

Mental Health Care Guide

For Primary Care Clinicians

Sleep Disorder

OPAL-K

Oregon Psychiatric Access Line about Kids



Oregon Council of Child & Adolescent Psychiatry



L: OPAL-K Sleep Disorder Care Guide

TABLE OF CONTENTS

OPAL-K Assessment & Treatment Flow Chart for Sleep Disorders	Page L1
OPAL-K Evaluation for Pediatric Insomnia	Page L2
Sleep Disorder Screening, Questionnaire, Suggestions	Page L3
OPAL-K Sleep Disorders Treatment Guidelines	Page L4
OPAL-K Medication Treatment Algorithm for Sleep Disorders	Page L5
OPAL-K Medication Table for Sleep Disorders	Page L6
OPAL-K Family Checklist for Sleep Disorders	Page L7
OPAL-K Sleep Disorder Resources for Patients Families and Teachers	Page L8
OPAL-K Sleep Disorder Resources for Clinicians	Page L9
Bibliography- Sleep Disorders	Page L10 - L12

L1: OPAL-K INSOMNIA ASSESSMENT & TREATMENT FLOW CHART

Identify possible causes of insomnia: behavioral factors, environmental factors, medical illness or medications, psychiatric disorders or substance abuse

Behavioral Insomnia of Childhood Criteria:

- Falling asleep is an extended process
- Sleep onset associations are highly problematic and demanding
- In the absence of associated conditions sleep is delayed
- Nighttime awakenings require caregiver intervention
- The child has difficulty initiating or maintaining sleep
- Child stalls or refuses to go to bed
- The caregiver demonstrates insufficient or inappropriate limit setting
- The sleep problem is not better explained by medical, psychiatric, medication, or neurological factors

Environmental Causes:

- Poor sleep milieu (noise, bright light, etc.)
- Poor sleep hygiene
- Family mental illness/Substance use disorder
- Too much caffeine

Trauma:

- Abuse or neglect
- Domestic Violence
- Being bullied at school
- Cyberbullying

Psychiatric Disorders:

- ADHD
- PTSD
- Bipolar Disorder
- Substance use disorders
- Anxiety Disorder
- Major Depression
- Adjustment Reaction
- Psychotic Disorder
- Obsessive Compulsive Disorder (OCD)
- Tic Disorders

Medical or Medication

Causes:

- Delayed Sleep phase syndrome (DSPS)
- Restless Leg syndrome (RLS)
- Asthma
- Cystic Fibrosis
- Pain syndromes
- Cancer
- Rheumatic Disorders
- Medication side-effects
- Parasomnias and Obstructive sleep apnea

Parental and youth coaching

- Establish a consistent bedtime routine that does not include stimulating activities, such as television viewing or video games
- Introduce more appropriate sleep associations that will be readily available to the child during the night, such as use of a transitional object (e.g., blanket, stuffed animal)
- Encourage development of self-soothing skills, that is having children fall asleep independently at bedtime without parental presence
- Practice bedtime fading, which involves temporarily setting the child's bedtime to the current sleep-onset time and then gradually advancing bedtime
- Decrease parental attention for problematic bedtime behaviors, such as stalling and additional requests
- Provide positive reinforcement for appropriate behaviors, such as stickers for remaining in bed
- Teach self-relaxation techniques and cognitive-behavioral strategies, which can also be beneficial in older children.

Eliminate/Ameliorate Environmental Causes:

- Remove stimulating electronic media from bedrooms
- Organize sleeping area to eliminate excessive noise or light
- No caffeinated beverages
- Address family mental health issues/substance problems and make appropriate referrals
- Address domestic violence issues and make appropriate referrals
- Identify abuse and or bullying and collaborate with mental health professional/school on devising a safety plan

- ADHD Insomnia – treat with alpha 2 agonist. Consider evening dose of stimulant for rebound

- Depression Insomnia – treatment with antidepressant consider mirtazapine or doxepin if SSRI does not resolve insomnia

- Anxiety related insomnia – treat with hydroxyzine or alpha 2a agonists and or SSRI

