

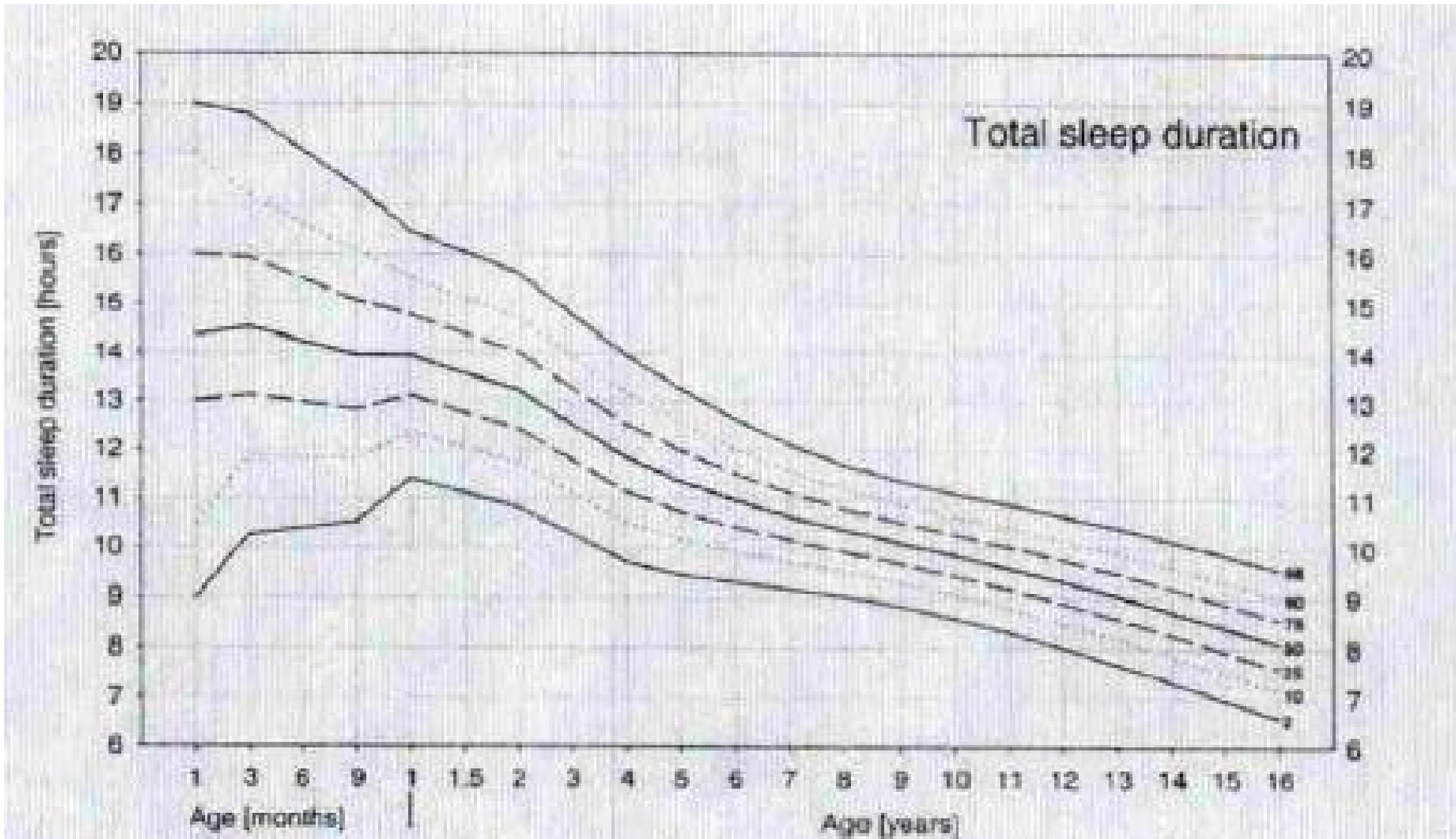
# Sleep Disorders in Children and Adolescents

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At the end of this presentation the audience will be able to:

1. Identify why sleep is important and the effects of poor sleep
2. Be familiar with different diagnostic criteria for sleep disorders (e.g. DSM5, ICSD)
3. Explain sleep hygiene practices and other treatments for sleep disorders

How much sleep do I need?



