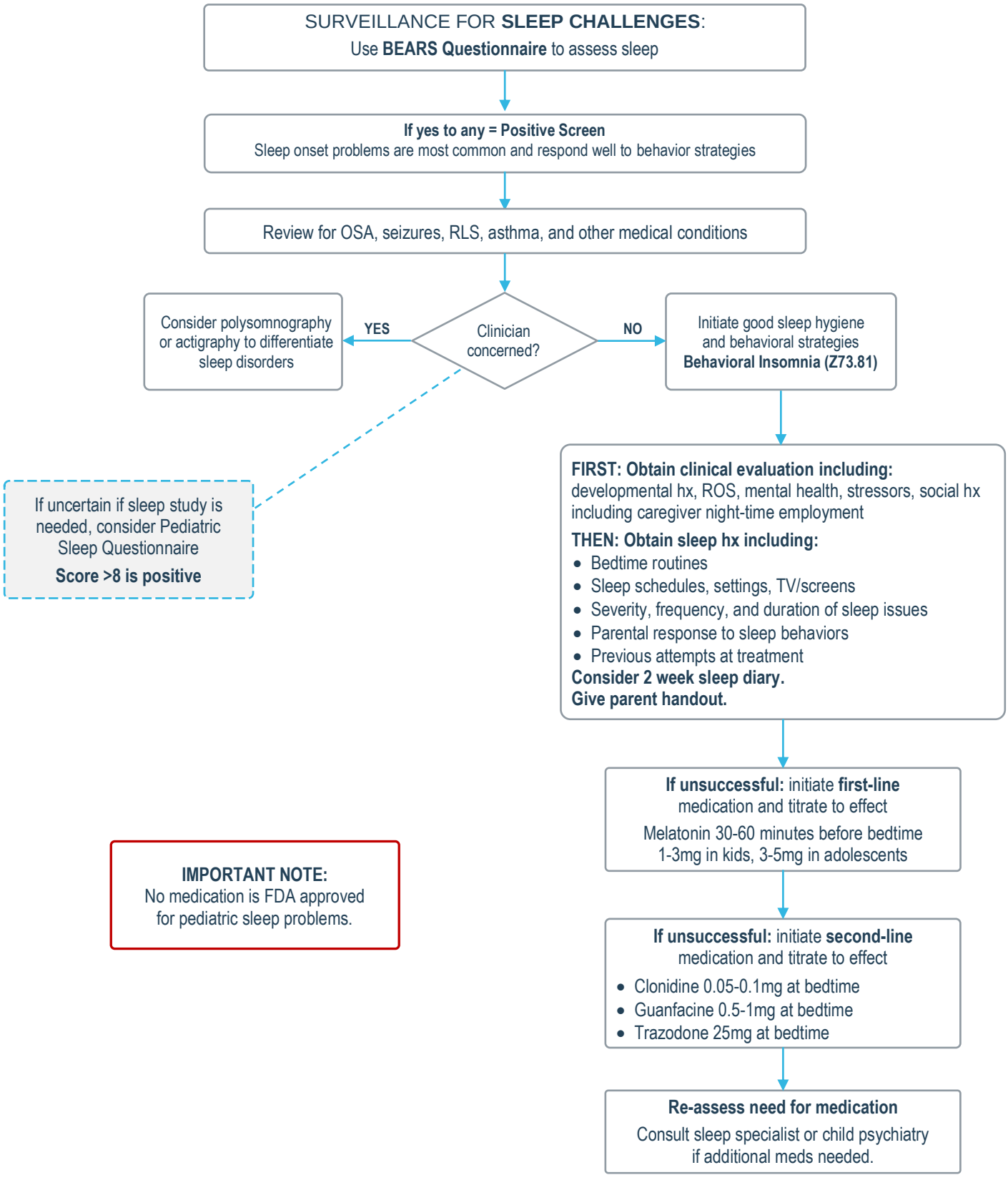
3.11 Sleep Challenges



Types of Sleep Disorders in Children and Adolescents
Sleep-related breathing disorders • Snoring • Sleep Related Hypoventilation Syndrome/Obesity Hypoventilation Syndrome (OHS) • Obstructive Sleep Apnea (OSA) • Central Sleep Apnea (CSA) • Upper Airway Resistance Syndrome (UARS) • Nocturnal Asthma, or other medical problems like GERD
Parasomnias *(unusual, but benign sleep behaviors)* • Sleep walking/talking • Sleep terrors/night terrors — episodes of screaming, intense fear, and flailing while asleep. The child is typically inconsolable/difficult to wake and has no recollection of it. • Sleep related eating disorder (SRED) — episodes of eating while asleep • Sleep paralysis — temporary inability to move or speak that occurs during transition between sleep and wakefulness. Some individuals experience hallucinations or feel a sense of choking or suffocating, which can be very frightening. • REM sleep behavior disorder — episodes of physically acting out vivid, often unpleasant dreams with vocal sounds and sudden arm and leg movements during REM sleep

Insomnia *(can have mix of types)*
• Acute insomnia — brief difficulty sleeping often caused by a stressful life event or change
• Chronic insomnia — difficulty falling asleep or staying asleep > 3x/week for > 3 months
• Sleep onset insomnia — trouble initiating sleep
• Maintenance insomnia — difficulty staying asleep, going back to sleep, or waking early
• Behavioral insomnia of childhood (can have mix of types)
  ◦ Sleep onset association type — unable to self-soothe, often requires caregiver presence when falling asleep or very particular conditions to fall asleep
  ◦ Limit setting type — noncompliance at bedtime — stalling or refusing to go to sleep and insufficient limits set by caregiver

Hypersomnia
Circadian rhythm sleep disorders • Delayed sleep phase syndrome — sleep > 2 hours past acceptable/conventional bedtime • Irregular sleep-wake rhythm disorder — inconsistent sleep patterns without stable rhythm
