

Table 15-1 Childhood Sleep Disruption Disorders

TYPE	CAUSE	SYMPTOMS	TREATMENT
BEHAVIORAL AND ENVIRONMENTAL			
Behavioral insomnia of childhood Sleep-onset association subtype	Child falls asleep in conditions different from those of the rest of the night	Frequent or prolonged night awakenings requiring intervention	Put child to bed drowsy but awake; allow to fall asleep independently Minimize nocturnal parental response
Behavioral insomnia of childhood Limit-setting subtype	Parental anxiety, unwillingness/inability to enforce bedtime rules and limits	Bedtime resistance/refusal Excessive expression of "needs" by child	Modify parental behavior to improve limit-setting (provide rewards/positive reinforcement, appropriate consequences).
Nighttime fears	Anxiety, stress, traumatic events	Bedtime resistance Crying, clinging, seeking parental reassurance	Reassurance of safety Teach coping skills Nightlights, security objects
Social disruptions	Family stressors	Night waking Refusal to sleep	Regularize routines Family counseling
PARASOMNIAS			
Sleepwalking Sleep terrors Confusional arousals	Stage N3 (deep) sleep instability Genetic predisposition	Awakening 1–3 h after falling asleep with characteristic behaviors (see text)	Reassurance Protective environment Scheduled awakenings
Sleep enuresis	? Stage N3 instability Metabolic disease (e.g., diabetes) Urinary tract infection Urinary anatomic anomaly	Bed-wetting	Rule out medical conditions Fluid limitation, pre-bed voiding Behavioral approaches (bell and pad) Emotional support Medication (e.g., imipramine, DDAVP) Reassurance
CIRCADIAN RHYTHM DISORDERS			
Irregular sleep-wake pattern	No defined sleep schedule	Variable waking and sleeping	Regularize schedule
Delayed sleep phase	Shift in sleep-wake schedule with resetting of circadian rhythm	Not sleepy at bedtime Sleep onset at a consistently late time Morning/daytime sleepiness	Enforce wake-up time Gradually move bedtime earlier or keep awake overnight to create drowsy state Melatonin
ORGANIC			
Obstructive sleep apnea	Adenotonsillar hypertrophy Overweight/obesity Allergic rhinitis Craniofacial abnormalities Neuromuscular diseases	Frequent snoring, gasps/snorts, episodes of apnea, labored breathing during sleep, daytime sleepiness, attention and/or learning problems	Polysomnography (for diagnosis) Adenotonsillectomy Weight loss Nasal steroids Continuous positive airway pressure (CPAP)
Illness	Any chronically irritating disorder (e.g., otitis, dermatitis, asthma, or esophageal reflux)	Painful crying out	Treat disease symptomatically
Neurodevelopmental and central nervous system disorders	Variable; rule out seizures, OSA	Variable sleep disruptions	Evaluate environment Sleep hygiene Sedatives as last resort

DDAVP, 1-desamino-8-D-arginine vasopressin; OSA, obstructive sleep apnea.

from nightmares, which occur later in the night and result from arousal in REM or dreaming sleep. Children typically remember their nightmares but have no recollection of sleep terrors. Confusional arousals are similar to sleep terrors, tend to be less dramatic but last longer.

Circadian rhythm disorders are most common during adolescence but can occur at any age. They consist of an exaggerated delayed sleep phase, leading to the inability to arouse in the mornings and failure to meet sleep requirements. Many adolescents attempt to recoup lost sleep on the weekends. The resulting sleep deprivation leads to problems with cognition and emotional regulation.

Obstructive sleep apnea in childhood is not always obvious or easy to diagnose. OSA is commonly caused by tonsillar or adenoidal hypertrophy. A history of snoring is typical; some children may have excessive daytime sleepiness. Obese

children are at increased risk for OSA. In toddlers OSA often is associated with poor growth, which improves when the obstruction is relieved by a tonsillectomy or adenoidectomy. Many children with OSA experience cognitive difficulties and school problems. Hyperactivity is also more common in these children than in age-matched controls.

Primary sleep disorders must be differentiated from sleep disorders associated with psychiatric and medical disorders. Psychoses, anxiety disorders, and substance abuse can present with disordered sleep. The clinician should also consider sleep-related epilepsy and developmental disorders.

Prevention and Treatment

Establishing a baseline of healthy sleep habits is essential to both prevention and treatment of sleep disorders at all ages.