Is it ADHD or Obstructive Sleep Apnea (OSA)?

Researchers have found that children diagnosed with attention-deficit/hyperactivity disorder (ADHD), based on the Diagnostic and Statistical Manual of Mental Disorder, Fourth Edition (DSM-IV) criteria, may also have obstructive sleep apnea (OSA) but it is unclear whether treating OSA has similar results as methylphenidate (MPH) which is a commonly used treatment for ADHD.

A new study suggests that children who have ADHD may be chronically sleep deprived and have abnormal REM (Rapid Eye Movement) sleep. More specifically, the study puts forth the theory that children may present with an intrinsic sleep problem specific to ADHD. Results show that children with ADHD have a total sleep time that is significantly shorter than that of children without ADHD.

According to researchers, ADHD is one of the most prevalent conditions in the field of child psychiatry and 25-50 percent of children and adolescents diagnosed with the disorder have reported clinical sleep problems. Partial sleep loss on a long-term basis accumulates to become a sleep debt which can produce significant daytime sleepiness and neurobehavioral impairment. Studies have shown that disrupted sleep can affect daytime learning and attention in childhood and can lead to ADHD-like symptoms.

“One study by Ron Chervin, MD and others, published in Pediatrics (the journal of the American Academy of Pediatrics) in April of 2006, found that 28% of children referred to an Ear Nose and Throat clinic for removal of their tonsils and adenoids because of symptoms of obstructive sleep apnea had ADHD. When these children were followed up one year after surgery, 50% no longer qualified for the diagnosis.”

*It's important to note that it is true that many children have ADHD without underlying sleep disturbances.* Also, others with ADHD may have difficulties initiating or maintaining sleep for a number of different reasons (including the medications given to treat the ADHD), which can sometimes worsen the ADHD symptoms. “However, many children with ADHD do suffer from an underlying physical disorder causing fragmented and disrupted sleep, such as obstructive sleep apnea, or periodic limb movement disorder, which is either the sole or main cause of the ADHD. As Chervin’s study and many others demonstrate, treating the underlying sleep disorder can markedly reduce the behavioral impairment.”

“Lots of studies suggest that kids with sleep apnea are more likely to be hyperactive, impulsive and inattentive,” says Dr. Judith Owens, associate professor of pediatrics at Brown University Medical School. The more experts learn about sleep apnea, the more concerned they become because if left untreated, sleep apnea may affect parts of the brain that are involved in learning which may take a toll on cognitive and academic performance and may lower a child’s IQ.

What is Obstructive Sleep Apnea?

Studies show that approximately 2% of children in the U.S. have OSA. This disorder is caused by a collapse of the upper airway during sleep. This results in a drop in oxygen, a rise in carbon dioxide, and fragmented sleep because the brain is
disturbed by these fluctuations in oxygen and carbon dioxide. Enlarged tonsils and adenoids are the most common causes of sleep apnea in children but obesity and chronic allergies can also be a cause. As mentioned earlier, children with sleep apnea will be tired during the day, may have problems concentrating, and may have other symptoms related to lack of sleep such as irritability.

**Symptoms of Obstructive Sleep Apnea**

The telltale sign of pediatric sleep apnea is the same as for adults: snoring. Those who observe the children often describe the breathing as “heavy or rapid” rather than describing it as snoring. Often these children have large adenoids which make it difficult for them to breathe through their nose even in the daytime. Therefore, one clue that children might have OSA is if they have trouble breathing in the daytime, whether from chronic congestion, allergies or asthma, then they just might have problems breathing at night. Parents often have no clue that their children have disturbed sleep. These are usually the children who go through their bedtime routine with little resistance, including the children who exhibit behavior problems in the daytime, but they seem to fall asleep readily. So as far as the parents know, they sleep through the night without disturbing them.

Another symptom that should make parents or educators suspicious of sleep apnea is bedwetting (especially if the child is over the age of five and has had a dry spell). In addition, children with OSA often sleep in contorted positions as they attempt to arch their necks and open their throats.

These children will get very sweaty at night maybe because of their increased work at breathing. Although these children often have weight issues that cause or contribute to their sleep apnea, in some children, their sleep apnea can cause failure to thrive and stunted growth. One explanation is that the growth hormone is secreted during sleep and if the children have disturbed sleep then they have disturbed this hormone and the many vital developmental processes that rely on it.

**How is Obstructive Sleep Apnea diagnosed and treated?**

Sleep apnea is treatable. Only your pediatrician or an ear, nose and throat specialist can determine whether your child’s tonsils or adenoids are enlarged enough to possibly block the airway and cause sleep apnea. The confirmation of sleep apnea should be determined by a polysomnogram which is a sleep study that is done in a special laboratory. Surgery is a treatment often used for children with enlarged tonsils and adenoids. Other treatments are available and used for those with restricted nighttime breathing due to allergies or other causes. *It is important to mention that not every child with enlarged tonsils or with loud snoring has sleep apnea.

**How can I help my child with ADHD get the sleep he or she needs?**

- **If your child takes medication for ADHD, discuss the medications with your doctor.** Ask your doctor if you can give the morning dose of ADHD medicine earlier in the day or speak with your doctor about shorter-acting medications. It’s important to find the right ADHD medication that lets your child relax at night and get healthy sleep.
- **Remove caffeine from his/her diet.** Caffeine is one of the few food products that mimic the stress response. When it does, it increases nervousness and causes sleepless nights. Keep caffeinated beverages and foods out of your kitchen.
- **Be consistent.** Have a consistent, daily routine with specific bedtimes, waking times, meals, and family times.
- **Make sure your child’s room is sound attenuated.** If your child is bothered by noises while sleeping, try to use a “white noise” machine. Use one that produces a humming sound or turn the radio to a station that has gone off the air. If your child is extra sensitive to noise, try using ear plugs.
- **See that your child gets plenty of exercise.** Make sure your child gets exercise daily. Be certain to avoid exercising right before bedtime. Studies show that regular exercise helps people sleep more soundly.
- **Give or allow your child to take a warm bath well before bedtime.** Sleep usually follows the cooling phase of the body’s temperature cycle. After your child takes a bath, keep the temperature in your child’s bedroom cool to see if you can influence this phase.
- **Consider medical problems.** Allergies, asthma, or conditions that cause pain can disrupt sleep. If your child snores loudly and/or pauses in breathing, a medical evaluation is recommended. Consult with your doctor for possible medical causes of sleep problems.

***Many children who have behavior, learning, or psychiatric problems may have sleep disorders that when left undiagnosed or untreated can aggravate their other disorders and make them more difficult to treat. Therefore, even if the sleep disorder is not the whole story, finding the right treatment and helping children get the sleep that their brains so desperately need is vital to the management of these other problems that greatly impact their health, social integration, and academic achievement.***

**References and Resources:**


Hyper kid? Sleep apnea may be the culprit. Available online at [http://www.msnbc.msn.com/id/22881407/ns/health-kids_and_parenting/t/hyper-kid-sleep-…](http://www.msnbc.msn.com/id/22881407/ns/health-kids_and_parenting/t/hyper-kid-sleep-…)