Sleep-related movement disorders • Restless legs syndrome (RLS) — unpleasant sensations in the legs that cause an uncontrollable urge to move and tends to occur at night when sitting or lying down • Periodic limb movement disorder (PLMD) — frequent limb movements during sleep • Nocturnal bruxism — jaw clenching and/or teeth grinding
Sleep/nocturnal enuresis
Nocturnal seizures
Narcolepsy
Night eating syndrome — different from SRED — individual is awake and fully aware of eating

BEARS SLEEP SCREENING TOOL

	Toddler/Preschool (2-5 years)	School-Aged (6-12 years)	Adolescent (13-18 years)
1. **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)
2. **E**xcessive daytime sleepiness	Does your child seem overtired or sleepy a lot during the day? Does 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)
3. **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? (C) Have trouble getting back to sleep? (C)	Do you wake up a lot at night? Have trouble getting back to sleep? (C)
4. **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)
5. **S**noring	Does your child snore a lot or have difficulty 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)
If you answered "yes" to any of these questions, your child may have a sleep problem that should be discussed with your pediatrician or pediatric sleep specialist.			

P = parent or caregiver question
C = child or youth question

EVIDENCE-BASED INTERVENTIONS FOR BEHAVIORAL INSOMNIA OF CHILDHOOD

- Non-pharmacologic treatment is effective and the standard of care.
- No medication is FDA approved for pediatric sleep problems.
- Bedroom environment must be optimized for sleep (e.g., comfortable, quiet, dark, cool, no screens).
- Free relaxation apps can be a good resource; see Anxiety Care Guide.
- Bedtime routine and sleep/wake time should be consistent (e.g., bath, PJs, brush teeth, stories).
- The routine should not involve a parent being in the room when the child falls asleep. This may also include a transitional object (e.g., stuffed animal or blanket).
- Explain the "silent return": "If you talk, ask me questions, or yell, I'm not going to respond because it's time for sleep. If you leave your room, I'm going to take you back to bed so we can all get good rest." (e.g., "It's time for sleep. I'll see you in the morning.")

