Sleep & Autism

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Sleep and Autism: Introduction

- Getting children to sleep is not easy for parents of typical children
- Children with ASD present an even more complicated challenge when it comes to sleep
- Part of every evaluation in my office involves an exploration of how children with ASD are sleeping
- I'll review the science of sleep in young children (up to age 7) with ASD and share my growing experience with sleep disorders
- Focus will be on simple, practical sleep advice for parents of children with ASD to solve the most common sleep disturbances

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Sleep and Autism: Overview

- Sleep basics: Sleep cycle and autism sleep research
- Impact of sleep disorders
- Causes of insomnia medical and behavioral
- Problems falling asleep, staying asleep or both
- Prevention of sleep problems: Sleep hygiene
- Behavioral approaches for sleep
- Family systems issues and sleep
- Medications for sleep
- When to refer?

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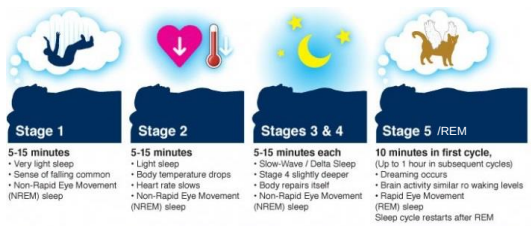
Sleep: The Basics



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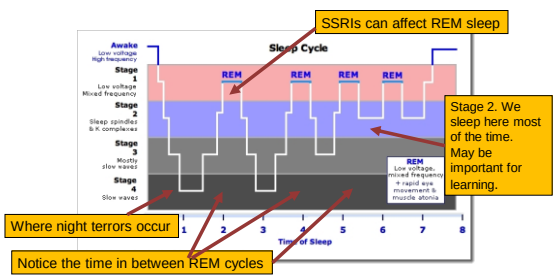
The Sleep Cycle



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Sleep and Autism: Research

- Genetic determinants of sleep may affect melatonin levels and sleep cycle regulation. But more study is needed.
- 50-80% of children with ASD have problems falling or staying asleep (compared to 9%-50% in typical children)
  - Sleep problems can persist > 8 years old
  - Cognitive levels are NOT correlated with sleep disorders

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Impact of Sleep Disorders in ASD: Research

- Increase stress and daily hassles
- Maternal stress and parental sleep disruption
- Short sleep duration
  - Increase in stereotypies and repetitive behavior
  - Higher autism severity scores
  - Social skills deficits
- Worsen daytime behavior

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Impact of Sleep Disorders in ASD

- ADHD symptoms
  - Hyperactivity
  - Poor focus
  - Distractibility
  - Impulsivity
- Increase behavior problems
  - Moodiness, anxiety, dysregulation
  - Aggression
  - Decrease adaptive skills
- Children taking medication for sleep have worse behavior problems
  - We are too quick to give meds and not take the time to figure out what is going on

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Causes of Insomnia: Medical

- Aberrations in neurotransmitter systems (melatonin)
- Medical conditions
  - Epilepsy, GI disorders (reflux), Restless leg syndrome
  - Sleep apnea—*snoring?* Obstructive Sleep Apnea (OSA)?
    - Obesity, hypotonia
  - Pain
  - Dental issues
  - Eczema
  - Constipation
  - Otitis
  - Reactive airways disease

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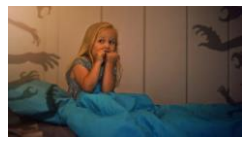
Causes of Insomnia: Physical and Psychiatric

- Food related causes
  - Hunger
  - Iron deficiency
    - Restless leg syndrome
- Psychiatric co-morbidities
  - Anxiety—especially Asperger's
  - Depression
  - ADHD
  - OCD
  - Psychiatric and neurological medications
    - Keppra



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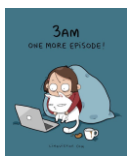
Causes of Insomnia in ASD: Behavioral

- Problems with emotional regulation
- Problems with transitions
- Developmental delays and inappropriate expectations (age-ism)
- Perseveration—Finally get a chance to stim or script
- Exposure to media before (or after!) bedtime. . . . .
- Poor bedtime hygiene
- Poor behavioral/developmental approach
- Family systems issues