## Why is sleep so important for Kids?

- ▶ Too little sleep = daytime sleepiness, poor performance in school
- ▶ Behavior problems: poor attention, impulse control, behavior regulation,
- ▶ Experimental studies have shown sleep deprivation => sleepiness, inattention, less positive affect/increase anger, decrease EF, decrease performance in classroom
- ▶ Longitudinal associations between childhood sleep problems and mood, attention, and behavior problems

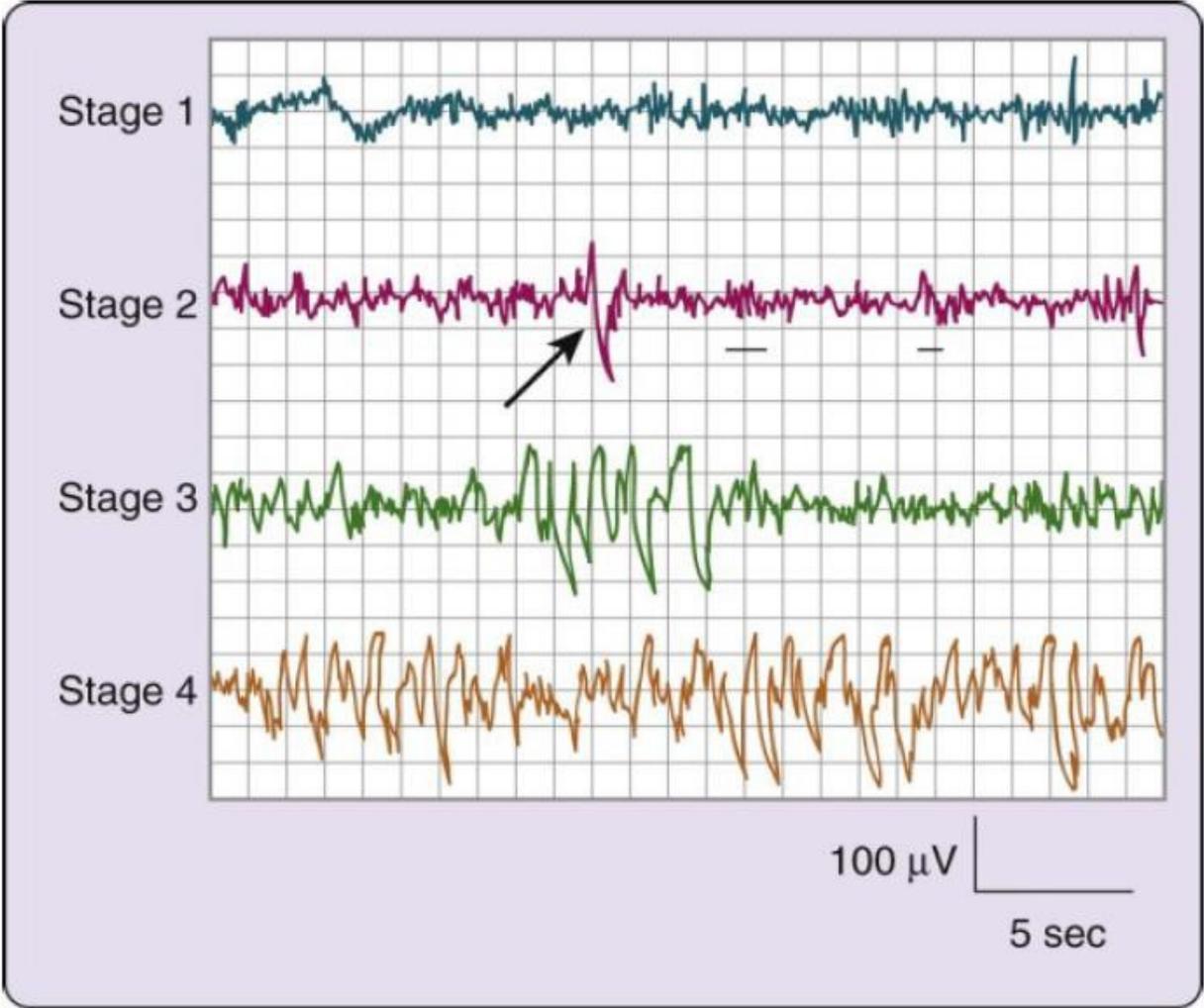
Why is sleep so important for Adults?