- PTSD insomnia – alpha 2a agonists or prazosin if alpha 2as ineffective

- Psychosis/Mania – antipsychotics

- Substance use disorders – abstinence, clonidine can help with withdrawal syndromes

- OCD- SSRI, Cognitive Behavioral Therapy

- Tic Disorders- alpha 2a agonists, antipsychotics

- DSPS – usually treated with shifting internal clock using strict schedule, light therapy in AM, not light exposure at night, melatonin

- Restless Leg Syndrome – eliminate (caffeine, nicotine, antihistamines, SSRIs), exercise, and treat possible underlying causes like anemia

- Asthma, Cystic Fibrosis – Treat underlying disorder and causes of air hunger

- Pain syndromes from Rheumatic Disorders and cancer - treatment of underlying disease and proper pain control

- Parasomnias & Obstructive sleep apnea-refer to sleep specialist

L2: EVALUATION FOR PEDIATRIC INSOMNIA

- Consider sleep disorders in the differential diagnosis when evaluating children and adolescents with cognitive, emotional and behavioral problems.
- Screen all children and adolescents for OSA by asking parents about snoring, apnea, and labored breathing
- Ask screening questions for narcolepsy, e.g., cataplexy, sleep paralysis, and hypnagogic hallucinations
- Carefully assess sleep schedules and sleep amounts on weekdays, weekends and school holidays. Consider use of a sleep diary
- Remember that insufficient sleep is the most common cause of excessive day time sleepiness (EDS)
- Assess bedtime routines and sleep-onset associations especially in younger children with behaviorally based sleep disorders
- Conduct a physical exam particularly assessing risk factors for Obstructive sleep apnea (OSA) such as craniofacial anomalies, tonsillar size, septal deviation of the nose

L3 : OPAL-K Sleep Disorder Screening and Questionnaire

BEARS Sleep Screening Algorithm

<https://depts.washington.edu/dbpeds/Screening%20Tools/ScreeningTools.html>

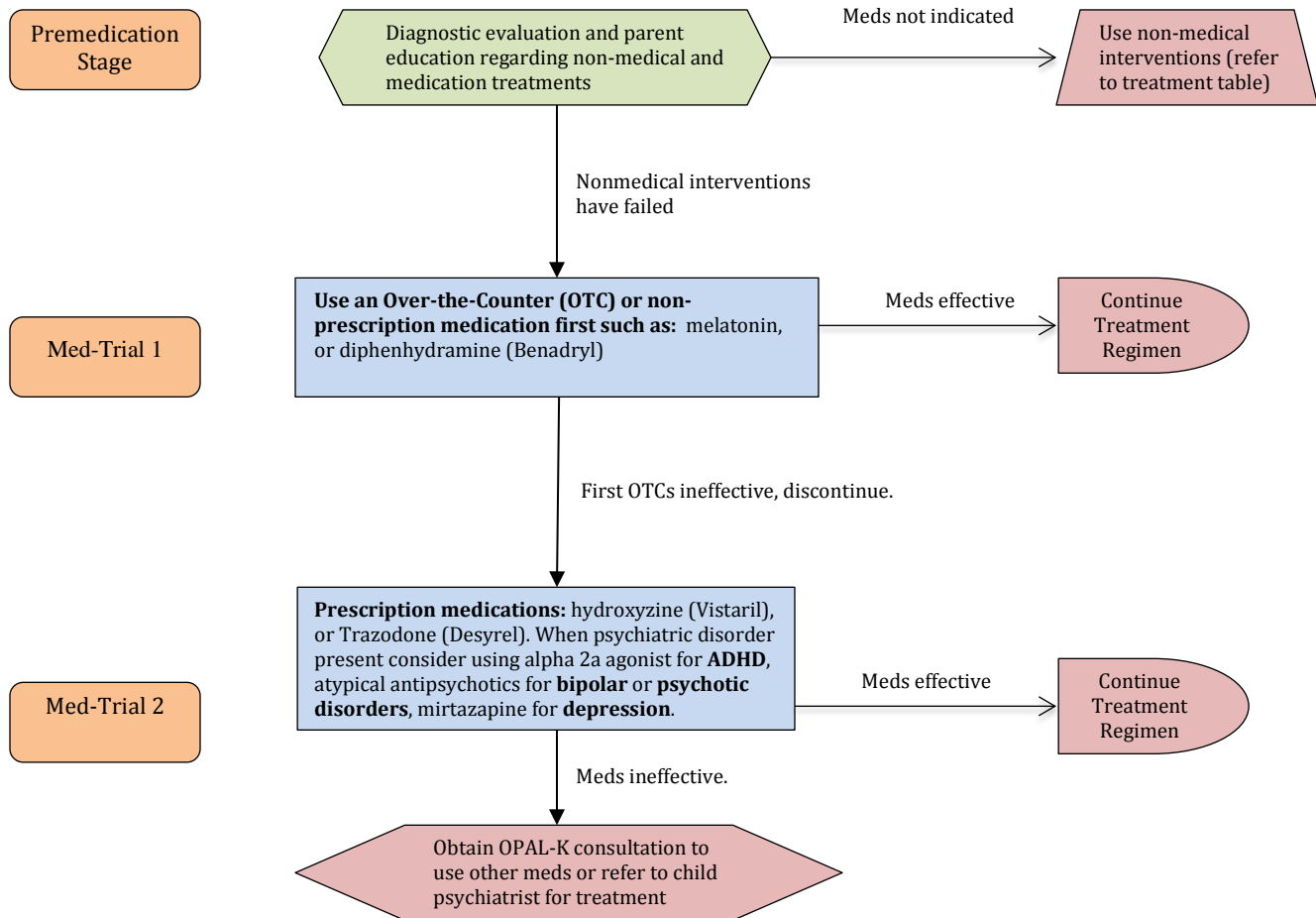
Children's Sleep Habits Questionnaire and scoring Form

