SLEEP: INFANTS AND YOUNG CHILDREN

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OBJECTIVES

• Review normal sleep patterns of infants and young children
• Describe ways to educate parents on their children’s sleep
• Examine common sleep problems in young children
• Learn ways to assess sleep in young children
• Begin to understand the treatment models for sleep disorders in infants and young children
SLEEP

• Every living creature needs to sleep.
• The primary activity of the brain in early development
• Sleep is especially important for children as it directly impacts mental and physical development.
• What do we look like without sleep?
  • Inattentive
  • Irritable
  • Hyperactive
  • Impulse control problems
• Sound like something else?
CIRCADIAN RHYTHMS

- The sleep-wake cycle
  - regulated by light and dark
  - Takes time to develop
    - Results in the irregular sleep schedules of newborns
    - Begin to develop at about six weeks
    - By three to six months most infants have a regular sleep-wake cycle
  - 50 minutes in babies
  - 90 minutes in preschool age
SLEEP

- By the age of two, most children have spent more time asleep than awake
  - A child will spend 40 percent of his or her childhood asleep.
LET’S REVIEW THE STATES OF SLEEP

• Non-Rapid Eye Movement (NREM)
  • "quiet, “ deep sleep
  • blood supply to the muscles is increased, energy is restored, tissue growth and repair occur, and important hormones are released for growth and development.

• Rapid Eye Movement (REM)
  • "active" sleep
  • brains are active and dreaming occurs
  • bodies become immobile, breathing and heart rates are irregular
  • About 50% of newborns sleep time and 30% of 6 month old
SLEEP BY AGE

Your Child’s Sleep

The AASM recommends that your child get the following amounts of sleep at each stage of growth.

Photos courtesy of Shutterstock.com

14-15 hours - Infants
12-14 hours - Toddlers
11-13 hours - Preschoolers
10-11 hours - School-age children
9-10 hours - Teenagers
SLEEP AND NEWBORNS (0-3 MONTHS)

• Sleep occurs around the clock
• Sleep-wake cycle interacts with the need to be fed, changed and nurtured.
• Sleep a total of 10.5 to 18 hours a day on an irregular schedule
  • Periods of one to three hours spent awake
  • The sleep period may last a few minutes to several hours.
SLEEP AND NEWBORNS (0-3 MONTHS)

• During sleep
  • often active: i.e. twitching their arms and legs, smiling, sucking and generally appearing restless.

• How to know they are tired
  • fussiness
  • crying
  • rubbing eyes
  • individual gestures.

• Teaching sleep patterns
  • During the day - expose them to light and noise
  • Play more
  • In the evening make the environment quieter and dimmer with less activity.
FOR PARENTS:
SLEEP TIPS FOR NEWBORNS

• Observe baby’s sleep patterns and identify signs of sleepiness.
• Put baby in the crib when drowsy, not asleep.
  • More likely to fall asleep quickly
  • Teaches them how to get themselves to sleep.
• Place baby to sleep on his/her back with face and head clear of blankets and other soft items.
• Encourage nighttime sleep.
SLEEP AND INFANTS (4-11 MONTHS)

- Sleep 9-12 hours during the night
- 1-4 naps a day lasting 30 minute to two-hour naps
  - decrease as they reach age one.
- By 6 months nighttime feedings are usually not necessary and many infants sleep through the night
- By 9 months 70-80 % will sleep through the night
- Self soothers
  - Babies who are able to fall asleep independently at bedtime and put themselves back to sleep during the night.
SLEEP AND INFANTS (4-11 MONTHS)

- Social and developmental issues can affect sleep.
  - Secure infants who are attached to their caregiver may have less sleep problems, but some may also be reluctant to give up this engagement for sleep.
  - During the second half of the year, infants may also experience separation anxiety.
    - Important occurrences at 7-9 months
      - Stranger anxiety/separation protest
      - Object permanence
      - Discovery of intersubjectivity
      - Onset of focused attachment
  - Increased motor development may also disrupt sleep.
    - Why sleep when we can now move?
FOR PARENTS:
SLEEP TIPS FOR INFANTS

- Develop regular daytime and bedtime schedules.
- Create a consistent and enjoyable bedtime routine.
- Establish a regular "sleep friendly" environment.
- Encourage baby to fall asleep independently and to become a "self-soother."
SLEEP AND TODDLERS (1-2 YEARS)

- Toddlers need about 11-14 hours of sleep in a 24-hour period.
- 18 months
  - naptimes will decrease to once a day lasting about one to three hours.
- Naps should not occur too close to bedtime as they may delay sleep at night.
SLEEP AND TODDLER

- Developmental changes
  - Toddlers' drive for independence/autonomy
  - An increase in their motor, cognitive and social abilities
  - Ability to get out of bed
  - The development of the child's imagination

“Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world.”