- ▶ Experimental sleep deprivation = cognitive and psychomotor slowing, decreased working memory, poor cognitive flexibility, poor situational awareness, poor emotion recognition, deficits in memory consolidation
- ▶ Neuroimaging: alterations in neural processing => compensatory response

## Question 1

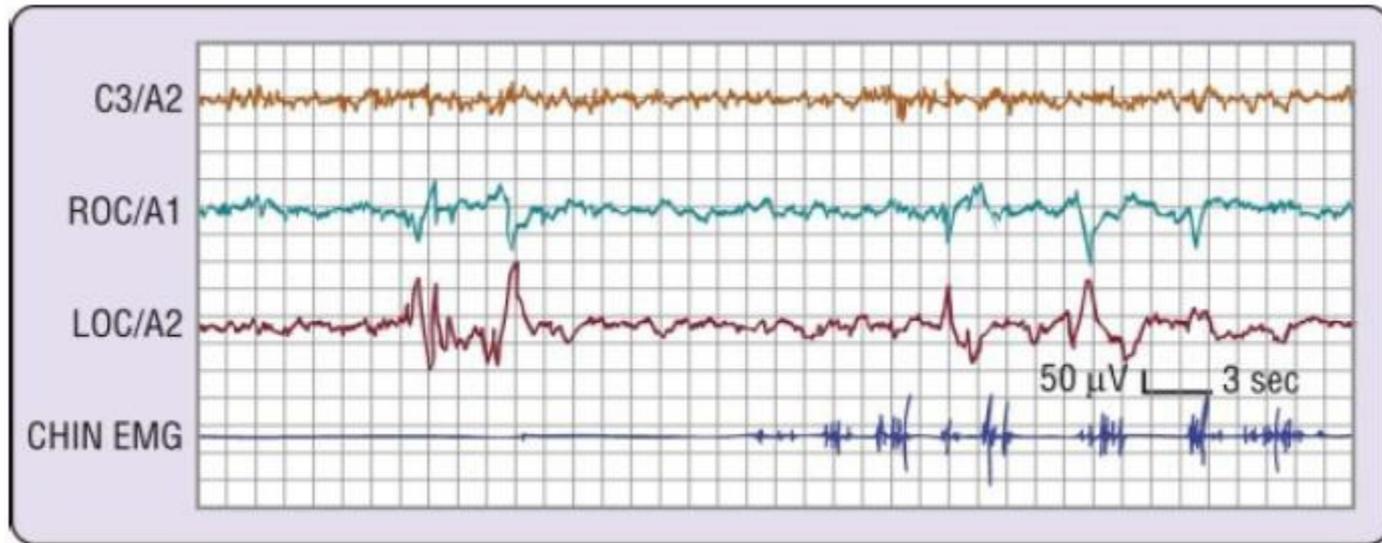
- ▶ Poor sleep over the long term is associated with:
  - A. Difficulties in school
  - B. Increased driving accidents
  - C. Increase behavioral and emotional problems
  - D. All of the above