Cognitive behavioral therapy for insomnia (CBTi) — therapist

- Multi-component, evidence-based approach of 6-8 sessions appropriate for adolescents
- Involves:
  - Psychoeducation — sleep hygiene tips, sleep needs, relationship between thoughts, feelings, behaviors, and sleep
  - Cognitive restructuring — changing inaccurate or unhelpful thoughts about sleep
  - Behavioral interventions — relaxation training (e.g., deep breathing, body scan, progressive muscle relaxation), stimulus control, sleep restriction or compression to help establish healthy sleep habits

Biofeedback

- Uses technology to help monitor certain processes in the body such as brain waves, heart rate, breathing, and body temperature
- Can include electromyogram (EMG) and electroencephalogram (EEG)
- Aids in control of physiologic variables through auditory and visual feedback to decrease somatic arousal
- Typically combined with relaxation techniques

Light therapy

- Used to delay sleep phase disorders with exposure to light on awakening
- Use caution with bipolar disorder because of risk of mania

Chronotherapy

- Gradually shifting bedtime and wake time each day until the desired sleep time is reached

Motivational interviewing

- Can be helpful for adolescents to facilitate behavior changes around sleep (e.g., decreasing screen usage before bedtime, eliminating afternoon naps)

MEDICATION GUIDANCE

Class	Generic	Brand Name	Available Forms/Doses	Dosing Information	Other Information	Comments
Neurohormone	melatonin		**Immediate-release tablets:** 0.5, 1, 3, 5mg **Prolonged-release tablets:** 5mg **Oral liquid:** 1mg/ml Chewable avail	**Initial:** 0.5-3mg/day **Max dose:** 10mg/day **Typical effective dose:** 3-6mg/day **Peak effect:** 45-60 minutes **Duration:** 4 hours	**More common side effects (SE):** headache, dizziness **Rare SEs:** morning sleepiness, enuresis, possible decreased seizure threshold, suppression of the hypothalamic-gonadal axis	**Indication:** sleep-onset insomnia Administer 30-60 minutes prior to bedtime
Alpha2-agonist	clonidine	Catapres IR, Kapvay ER	**Immediate-release tablets:** 0.1, 0.2, 0.3mg **Extended-release tablet:** 0.1, 0.2mg	**Initial:** 0.05-0.1mg/day **Max dose:** 0.3mg/day **Typical effective dose:** 0.1-0.2mg/nightly **Peak effect:** 2-3 hours **Duration:** 4-5 hours	**Common SEs:** sedation (clonidine > guanfacine) **Rare SEs:** hypotension, bradycardia, irritation, anticholinergic effects, REM suppression Administer 1 hour before bedtime Wean 1mg/day to prevent rebound hypertension	**Indication:** sleep disturbances Monitor blood pressure and heart rate for hypotension and bradycardia Sedative effect diminishes over time Limited evidence for use in pediatrics
	guanfacine	Tenex IR, Intuniv ER	**Immediate-release tablets:** 1, 2mg **Extended-release tablet:** 1, 2, 3, 4mg	**Initial:** 0.5-1mg/day **Max dose:** 4mg/day **Typical effective dose:** 1-4mg/day **Peak effect:** 3-5 hours **Duration:** 8-10 hours		
Antihistamine	hydroxyzine	Atarax, Vistaril	Tab (10, 25, 50mg) Soln (10mg/5ml)	**Initial:** 5mg nightly, increase to 0.6mg/kg/day for >6+ to max **Max dose:** 50mg dose **Typical effective dose:** 25mg **Peak effect:** 30 min-2 hours **Duration:** 3-4 hours	**Common SEs:** dry mouth, dizziness, drowsiness, constipation **Rare SEs:** tremor, difficulty urinating, irregular or fast heart beat, agitation	Also approved for anxiety treatment such as 10mg tid
Atypical reuptake inhibitor (SARI)	trazodone	Desyrel	**Tablets:** 50, 100, 150, 300mg	**Initial:** 25mg/day **Max dose:** 100mg/day **Typical effective dose:** 50mg **Peak effect:** 30-90 min	**Common SEs:** dry mouth, nausea, vomiting, drowsiness, dizziness, headache, blurry vision, hypotension, morning hangover effect **Rare SEs:** priapism **Box warning (BW):** increased risk of suicidal thoughts	**Indication:** night awakenings Administer 30 minutes prior to bedtime. Antidepressant effects may occur at higher doses. Limited evidence-based studies in pediatrics.