-- Albert Einstein

“The true sign of intelligence is not knowledge but imagination.”

-- Albert Einstein

Logic will get you from A to B. Imagination will take you everywhere.

-- Albert Einstein
FOR PARENTS:
SLEEP TIPS FOR TODDLERS

• Maintain a daily sleep schedule and consistent bedtime routine.
• Make the bedroom environment the same every night and throughout the night.
• Set limits that are consistent, communicated and enforced.
• Encourage use of a security object such as a blanket or stuffed animal.
SLEEP AND PRESCHOOLERS (3-5 YEARS)

- Preschoolers typically sleep 11-13 hours each night
- Most preschoolers do not nap after five years of age.
FOR PARENTS:
SLEEP TIPS FOR PRESCHOOLERS

• Maintain a regular and consistent sleep schedule.
• Have a relaxing bedtime routine that ends in the room where the child sleeps.
• Child should sleep in the same sleeping environment every night, in a room that is cool, quiet and dark – and without a TV.
SLEEP PROBLEMS IN INFANTS AND YOUNG CHILDREN
SLEEP PROBLEMS

- Infants
  - Signalers
    - Unable to self soothe
- Toddlers
  - Resisting going to bed
  - Nighttime awakenings
  - Nighttime fears and nightmares are common.
- Signs of a sleep problem
  - Daytime sleepiness
  - Behavior problems
SLEEP PROBLEMS

- Preschoolers (3-5)
  - difficulty falling asleep and waking up during the night are common
  - further development of imagination
    - nighttime fears and nightmares.
  - Sleep terrors peak during preschool years.
  - Sleep walking
RECOGNIZING AND TREATING SLEEP DISORDERS

- Screening Tool for PCP’s – B.E.A.R.S.
  - Bedtime issues
  - Excessive daytime sleepiness
  - Awakenings/abnormal behaviors during sleep
  - Regularity and duration of sleep
  - Snoring

- Sleep History
  - History of sleep problems
  - Sleep-wake schedule
  - Bedtime routines
  - Bedtime environment
  - Other sleep related symptoms (i.e. restless leg, parasomnias)
  - Medications
  - Medical and psychiatric history
**BEDTIME PROBLEMS**

- 20-30% of infants, toddlers, and preschoolers
- Step One – Sleep Diary

<table>
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<th>DATE</th>
<th>TIME</th>
<th>MINUTES (Breastfeeding)</th>
<th>OUNCES (Bottles)</th>
<th>SLEEP</th>
<th>WET</th>
<th>POOP</th>
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<td>10 min</td>
<td>10:00</td>
<td>11:30</td>
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<td>1:00</td>
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*Only a sample, not to be used as medical reference*
# SLEEP DIARY

**Child:** Jessica  
**Week Of:** September 10 - 16

<table>
<thead>
<tr>
<th>Day</th>
<th>Time Put To Bed</th>
<th>Time Fell Asleep</th>
<th>Nighttime Waking (time/how long)</th>
<th>Describe Nighttime Waking</th>
<th>Time Awoke</th>
<th>Describe Any Naps</th>
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# Sleep Patterns Chart

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<th>8</th>
<th>10</th>
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</tbody>
</table>

- **D** Indicates time you put your child down for bed
- **U** Indicates time your child woke up
- **Indicates child asleep**
- **Indicates child awake**
PRACTICE PARAMETERS

• Practice Parameters for Behavioral Treatment of Bedtime Problems and Night Waking in Infants and Young Children
  • Evidence using evaluation of 52 articles
  • 0-4y11m

• Behavioral interventions are effective and recommended in the treatment of sleep problems in young children
  • 94% reported clinically significant improvements
  • 3 studies showed equivocal findings
UNMODIFIED EXTINCTION

• Goal – reduce undesired behaviors by eliminating reinforcement
• i.e. parents put child to bed at bedtime and ignore behaviors
• Generally effective
• Not generally accepted by parents
• Adaptation – parental extinction with parental presence
PARENT EDUCATION/PREVENTION

- Giving info on bedtime routines, sleep schedules, and acquisition of self soothing skills on the part of the infant or child
- Cost effective
- Can include individual sessions, groups, or education booklets
GRADUATED EXTINCTION

• Goal – graduated extinction is to enable a child to develop the ability to fall asleep independently without requiring intervention