# EEG Patterns of NREM Sleep

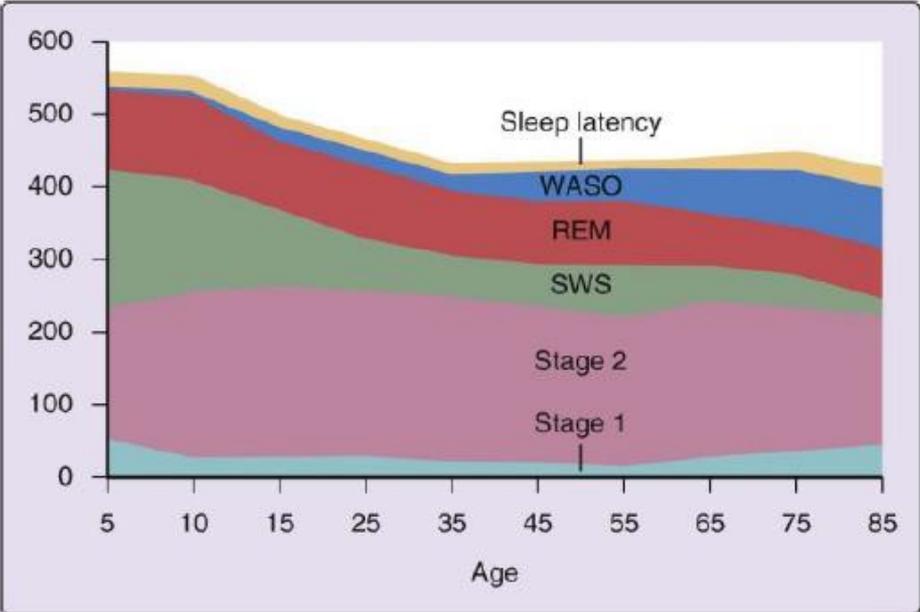
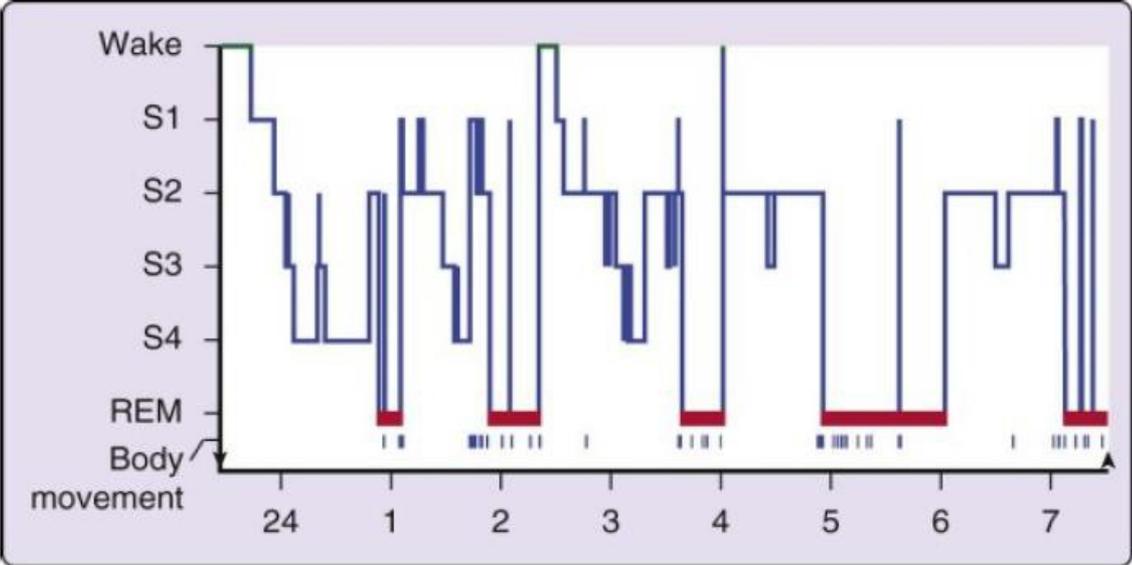


(Beebe, 2013; Carskadon & Dement, 2011)

## Patterns of REM Sleep



How long do we spend in each stage?