<https://depts.washington.edu/dbpeds/Screening%20Tools/ScreeningTools.html>

L4: OPAL-K Sleep Disorders Treatment Guidelines

- There are no medications FDA approved for pediatric insomnia.
- Use sleep hygiene education and behavioral interventions first, (80%-90% of Behavioral Insomnia resolves with behavioral/environmental interventions) before considering use of medications or naturopathic interventions
- Youth with psychiatric illness and insomnia should have their psychiatric illness adequately treated before considering use of sleep medications or naturopathic interventions.
- More complex psychosocial causes of insomnia may need a multidisciplinary team to adequately address problems such as domestic violence, bullying and substance abuse in the home
- Refer suspected cases of Obstructive Sleep Apnea syndromes (OSAS) and narcolepsy to a sleep center for further assessment with Polysonography (PSG) and/or Multiple Sleep Latency Test (MSLT).
- The treatment of choice for OSAS is adenotonsillectomy. Continuous Positive Airway Pressure (CPAP) can be used if surgery is not possible or if OSAS persists after adenotonsillectomy.
- A follow-up polysomnogram should be done in any child continuing to have OSAS symptoms after adenotonsillectomy.
- Delayed Sleep Phase Syndrome (DSPS) is common and can be readily treated with chronotherapy, light therapy and potentially melatonin as long as the patient is motivated.
- Educate parents and the youth on sleep needs and hygiene and refer them to appropriate sources of information (see Suggested Readings).
- Treat Parasomnias with reassurance and safety measures, using benzodiazepines sparingly for severe, potentially dangerous cases.
- Behavioral interventions are the treatment of choice for young children with bedtime struggles and frequent awakenings. Resist using medications unless the child is neuro-developmentally compromised and unresponsive to behavioral treatments.