Note: all medication information should be verified using current PDR

PROVIDER TIPS: SPECIAL POPULATIONS AND COMORBID SLEEP PROBLEMS

Population	Common Sleep Problems	Treatment Options (not necessarily in rank order)
Attention-deficit/hyperactivity disorder (ADHD)	• Insomnia (acute or chronic insomnia; sleep onset and/or sleep maintenance insomnia) • Behavioral insomnia of childhood • Sleepiness on awakening • Night eating syndrome	• Behavioral therapy and/or pharmacotherapy for ADHD • Psychoeducation on ADHD, sleep hygiene and behavioral strategies • Consider melatonin or sleep medications as a temporary intervention
Depression	• Insomnia (acute or chronic; onset, maintenance, or both) • Hypersomnia • Excessive daytime fatigue • Night eating syndrome	• CBT for depression including psychoeducation on depression and sleep hygiene • Pharmacotherapy for depression and/or melatonin • Consider sleep medication as a temporary intervention
Bipolar disorder	• Insomnia (acute or chronic; onset, maintenance, or both) • **Decreased need for sleep** (common during manic episodes — person does NOT feel tired) • Hypersomnia (common during depressive periods)	• Confirm correct diagnosis • Pharmacotherapy for bipolar disorder (by or in consultation with psychiatrist) • Child and family focused psychoeducation and CBT for bipolar disorder including sleep hygiene
Anxiety	• Insomnia (acute or chronic; onset, maintenance, or both) • Behavioral insomnia of childhood • Nightmares • Bedtime refusal, co-sleeping, inflexible nighttime rituals • Night eating syndrome	• CBT for anxiety including psychoeducation on anxiety, sleep hygiene, and sleep-related cognitions • Pharmacotherapy for anxiety and/or melatonin • Consider sleep medication as a temporary intervention
Acute stress disorder and posttraumatic stress disorder (PTSD)	• Insomnia (acute or chronic; onset, maintenance, or both) • Behavioral insomnia of childhood • Nightmares • Auditory/visual hallucinations • Regression (e.g., bed wetting)	• TF-CBT including psychoeducation on trauma and sleep • Consider melatonin and/or sleep medication as a temporary intervention • Pharmacotherapy for comorbid conditions
Autism spectrum disorders	• Insomnia (acute or chronic; onset, maintenance, or both) • Behavioral insomnia of childhood • Circadian rhythm dysfunction	• Behavioral therapy • Sleep toolkit: www.autismspeaks.org/tool-kit/atnair-p-strategies-improve-sleep-children-autism • Consider melatonin or sleep medications as a temporary intervention

SLEEP HYGIENE TIPS FOR CAREGIVERS

Understanding sleep problems in children and teens

All children and teens should have healthy sleep habits. Parents should provide support for healthy sleep habits. Reaching the recommended amount of sleep for each child's or adolescent's age helps with focus, behavior, memory, mood, quality of life, and mental and physical health.

Age	Recommended Hours of Sleep Every 24 Hours
Infants 4-12 months	12-16 hours including naps
Children 1-2 years	11-14 hours including naps
Children 3-5 years	10-13 hours including naps
Children 6-12 years	9-12 hours
Teenagers 13-18 years	8-10 hours

Some sleep problems that affect children and teenagers are:

- Frequent awakenings at night
- Talking during sleep
- Trouble falling asleep
- Waking up crying
- Feeling sleepy during the day
- Having nightmares
- Bedwetting
- Teeth grinding and clenching
- Sleepwalking
- Waking up early

Most sleep problems are because of poor sleep habits or anxiety at bedtime about falling asleep. Separation anxiety and nightmares are common in childhood. With regular bedtime routines most sleep problems decrease.

