The Power of Sleep: Supporting Healthy Sleep in Children with Autism Spectrum Disorders

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Sleep 101

- Why do we sleep?
  - Alertness/performance
  - Memory, concentration, creativity
  - Better health
  - Mood

Sleep Is Needed To:

- Remember what we learned
- Organize our thoughts
- Engage in tasks of executive functioning
- React quickly
- Work accurately and efficiently
- Think abstractly
- Be creative

NREM vs. REM

NREM/SWS
- Breathing and heart rate are regular
- Brain waves are large and slow
- Movement is possible
- Confused and slow transition to alertness

REM
- Breathing and heart rate are irregular
- Brain waves are active
- Unable to move
- Once awake, quickly become alert
- Rapid Eye Movement
- Dreams

Circadian Rhythms

- Occur about every 24 hours
- Sleeping and waking
- Activity and rest
- Hunger and Eating
- Fluctuations in Body Temperature
- Hormone Release
Circadian Rhythm of Sleep and Wakefulness

- Bimodal
- Circadian Trough—maximum sleepiness
- Circadian Peak—maximum alertness

Zeitgebers

- Light
- Time Cues
- Social Demands

Sleep Needs

- Toddlers (12 months to 3 years)—9 ½ to 10 ½ hours plus 2-3 hours for naps
- Preschoolers (3 to 5 years)—9 to 10 hours at night; naps decrease from 1 to none
- School-Aged Children (6 to 12 years)—9 to 10 hours
- Adolescents (12 to 18 years)—9 to 9 ¼ hours (the actual average is 7 to 7 ½ hours)

Sleep Difficulties and ASD

- Prevalence estimates range from 44% to 80%.

Melatonin

- Pineal Gland
- Produced when it is dark
- Light suppresses Melatonin secretion

Why?

- Circadian rhythm abnormalities
- Abnormal patterns of melatonin production and secretion
- Anomalies in circadian clock genes
- Decreased awareness of and sensitivity to social and environmental factors (lower levels of “entrainment”)
### Most Common Difficulties
- Irregular sleep-wake cycles
- Difficulty settling and delayed sleep onset
- Frequent, prolonged, and disruptive nightwakings
- Short sleep duration
- Early morning waketimes

### Medical Considerations
- Gastrointestinal Issues
- Epilepsy
- Pain/Discomfort
- Nutritional Issues
- Sleep Disorders (sleep disordered breathing, restless legs)
- Consideration of psychiatric/behavioral conditions
- Review of medications

### Components of Successful Sleep
- Daytime habits
- Evening habits
- Sleep environment
- Bedtime routines

### Behavioral Treatment Works!
- Behavioral treatment produces reliable and durable changes (80% of children improve)
- 94% of studies report intervention was efficacious

### What do We need to Know?
- Sleep Habits
  - Sleep schedule
  - Co-sleeping
  - Bedtime
- Evening Activities
- Bedtime Routines
- Bedtime Stalling
- Latency to sleep onset

- Nocturnal behaviors
  - Night wakings
  - Parasomnias
  - Snoring/breathing pauses/sweating/restlessness

### Daytime Factors
- Exercise
- Light
- Caffeine
- Naps
- Bedroom use
- Anxiety
Evening Habits

- Limit stimulating activities
- Less light
- Routines

Sleep Environment

- Temperature
- Texture
- Sound
- Minimal Light

Bedtime Routines

- Consistent bedtime
- Calming activities
- Use of a visual schedule
- Limit electronic sleep aids
- Rituals
- Responses

Teaching a Schedule for an Evening Routine

- Choose one cue to prompt schedule checking
- Use physical prompts rather than verbal prompts
- Physical prompts should be delivered from behind the child
- Only the child should manipulate the schedule
- Place schedule in a convenient and central spot
- Display the schedule in the same location every day
- Reward the child for following the schedule
- Intersperse preferred activities with less preferred activities
- Start by using the same picture consistently to represent the same activity
- A variety of techniques can be used to make schedule cards
Sensory Strategies

- Rocking and Swinging
- Snuggling
- Massaging
- Listening to music
- Calming scents
- Wearing a weighted vest
- Chewing gum, vinyl tubing, or crunchy/chewy food

Timing

- Sleep needs for children with ASD
- When is bedtime?
- The forbidden zone

Sensory Strategies

- Clothing
- Bedding
- Weighted blankets
- Mattresses
- Bed tents
- Night lights
- White noise

Sleep Resistance?

- Why?
  - Not sleepy
  - Anxious

Strategies for Sleep Resistance

- Unmodified extinction (cry it out)
- Graduated extinction (checking method)
- Rocking chair method
- Rewards
Understanding Night Wakings

- Begin at bedtime (Durand, 1998)
- Respond quickly to distress
- Brief and boring
- Use of visual aids and social stories
- May get worse before getting better
- Rewards

Early Morning Awakening

- Different from night wakings
- Consider possibility of depression/anxiety
- Delay bedtime
- Learning to stay in bed or play quietly
- Rewards

The Bedtime Pass

- Bedtime pass


Behavioral Case Examples

- Danny, age 6, takes over an hour to fall asleep every night. He calls for his parents repeatedly once he is in bed and complains that he doesn’t feel sleepy.
- Jenny, age 8, cannot fall asleep in her bedroom unless she is watching television and her overhead light is on. She takes a long time to fall asleep and wakes up frequently during the night.

Safety Issues

- Child-proof doors and cabinets
- Baby monitor
- Alarm or bell on child’s door
Sleep Strategies for Teens

- Establish a good sleep environment
- Increase exercise
- Limit caffeine
- Avoid stimulating or difficult activities before bed
- Develop consistent bedtime and waketime routines
- Avoid naps or use them carefully
- Eat meals at consistent times
- Consider light exposure close to bedtime

AS ATN Toolkits

Sleep Toolkit:
http://www.autismspeaks.org/docs/sciencedocs/atn/sleep-tool-kit.pdf

Quick Tips:
http://www.autismspeaks.org/sites/default/files/images/3_sleep_quick_tips_pc_updated_1-23-2013.pdf

www.autismspeaks.org