L5: OPAL-K SLEEP MEDICATION TREATMENT ALGORITHM (v.101514)



L6: OPAL-K Sleep Disorder Medication Table (01.06.14)

Medication	FDA Approval	Dosing	Comments
Melatonin	None	0.5-9 mg prior to desired bedtime	Some studies report decrease in sleep latencies in youth with ADHD & Autism.
Diphenhydramine (Benadryl)	Available over the counter. FDA approved for allergic reactions 2yrs+	>12yrs 25-50 mg po qhs 30 minutes before desired bedtime	FDA cautions: Do not give to children 2yrs and younger
Hydroxyzine (Vistaril, Atarax)	Approved for rx of anxiety, nausea, and pruritis in 6yrs+	0.6mg/kg for presurgical sedation 25-50mg po qhs for sleep	FDA cautions: Do not give to children 2yrs and younger
Trazodone (Desyrel)	FDA approved in adults for depression	Typical doses 25-50mg po qhs for adults	Anecdotal evidence that long-term treatment is well tolerated

L7: Sleep Hygiene Checklist for Families with Children Who Can't Sleep

Living with a child who can't sleep can be very frustrating and at times overwhelming. The following checklist can help families become more effective in managing the behavior issues associated with children with sleep problems.

Checklist for parents:

- ☐ The American Academy of Pediatrics recommends that children should not have televisions, video game electronics, or electronic media residing in their room
- ☐ Help your child keep a consistent bedtime and wake time every day of the week. Late weekend nights or sleeping in till noon can disrupt school night bedtimes
- ☐ Make sure the schedule includes exercise, when to sleep, and when to eat, not too late at night.
- ☐ Avoid letting your child spend lots of awake time in their bed. Spending lots awake or time in bed may prevent the bed from being associated with sleeping
- ☐ Bedrooms should be comfortable and not be too warm or cool. Excessive lights or noise in or near the bedroom environment should be eliminated at bedtime
- ☐ Remove clocks from bedrooms of children who tend to stare or ruminate about the clock.

Checklist for younger children:

- ☐ Avoid highly stimulating or scary play, television shows, or movies just before bedtime.
- ☐ Children should be put in bed when they are drowsy, but still awake.
- ☐ Avoid allowing young children to fall asleep in any other places except their bed. Letting them fall asleep other places can form habits that are hard to break.
- ☐ If a child does not fall asleep within 20 minutes, they should be taken out of bed and engaged in low stimulation activities like reading until drowsy and then return to bed.
- ☐ When checking to see if young children are asleep, minimize any stimulation or talking.
- ☐ If you child is never drowsy at bedtime, try rescheduling bedtime later in the evening, after consistent sleep patterns arise then bedtime should be gradually advanced earlier until the desired bed time is reached.
- ☐ Sometimes providing a security or transitional object liked a stuffed animal or special blanket helps young children feel more relaxed and ready to sleep.

Checklist for older child:

- ☐ Make sure you don't eat chocolate or drink, energy drinks, coffee, caffeinated soda, or black tea
- ☐ Try to exercise everyday, this will help you sleep better, but don't exercise just prior to going to bed
- ☐ Make a bedtime routine and schedule and try hard to stick with it every night
- ☐ If you are unable to sleep because of lots of worry devise a plan with your parents, doctor or therapist
- ☐ Avoid using any electronic media entertainment or texting or internet activities at bedtime or late at night
- ☐ Get your doctor or therapist to help you learn relaxation techniques such as deep breathing or guided imagery to help you get ready for sleeping.
- ☐ Have a plan for engaging in quiet activities if you have been wide-awake over 20 minutes, then retry to sleep when drowsy.
- ☐ Keep a sleep diary to track naps, sleep times, and other activities to find patterns and target problem areas for change when sleep patterns are bad
- ☐ Use Sleep Hygiene Suggestions list

L8: Family Sleep Disorder Resources

Books

Sleeping Through the Night, Revised Edition: How Infants, Toddlers, and Their Parents Can Get a Good Night's Sleep

Author: Jodi A. Mindell, PhD

Publisher: Collins Living, 2005

Solve Your Child's Sleep Problems: New, Revised, and Expanded Edition

Author: Richard Ferber, MD

Publisher: Fireside, 2006

Take Charge of Your Child's Sleep: The All-in-One Resource for Solving Sleep Problems in Kids and Teens

Authors: Judith A. Owens, MD, and Jodi A. Mindell, PhD

Publisher: Da Capo Press, 2005

Websites

Home of the National Sleep Foundation. Excellent resource for parents and clinicians.

<http://www.sleepfoundation.org/>

Specific pediatric content from the National Sleep Foundation directed at parents, teachers and kids.