(Carskadon & Dement, 2011; Ohayon, Carskadon, Guilleminault, & Vitiello, 2004)

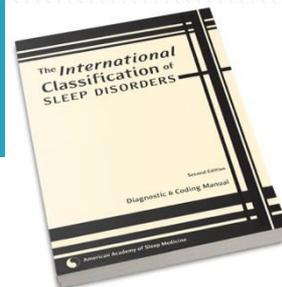
## DSM-IV TR DSM-5 and ICSD-2

- ▶ Primary Sleep Disorders
  - Dyssomnias
  - Parasomnias
- ▶ Sleep Disorder related to another mental condition
- ▶ Sleep disorder due to a general medical condition
- ▶ Substance-Induced Sleep Disorder

DSM-IV-TR

- ▶ Insomnia Disorder
- ▶ Hypersomnolence Disorder
- ▶ Narcolepsy
- ▶ Breathing-Related Sleep Disorder
- ▶ Circadian Rhythm sleep-wake disorder
- ▶ Non REM-sleep arousal disorders
- ▶ Nightmare disorder
- ▶ REM sleep behavior disorder
- ▶ Restless legs syndrome
- ▶ Substance/medication induced sleep disorder

DSM-5



# Disorders of Sleep in DSM5 (and ICSD)

1. Insomnia (**Insomnia**): difficulty with sleep onset or maintenance or early morning awakening
  - Behavioral Insomnia of Childhood (BIC), limiting setting type and sleep onset association type
  - Adjustment insomnia
  - Psychophysiological Insomnia

# Disorders of Sleep in DSM5 (and ICSD)

2. Hypersomnolence Disorder (**Hypersomnias of central origin**): After 7 hrs of sleep: lapsing into sleep, nonrestorative, not fully awake
3. Narcolepsy: Irrepressible need to sleep with at least one of: cataplexy, hypocretin deficiency, PSG showing REM latency < 15 min

# Disorders of Sleep in DSM5 (and ICSD)

4. Breathing Related Sleep Disorders (**Sleep-related breathing disorders**)
  - Obstructive Sleep Apnea Hypopnea (OSA): nighttime breathing disturbance (snores, snorting/gasping, breathing pauses)
  - Central Sleep Apnea: periodic breathing
  - Sleep Related Hypoventilation: decreased respiration with elevated CO<sub>2</sub>

# Disorders of Sleep in DSM5 (and ICSD)

- 5. Circadian rhythm sleep-wake disorders (**Circadian rhythm sleep disorders**): misalignment of internal body clock leading to excessive sleepiness or insomnia
  - Delayed Sleep Phase
    - Normal teenagers vs. Delayed Sleep Phase
  - Advanced Sleep Phase
  - Irregular Sleep–Wake Type
  - Non 24–hour Sleep–Wake Type
  - Shift Work Type

6. Parasomnias (**Parasomnias**) : Undesirable physical or experiential events that accompany asleep
- NREM sleep arousal disorders
    - Sleepwalking
    - Sleep (night) terrors)
  - Nightmare Disorder
  - REM sleep behavior disorder

# Disorders of Sleep in DSM5 (and ICSD)

7. Restless legs syndrome (**Sleep related movement disorders**) : recurrent, involuntary movements during sleep (or while awake) in the legs
  - **Periodic Limb Movement Disorder**: repetitive limb movements **only** during sleep about 20–40 seconds apart

# Disorders of Sleep in DSM5 (and ICSD)

8. Sleep Enuresis (bed wetting): Need medical consultation if age > 5 years
9. Sleep Encopresis (defecation): Need medical consultation if age > 4 years (and toilet trained)
10. Substance/medication induced sleep disorder, Unspecified or other disorders
11. Isolated symptoms: snoring, sleep talking, myoclonus disorders
12. Other sleep disorders

# Question 1

- ▶ The most common sleep problem in children is:
  - A. Restless leg syndrome
  - B. Behavioral insomnia of childhood
  - C. Narcolepsy
  - D. Obstructive Sleep Apnea (OSA)