• Ignore crying and tantrums for a specific period – fixed or graduated schedules

• Sleep training
DELAYED BEDTIME

• Temporarily delaying child’s bedtime – closer to actual sleep onset
• Take child out of bed for a specific time period if sleep onset is not achieved within a certain amount of time
• Positive bedtime routines
• Goal is to reduce physiologic arousal at bedtime
SCHEDULED AWAKENING

- Documentation of the pattern of night wakings
- Institution of preemptive waking of the child by the parent prior to the expected time of those awakenings
- Fading out of awakenings over time
- Less acceptable to parents
- May have less utility in young children
NIGHTTIME FEARS

• Positive self talk and coping thoughts
• Desensitization and reinforcement
• Relaxation
  • Deep breathing
  • Progressive muscle relaxation
• Avoid scary content on television during the day
• Exposure
  • Scavenger hunts for toys in the dark
  • Hide and seek in the dark
NIGHTTIME FEARS

- Huggy puppy intervention
  - Children are given a stuffed dog
  - 2 variations
    - Children are told that the dog has a fear of the dark and the child can protect the animal
    - Children are told that the dog will protect them
  - Both groups had a significant improvement in fears over placebo group
    - Sustained at 6 months

Kushnir and Sadeh, 2012
SLEEP DISORDERS IN OLDER CHILDREN
NIGHT TERRORS

- Sudden, partial arousal associated with emotional outbursts, fear, and motor activity.
- Usually children ages 4–8
- During NREM sleep
- Child has no memory of night terrors once fully awake.

Treatment
- Make sure child is comfortable but do not wake the child.
- Rarely require medical intervention
SLEEP WALKING

- Most common among 8–12 year-olds
- Typically, the child sits up in bed with eyes open but unseeing or may walk through the house.
- Their speech is mumbled and unintelligible.
- Usually children will outgrow sleepwalking by adolescence.

Treatment

- Safety precautions (e.g., using a first floor bedroom),
- Awakening the child on a regular schedule can reduce or eliminate episodes
NIGHTTIME BEDWETTING

• Common sleep problem in children ages 6–12
• only during NREM sleep
• Primary enuresis
  • the child has never been persistently dry at night
  • associated with a family history of the problem, developmental lag, or lower bladder capacity
  • unlikely to signal a serious problem
• Secondary enuresis
  • a recurrence of bedwetting after a year or more of bladder control
  • more likely to be associated with emotional distress
  • determine any source of emotional stress and address it directly
• Interventions
  • use of reinforcement and responsibility training (such as keeping a dry night chart)
  • bladder control training
  • conditioning (e.g., bedwetting alarms)
  • sometimes medication
SLEEP-ONSET ANXIETY

- Difficulty falling asleep because of excessive fears or worries
- May be caused by stressful events or trauma or because of ruminating
- Most common among older elementary school children

Interventions

- Reassurance
- Calming bedtime routines
- Cognitive-behavioral therapy
OBSTRUCTIVE SLEEP APNEA

• 1–3% of children experience difficulty breathing because of obstructed air passages

• Symptoms
  • Snoring
  • difficulty breathing during sleep
  • mouth breathing during sleep
  • excessive daytime sleepiness

• Usually not serious

• Most benefit from tonsillectomy/adenoidectomy

• When surgery is not effective - CPAP
NARCOLEPSY

• Rare but potentially dangerous, neurologically based genetic condition
  • sleep attacks (irresistible urges to sleep)
  • sleep-onset paralysis
  • sleep-onset hallucinations
• Affects 1 of every 2,000 adults
• May first appear in adolescence
• Treatment options:
  • a full 12 hours of sleep per night or more
  • scheduled naps
  • medication
DELAYED SLEEP-PHASE SYNDROME

• A circadian rhythm disorder
• An inability to fall asleep at a normal hour
• Results in difficulty waking up in the morning
• Symptoms among children:
  • excessive daytime sleepiness
  • sleeping until early afternoon on weekends
  • truancy and tardiness
  • poor school performance
DELAYED SLEEP-PHASE SYNDROME

- Treatment options
  - Light therapy: exposure to very bright light in the morning
  - Chronotherapy: gradually advancing the child’s sleep schedule 1 hour per night until a normal routine is achieved
  - maintaining a consistent sleep schedule
  - a short course of sedative medication to help achieve a new schedule
  - It may be necessary and beneficial to (temporarily) adjust the child’s school day to allow for a later start.
Counting Sheep
It got a lot scarier when I imagined I was a blade of grass on the other side of the fence.