<http://sleepforkids.org/>

Content from the American Academy of Sleep Medicine for patients.

<http://sleepeducation.com/>

L 9: Clinician Sleep Disorder Resources

Books

A Clinical Guide to Pediatric Sleep: Diagnosis and Management of Sleep Problems,
Second Edition

Authors: Jodi A. Mindell, PhD, and Judith A. Owens, MD

Publisher: Lippincott Williams & Wilkins, 2010

(Practical review of pediatric sleep disorders for clinicians. Includes online access to excellent handouts and questionnaires.

Clinician's Guide to Pediatric Sleep Disorders

Editors: Mark Richardson, Norman Friedman

Publisher: Informa Healthcare, 2007

Sleep and Psychiatric Disorders in Children and Adolescents

Editor: Anna Ivanenko, MD

Publisher: Informa Healthcare, 2008

L 10 – 12: Sleep Disorders Bibliography

American Academy of Sleep Medicine. ICSD-2 - The International Classification of Sleep Disorders, 2nd ed.: Diagnostic and Coding Manual. Westchester, Illinois: American Academy of Sleep Medicine, 2007.

American Academy of Pediatrics, Section on Pediatric Pulmonology, Subcommittee on Obstructive Sleep Apnea Syndrome. Technical Report: Diagnosis and Management of Childhood Obstructive Sleep Apnea Syndrome. *Pediatrics*. 2002;109:e69-e69.

Babson KA, Feldner MT. Temporal relations between sleep problems and both traumatic event exposure and PTSD: A critical review of the empirical literature. *J Anxiety Disord*. 2012;24:1-15.

Carskadon MA. Adolescent Sleep Patterns: Biological, Social, and Psychological Influences. Cambridge: Cambridge University Press; 2002.

Chervin RD, Hedger K, Dillon JE, Pituch KJ. Pediatric sleep questionnaire (PSQ): validity and reliability of scales for sleep-disordered *breathing*, snoring, sleepiness, and behavioral problems. *Sleep Med*. 2000;1:21-32.

Garcia J, Rosen G, Mahowald. Circadian rhythms and circadian rhythm disorders in children and adolescents. *Semin Pediatr Neurol*. 2001;8:229-240.

Garstang J, Wallis M. Randomized controlled trial of melatonin for children with autistic spectrum disorders and sleep problems. *Child: Care, Health Dev*. 2006;32(5):585-589.

Gaylor EE, Goodlin-Jones BL, Anders TF. Classification of young children's sleep problems: a pilot study. *J Am Acad Child Adolesc Psychiatry*. 2001;40:61-67.

Guilleminault C, Pelayo R. Narcolepsy in children: a practical guide to its diagnosis, treatment and follow-up. *Pediatr Drugs*. 2000;2:1-9.

Halbower AC, Ishman SL, McGinley BM. Childhood obstructive sleep-disordered breathing: a clinical update and discussion of technological innovations and challenges. *Chest*. 2007;132:2030-2041.

Ivanenko A, Tauman R, Gozal D. Modafinil in the treatment of excessive daytime sleepiness in children. *Sleep Med*. 2003;4:579-582.

Jan JE, Wasdell MB, Reiter RJ, et al. Melatonin therapy of pediatric sleep disorders: recent advances, why it works, who are the candidates and how to treat. *Curr Pediatr Rev*. 2007;3:214-224.

Jan JE, Owens JA, Weiss MD, et al. Sleep hygiene for children and with neurodevelopmental disabilities. *Pediatrics*. 2008;122:1343-1350.

Johnson KP, Malow BA. Sleep in children with autism spectrum disorders. *Curr Neurology Neurosci Rep*. 2008;8:155-161.

Konofal E, Arnulf I, Lecendreux M, Mouren MC. Ropinirole in a child with attention-deficit hyperactivity disorder and restless legs syndrome. *Pediatr Neurology*. 2005;32:350-351.

Konofal E, Cortese S, Marchand M, Mouren MC, Arnulf I, Lecendreux M. Impact of restless legs syndrome and iron deficiency on attention-deficit/hyperactivity disorder in children. *Sleep Med*. 2007;8(7-8):711-715.