# Sleep Hygiene (Behavioral Treatment for Sleep Disorders)

- ▶ Things to avoid:
  - Caffeine later in the day
  - Bright light and exercise in the evening
  - Cigarette smoke
  - Minimize screen time (phones, tablets, computers, laptops, reading devices with backlight)

# Sleep Hygiene

- ▶ Things to do:
  - Have a “wind-down” routine
  - Sleep setting is comfortable
  - Consistent sleep schedule (even on the weekends!)
  - Adjust sleep duration and schedule to child

# Other Interventions for Sleep (Always consult a physician)

- ▶ Medications (see also table from Owens 2009)
  - Melatonin (OTC); helps fall asleep *not stay asleep*
  - Antihistamines (e.g. Benadryl)
  - Benzodiazepines (e.g. Klonopin)
  - Non-Benzodiazepines (e.g. Ambien, Sonata, and Lunesta)
  - Others (e.g. Rozerem, Catapres, Trazadone)
  - Herbals?
- ▶ Continuous Positive Airway Pressure (CPAP) for OSA; also Nasal PAP
- ▶ Bright light therapy

## Question 3

- ▶ Good sleep hygiene includes all of the following except:
  - A. Avoiding coffee within 6 hours of bedtime
  - B. Having a consistent bedtime routine
  - C. Doing jumping jacks before bed to tire kids out
  - D. Waking up at the same time on weekends

# What do you do when your patient or their parent complains about sleep?

- ▶ Provide psychoeducation about sleep hygiene
- ▶ Recommend they talk to their pediatrician or PCP *who may refer* for a sleep study.
  - Accredited Sleep Centers in NM (or within 100 miles of)
    - Sleep Disorders Center at UNM\*
      - Also in ABQ: New Mexico Center for Sleep Medicine @ ABQ Health Partners, Omnisleep Medicine Center\*, Presbyterian Sleep Disorders Center\*
    - Sante Fe/Taos/Los Alamos: Christus St. Vincent\*, Southwestern Sleep Center\*
    - Farmington: Four Corners Sleep Disorders Center (Durango CO)
    - Los Cruces: Sleep Lab of Las Cruces\*, Sun City Sleep Center, El Paso Sleep Center, Texas Neurodiagnostic, Del Sol Sleep Disorders Center
    - \*Offers in-home sleep testing
  - Visit <http://www.sleepeducation.com/find-a-center> to find more accredited sleep centers

# Resources

- ▶ American Academy of Sleep Medicine: <http://www.aasmnet.org>
- ▶ National Sleep Foundation:  
<http://www.sleepfoundation.org/healthcare-professionals>
- ▶ Sleep Research Society: <http://sleepresearchsociety.org/>
- ▶ “ICSD-lite”
  - Thorpy, M. J. (2012). Classification of sleep disorders. *Neurotherapeutics*, 9(4), 687–701. doi: 10.1007/s13311-012-0145-6
- ▶ More info (geared towards therapists)
  - Behavioral Treatments for Sleep Disorders: A Comprehensive Primer of Behavioral Sleep Medicine Interventions (2010) by Michael L. Perlis, Mark Aloia, and Brett Kuhn
- ▶ More info (geared toward physicians/medical providers)
  - Ramar, K., & Olson, E. J. (2013). Management of common sleep disorders. *Am Fam Physician*, 88(4), 231–238.
  - A Clinical Guide to Pediatric Sleep (2010) by Jodi Mindell and Judith Owens

# Resources for parents

- ▶ Solve Your Child's Sleep Problems (2006) by Richard Ferber
- ▶ Take Charge of Your Child's Sleep (2005) by Judy Owens and Jodi Mindell
- ▶ Sleeping Through the Night (2005) by Jodi Mindell
- ▶ Complete Idiot's Guide to Sleep Training for Your Child (2006) by Melissa Burnham and Jennifer Lawler

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