

# Evaluation and Treatment of Children and Adolescents With Sleep Disorders

P.molavi M.D. professor of psychiatry ,  
subspeciality in child and adolescent psychiatry



# Learning objectives

Participants will...

- Review guidelines describing “normal” sleep in children and teens
- Explore common causes of sleep disturbance in the pediatric population
- Address treatment of sleep issues associated with common psychiatric conditions in children and teens
- Present an approach to addressing concerns with insomnia in clinical practice



# Potential Conflicts of Interest (last five years)

Source of Conflict:

Company:

Consultant

Ironshore, Shire

Grants/research support

CAPTN/Duke Clinical Research  
Institute

Speakers' Bureaus

N/A

Other financial support

N/A

Publishers

Harper Collins/Zondervan

# Insomnia definition

Insomnia in children can be defined as...

- Difficulty initiating sleep without a caregiver's intervention
- Maintaining sleep (frequent awakenings during the night and difficulty returning to sleep without a caregiver's intervention)
- Waking up earlier than the usual schedule with inability to return to sleep.



# How much sleep is “normal” or “ideal” for a child or teen?

Age Range	Ideal hours of sleep	Acceptable range of sleep (maximum – minimum)
Newborns (0-3 months)	14-17	18-19 and 11-13
Infants (4-12 months)	12-15	16-18 and 10-11
Toddlers (1-2 years)	11-14	15-16 and 9-10
Preschoolers (3-5 years)	10-13	14 and 8-9
School-aged (6-13 years)	9-11	12 and 7-8
Adolescents (14-17 years)	8-10	11 and 7
Young adults (18-25 years)	7-9	10-11 and 6

Recommendations of the National Sleep Foundation, 2015



# How prevalent are sleep disorders in childhood?

- Insomnia – 20-30%
- Sleep-disordered breathing – 2-3%
- Hypersomnia – 0.01 – 0.2%
- Circadian rhythm disorders – 7%
- Parasomnias – 25%
- Sleep-related movement disorders – 1-2%



# Causes, triggering factors of insomnia by age...

## School-aged children

- Limit-setting sleep disorder
- Fear
- Nightmares
- Acute infectious diseases
- Chronic diseases

## Adolescents

- Sleep hygiene problems
- Delayed sleep phase
- Psychiatric comorbidities
- Family, school pressure
- Sleep-disordered breathing
- Movement disorders
- Acute infectious diseases
- Chronic diseases

# BEARS algorithm for assessing issues with sleep

BEARS	2---5 years	6---12 years	13---18 years
Bedtime/sleep problems	Does your child have any problems going to bed? Falling asleep?	Does your child have any problems at bedtime? Do you have any problems going to bed?	Do you have any problems falling asleep at bedtime?
Excessive daytime sleepiness	Does your child seem overly tired 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? Do you feel tired a lot?	Do you feel sleepy a lot during the day? At school? While driving?
Awakenings 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? Do you wake up a lot at night? Do you have trouble getting back to sleep?	Do you wake up a lot at night? Have trouble getting back to sleep?
Regularity and duration of sleep	Does your child have a regular bedtime and wake up time? What are they?	What time does your child go to bed and get up on school days? On weekends? Do you think he/she is getting enough sleep?	What time do you usually go to bed on school nights? Weekends? How much sleep do you usually get?
Sleep-disordered breathing	Does your child snore a lot or have breathing difficulties at night?	Does your child snore a lot or have any breathing difficulties at night?	Does your child snore?

## Approaches to the child/teen with sleep disturbance...

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- Identify, effectively treat psychiatric conditions associated with insomnia
- Reassess when insomnia occurs in context of ongoing treatment
- Address sleep hygiene routines
- Behavioral interventions
- Adjunctive medication



# Sleep concerns associated with depression

- 75% of children with depression experience insomnia
  - 30% experience severe insomnia
- Associated with significant reduction in sleep time, longer sleep latency, more middle insomnia
- Insomnia as a risk factor for depression
  - 4-5X increase in depression risk among adolescents with insomnia
  - Risk of depression increases 8X with less than six hours of sleep per night

Owens JA, Mindell JA. *Pediatr Clin North Am.* 2011;58:555-69.

Sivertsen B et al. *Eur Child Adolesc Psychiatry.* 2014;23:681-9.



# Sleep concerns associated with anxiety disorders

- 88% of pediatric patients with anxiety experienced at least one sleep-related problem
  - Over 50% had three or more sleep disturbances
  - Insomnia, nightmares, reluctance to sleep alone most common
- 42-66% of children with GAD experience insomnia
- Sleep disturbances in early childhood are significant predictors of anxiety disorders 20 years later
- Sleep onset may be delayed by close to an hour in anxious children



# PTSD and sleep disorders

“The sleep/wake system is the most prominent, non-specific vulnerable system to succumb to a significant stressor”

- Common sleep disruptions include...
  - Difficulty falling asleep
  - Difficulty maintaining sleep
  - Parasomnias (nightmares and bedwetting)
- Childhood sexual abuse remained associated with significant sleep disturbances 10 years after disclosure
- Compared to both depressed and non-abused children...
  - Prolonged sleep latency,
  - Decreased sleep efficiency
  - Higher levels of nocturnal activity

Sadeh A. *Sleep Disorders*, 1996, vol. 5 (685-700)

Chorney DB et al. *Journal of Pediatric Psychology*, 2008;33(4):339–348



# Sleep disorders and ADHD

- 25-50% of children with ADHD experience sleep disorders
  - Prevalence increases with age
- More common with combined subtype of ADHD
- 95% of patients with obstructive sleep apnea experience ADHD symptoms
  - 20-30% of “full-syndromal” ADHD patients may have OSA
  - Symptoms improve after successful treatment for OSA
- Often presents as circadian rhythm disorder
- Insomnia as a side effect of stimulants
- Medication may exacerbate sleep issues associated with comorbid anxiety disorders



# Sleep issues with autism spectrum disorders

- Sleep restriction associated with increased stereotypies, higher severity scores
- Insomnia characterized by...
  - Long latency of sleep onset
  - Resistance to sleep
  - Decreased sleep efficiency
  - Nocturnal awakenings
- Increased prevalence of behavioral insomnia (sleep-onset association disorder, limit-setting sleep disorder)



# Sleep hygiene

- Diet (caffeine – soft drinks, energy drinks, chocolate, tea, coffee)
- Physical activity
- Relaxing activity for up to three hours before bedtime
- Restricting electronic media for at least an hour before bedtime
- Comfortable bedroom environment
- Consistent bedtime routines
- Consistent wake-up times



# Adjunctive medication

- Insomnia doesn't necessarily resolve by treating primary psychiatric disorder
- This is all off-label!
- Melatonin, antihistamines in children with delayed sleep onset (doses of 5 mg or higher in patients with ADHD)
- Clonidine in children, teens with sleep-onset issues associated with ADHD
- No indication for benzodiazepines, TCAs



# Conclusions

- Insomnia is a common complication of psychiatric conditions in children and teens
- We should start by treating underlying conditions responsible for insomnia
- Kids may get better without improvement in sleep
- Education on sleep hygiene, behavioral therapy important.

