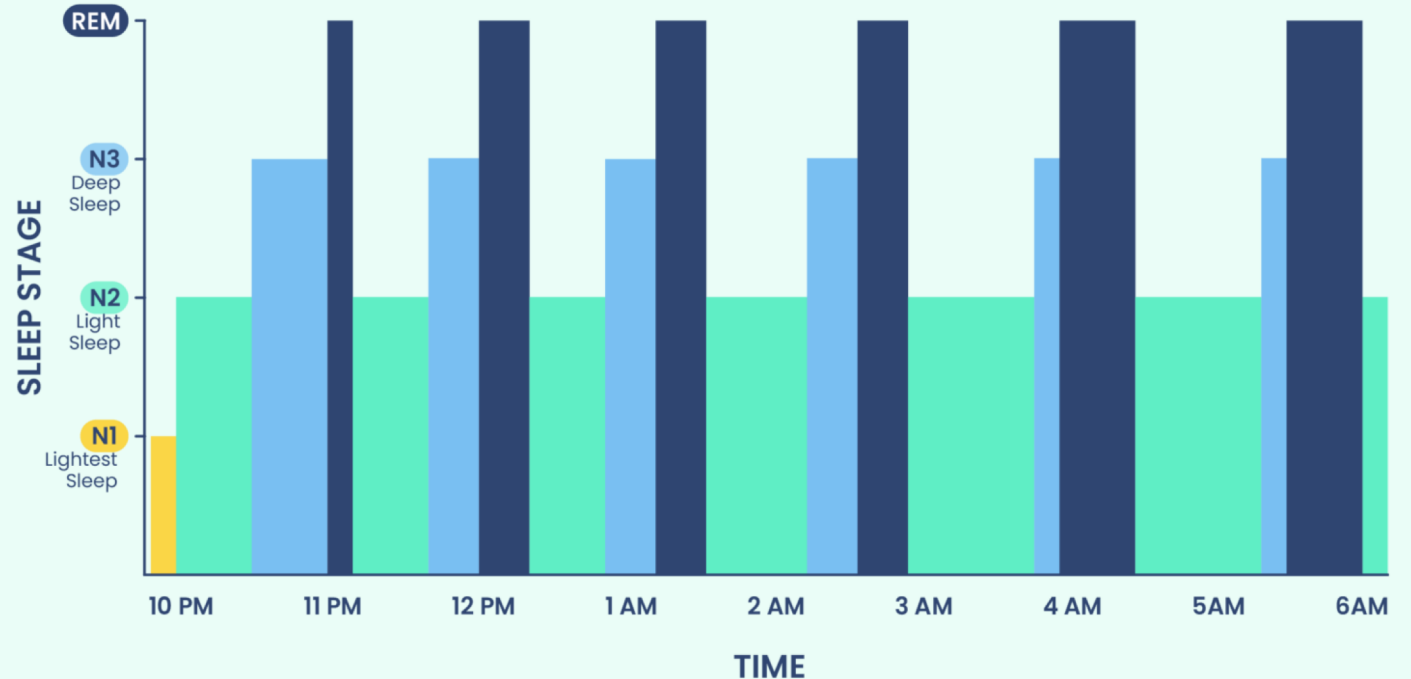
Sleep Cycle

Memory
Emotions
Learning



Repair
Glucose metab
GH secretion

Sleep Cycles Through the Night



Poor sleep

- Worsens mood, attention and anxiety
- Independent risk factor for self harm
- Affects physical growth
- Exacerbates other physical illness and pain tolerance

Rule Outs

Poor sleep hygiene

Hunger

Anxiety, ADHD

Medication

Iron Deficiency

Enuresis

Pain

Obstructive Sleep Apnea

Effects of medication on sleep

	Effect on sleep	Side effects
Depression	REM- quicker, denser and longer	
SSRI	Decrease REM and total sleep time Sleep fragmentation, increase wakefulness	-Nightmares/ vivid dreaming -Sedation
Stimulants	N1> N3 and REM	- Appetite changes, initial insomnia
TCAs	Decrease sleep latency	-Anticholinergic side effects, -cardiac side effects
Antipsychotics	Decrease REM sleep, increase total sleep time	Daytime tiredness
Antiepileptics	Increase total sleep time Decrease REM	-Worsen respiratory indices - Weight gain - Daytime tiredness
Beta Blockers	Decrease REM, increase awakening	- Insomnia, nightmares, daytime tiredness
Benzo/ Zolpidem	Decrease NREM/ N3 sleep	Sleep walking

Melatonin

- Half life is 30-60 min
- Metabolized by CYP 1A2
- Food delays onset of action.
- The amount of melatonin in supplements varies widely
- Decreases NI (light sleep) – improves ease of falling asleep
- Does not affect total sleep time or day time functioning

Sleep pharmacology

	Dosing	Primary effect	Sleep architecture	Side effects	Indication
Melatonin	0.1mg (delayed sleep phase) 1- 5 mg (sedation)	Decrease sleep latency	minimal	Hypotension, bradycardia, lower seizure threshold, Decrease GnRH secretion	<ul style="list-style-type: none"> - Delayed sleep phase - Initial insomnia
Antihistamines	Hydroxyzine 5-25 mg Benadryl 12.5-25 mg	Decrease latency Increase duration	Increase slow wave Decrease REM	Anticholinergic effects Tolerance AM sedation	<ul style="list-style-type: none"> - Anti allergy - Initial sedation
Alpha agonists	Clonidine 0.05-0.3 mg			Hypotension/ rebound hypertension Nocturnal enuresis	<ul style="list-style-type: none"> - Treatment of ADHD with comorbid sleep difficulties

Thank you!

Questions?



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