Kuhn BR, Elliott AJ. Treatment efficacy in behavioral pediatric sleep medicine. *J Psychosomatic Res*. 2003;54:587-597 .

Malow BA, Byars, Johnson KP, et al. A practice pathway for the identification, evaluation, and management of insomnia in children and adolescent with autism spectrum disorder. *Pediatrics*. 2012;130:S106 –S124.

Mindell JA, Emslie G, Blumer J, et al. Pharmacologic management of insomnia in children and adolescents: consensus statement. *Pediatrics*. 2006;117:e1223-e1232.

Mindell JA, Owens JA. *A Clinical Guide to Pediatric Sleep: Diagnosis and Management of Sleep Problems*. Philadelphia: Lippincott Williams & Wilkins; 2003.

Mitchell, RB. Adenotonsillectomy for obstructive sleep apnea in children: outcome evaluated by pre- and postoperative polysomnography. *Laryngoscope*. 2007;117:1844-1854.

Murali H, Kotagal S. Off-label treatment of severe childhood narcolepsy-cataplexy with sodium oxybate. *Sleep*. 2006;29:1025-1029.

O'Brien LM, Holbrook CR, Mervis CB, et al. Sleep and neurobehavioral characteristics of 5- to 7-year-old children with parentally reported symptoms of attention-deficit/hyperactivity disorder. *Pediatrics*. 2003;111:554-563.

Owens JA, Rosen CL, Mindell JA. Medication use in the treatment of pediatric insomnia: results of a survey of community-based pediatricians. *Pediatrics*. 2003;111: e628-e635.

Owens JA, Spirito A, McGuinn M. The Children's Sleep Habits Questionnaire (CSHQ): psychometric properties of a survey instrument for school-aged children. *Sleep*. 2000;23:1043-1051.

Owens JA, Dalzell V. Use of 'BEARS' sleep screening tool in a pediatric residents continuity clinic: a pilot study. *Sleep*. 2005;6:63-69.

Picchietti DL, Allen RP. Restless Legs Syndrome: Prevalence and Impact in Children and Adolescents—The Peds REST Study. *Pediatrics*. 2007;120: 253-266.

Reed MD, Findling RL. Overview of current management of sleep disturbances in children: pharmacotherapy. *Current Ther Res: Clin Exper*. 2002;63:B18-B37.

Rosen CL, Owens JA, Mindell JA, Xue W, Kirchner HL. Use of pharmacotherapy for insomnia in children and adolescents: a national survey of child psychiatrists. *Sleep*. 2005;28 (abstract supplement):A79-79.

<http://www.journalsleep.org/PDF/AbstractBook2005.pdf>

Sheldon SH, Ferber R, Kryger MH. *Principles and Practice of Pediatric Sleep Medicine* Elsevier Saunders; 2005.

Smits MG, van Stel HF, van der Heijden K, Meijer AM, Coenen AM, Kerkhof GA. Melatonin improves health status and sleep in children with idiopathic chronic sleep-onset insomnia: a randomized placebo-controlled trial. *J Am Acad Child Adolesc Psychiatry*. 2003;42:1286-1293.

Super E, Johnson KP. Pediatric Sleep Problems. Chapter 20 from *Child and Adolescent Psychiatry: The Essentials*, 2nd Edition. Editors: Cheng K, Myer K. 2011: 351-379.

Szeinberg A, Borodkin K, Dagan Y. Melatonin treatment in adolescents with delayed sleep phase syndrome. *Clin Pediatrics*. 2006;45:809-818.

Vriend J, Corkum P. Clinical management of behavioral insomnia. *Psychol Res Beh Management*. 2011;4:69-79.

Weiss MD, Wasdell MB, Bomben MM, Rea KJ, Freeman RD. Sleep hygiene and melatonin treatment for children and adolescents with ADHD and initial insomnia. *J Am Acad Child Adolesc Psychiatry*. 2006;45:512-519.

Wills L, Garcia J. Parasomnias: epidemiology and management. *CNS Drugs*. 2002;16:803-810.