Good sleep hygiene habits

- Set a regular bedtime routine and waking time with a clear schedule for all days of the week.
  - Provide warnings about approaching bedtime.
  - Predictable bedtime routine such as bath time or picking out clothes for the next day, brushing teeth, and story time.
  - Bedtime should occur when drowsy but while still awake. Falling asleep in other places could create bad habits that are difficult to eliminate.
  - Delays of 15-30 minutes may be used if the child is not drowsy at bedtime. Gradually advance the bedtime if this occurs.
- The bedroom should be cool, quiet, and comfortable.
  - Eliminate "screens" or "blue light" from the bedroom. Teens charge cell phone in another room; might need an alarm clock that is not a phone.
  - Only use the bedroom for sleep, not for punishment.
  - A white noise machine or sound machine may be helpful to have on throughout the night.
  - Minimize light coming into the room (e.g., use blackout curtains, eliminate lights on at night, or reduce to one dim night light even if this has to be done gradually).
- Increase physical activity during the day.

- Do relaxing activities before bedtime.
  - Turn off all screens 1-2 hours before bedtime.
  - Avoid stimulating activities before bedtime such as video games, exercise, or rowdy play.
  - Relaxation techniques may be helpful such as deep breathing or positive imagery.
- Avoid chocolate, caffeine, and heavy food or drinks before bedtime.
- Parents should not be in room when child falls asleep. There are 3 main ways to go about removing parents from the room:
  - **Extinction:** Put the child to bed, leave, ignore inappropriate behavior.
  - **Graduated extinction with check-ins:** Put the child to bed, leave, provide periodic check-ins (short intervals at first that gradually get longer). You can say, "I'll come back in X minutes." Or you can make up a boring reason to leave: "I'm going to go brush my teeth. I'll be right back."
  - **Graduated extinction with slow removal:** Put the child to bed and gradually move further away from the bed each night or every few nights.
- Worry time should not be at bedtime. If worries persistently come up at bedtime, try having a designated "worry time" earlier in the day to talk about concerns with parents or journal.
- Keep a sleep diary including naps, sleep, wake times, and activities for a minimum of 2 weeks to find patterns and problem areas to target.

Sleep Tips for Children	Sleep Tips for Adolescents
• Comfort objects may help with feeling secure and safe when parent or caregiver is not present. • Check-ins should be brief and boring with the goal to reassure the child they are okay and the parent is present. • Bedtime pass: can be exchanged for one "free" trip out of bed or one parent visit after bedtime. If the pass is not used, then could be exchanged for a positive reward (positive reinforcement).	• Avoid alcohol, tobacco, sleep aids, and marijuana that can interfere with your natural sleep cycle. • If you are awake and tossing and turning, get out of bed and complete a low-stimulating activity until feeling tired. This prevents the bed from being associated with sleeplessness. • Avoid daytime napping, such as sleeping after school.

Book recommendations

- *What To Do When You Dread Your Bed: Kid's Guide to Overcoming Problems with Sleep* by Dawn Huebner, PhD
- *The Sheep Who Wouldn't Sleep — A Story That Teaches Self-Soothing and Mindfulness* by Susan Rich Brooke
- *It's Never Too Late to Sleep Train: The Low-Stress Way to High-Quality Sleep for Babies, Kids, and Parents* by Craig Canapari, MD
- *Become Your Child's Sleep Coach: The Bedtime Doctor's 5-Step Guide, Ages 3-10* by Lynelle Schneeberg, PhD
- *Healthy Sleep Habits, Happy Child, 4th Edition: A Step-by-Step Program for a Good Night's Sleep* by Marc Weissbluth M.D.
- *Solve Your Child's Sleep Problems* by Richard Ferber