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Research: Types of Sleep Disorders

- Trouble falling asleep (delayed sleep onset)
  - Bedtime resistance
  - Decreased sleep efficiency (trouble falling asleep once in bed)
  - Decreased sleep duration and continuity (early risers)
- Trouble staying asleep
  - Increased night waking and wandering
  - Restless sleep (whenever the parent tell me this I suspect co-sleeping)

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Evaluation of Sleep in Children with ASD

- Parents can keep a sleep diary
  - Sleep latency—actually falling asleep
  - Total sleep time
  - Night waking
  - Response to treatment
- "Children's Sleep Habits Questionnaire"
- Polysomnography (clinic) and actigraphy (home)

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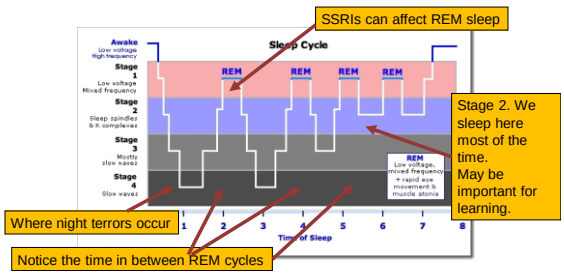
The Sleep Cycle



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Prevention: Good Sleep Hygiene

- Daytime
  - Exercise
  - Limit caffeine/sugar
  - No long naps!
  - Monitor stress
- Evening
  - Regular bedtime and keep it 7 days/week
  - Decrease stimulation
  - Decrease light
  - Decrease exposure to electronics
  - Good bedtime routine

Keep the crib!

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Prevention: Good Sleep Hygiene

- Good bedtime routine
  - Visual schedule
  - Weighted blankets?
  - Sensory environment
  - Routines
  - Reading a story
- Sleep tool kit at Autism Speaks
  - https://www.autismspeaks.org/tool-kit/atnair-p-strategies-improve-sleep-children-autism

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Sleep and ASD: Types of Problems

- Trouble falling asleep
- Trouble staying asleep
- Night wandering
- Nightmares
- Night terrors
- Fears

"See?! I TOLD you!"

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Sleep and ASD: Developmental Issues

- Autism and age-ism
- Infant sleep or FDLs 1-4
  - Ferber method most effective up to FDL 3-4
  - Sleep routines
- Toddler sleep or FDLs 4-5
  - Age equivalent of 18 months to 2.5 years
  - Attachment & separation starting
  - Fears/anxiety/trauma
  - Nightmares
  - Security
  - Naps and the sleep cycle

"See?! I TOLD you!"

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Sleep and ASD: Behavioral Interventions

- Visual schedule
- Back to bed reminders on the door
- Stories that describe children going to sleep and their struggles
- Sleep restriction (decreasing total hours expected to sleep)
  - Later bedtimes
- "Fading"
  - Move bedtime to a later time/actual sleep time
  - Then gradually move bedtime earlier
- Sleep Onset Association (SOA)
  - For example: The 'family bed'

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SOA: "Falling asleep alone in their bed with nothing."

- Takes time—usually a few weeks
- If parents lie down change the pattern by:
  - Sitting on the bed for a few nights
  - Then sitting in a chair beside the bed
  - Continue sitting in the chair, but move it farther from the bed each night until
  - Parent is out of the room and out of visual contact
- Reduce the amount of attention such as talking, facial expressions, or eye contact

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The Ferber Method*

- Once you are out of your child's bedroom, if he/she is upset and not sleeping, you can wait a few minutes, and
- then go back into the room to check. When you go into the room, make it a brief visit (less than a minute) and only give limited physical or verbal contact (e.g. a quick hug). Gently but firmly say, "It is time for bed. You are 'OK.' Good night," and then leave the room.
- If you need to go back into the room, *wait longer each time* and make each visit with your child brief. Once your child is able to fall asleep alone, then you can use the same techniques if he/she wakes in the night, or before wake time in the morning.

*Not for children with severe anxiety, trauma

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"The Bedtime Pass"

- 1 visit from parent
- 1 drink of water
- 1 nighttime hug
- 1 nighttime kiss

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"The Bedtime Pass"

- A bedtime pass can be used by the child to trade for something brief, such as a quick hug or a drink of water.
- May only use the pass one time during the night, and that once the pass is used, it will be given to you. You will return the pass to the child the following night to use again.
- If the pass is not used all night, it can be traded for a morning present or reward system.
  - For example, for every night the child does not use the pass, he/she gets a sticker. If your child collects a certain number of stickers (e.g. five) they receive a special gift. The presents can be dollar store items or a special outing with you.

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Treatment of Night Terrors

- Happens in Stage 4 sleep
- Child awakens and cries out but is still asleep
- No dream content
- Child doesn't remember NT
- Find out when they happen
- Rouse child just before NT into light sleep
- Do this for 7-10 days

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Sleep and the Family System

- Family stress affects sleep
- Parental conflict
- Child stresses and demanding schedules
- Family system analysis
  - Dad has to sleep elsewhere
  - Mom gets too close to child with ASD
  - Siblings feel neglected

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ASD and Sleep Medications

- Melatonin (for sleep onset only)
  - Recent research suggests using Melatonin when needed, not chronically
  - 1-3 mg 30-45 minutes before bedtime. Give it time to work.
- Diphenhydramine (Benadryl) 25 mg for children < 10
  - 50 mg for children over 100 lbs.
  - But watch out for activation instead of sedation
- Clonidine 0.1 mg at bedtime for children >6
- Trazadone 50 mg at bedtime for children >10

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When to Refer for Sleep Disorders

- Severe snoring and/or sleep apnea
- Clear medical conditions
  - Medications for other conditions
  - Seizures
- Persistent sleep problems despite good interventions
- Refer to sleep labs for polysomnography or actigraphy

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Summary: ASD and Sleep

- Children with ASD are prone to sleep problems
- Make sure it's not physical (e.g. snoring/apnea) or medical (e.g. medications) first.
- Most of the problems can be addressed with:
  - Good sleep hygiene and sleep routines
  - Analysis of sleep onset associations
  - Sleep latency analysis (when actual sleep happens)
  - Ferber method
- If sleep problems persist, refer for medical workup
- And you will sleep like a baby. . .

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Articles on Sleep

- https://www.nationaljewish.org/NJH/media/pdf/Meltzer%20References/Reynolds-(2011)-Sleep-and-autism-spectrum-disorders.pdf
- https://www.sleepassociation.org/children-and-sleep/basics-of-sleep-problems-in-children/
- https://www.sleepassociation.org/children-and-sleep/8-tips-help-baby-sleep-night/
- https://www.sleepassociation.org/children-and-sleep/8-steps-great-sleep/
- https://www.spectrumnews.org/features/deep-dive/get-children-autism-sleep/
- https://pediatrics.aappublications.org/content/137/Supplement_2/S98
- https://www.statesman.com/news/20190810/experts-talk-good-sleeping-habits-for-kids-especially-once-school-starts
- https://www.usatoday.com/story/life/2019/08/10/bedtime-benefits/1959234001/
- https://www.aap.org/en-us/about-the-aap/aap-press-room/news-features-and-safety-tips/Pages/Back-to-School-Tips-Getting-the-Year-Off-to-a-Good-Start-from-the-AAP.aspx

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Links and References: Sleep Disorders in ASD

- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4609586/
- https://www.ncbi.nlm.nih.gov/pubmed/23754339
- https://link.springer.com/article/10.1007/s10803-013-1866-z

- J Autism Dev Disord. 2014 Jan;44(1):216-28. doi: 10.1007/s10803-013-1866-z.

- Parent-based sleep education for children with autism spectrum disorders.
- Malow BA[1], Adkins KW, Reynolds A, Weiss SK, Loh A, Fawkes D, Katz T, Goldman SE, Madduri N, Hundley R, Clemons T.

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Thank you!

*This webinar will be uploaded to our website

Upcoming webinars:
Wednesday, November 13th
12:00 pm EDT

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