

# The Relationship Between ADHD and Sleep

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What is the relationship between ADHD and sleep? Children who have sleep disorders and ADHD may present with similar symptoms, such as inattentiveness, overactivity and restlessness. Unlike adults who become drowsy and less active when sleep is disturbed, children may have the opposite response. The interplay between these disorders is significant, and children with primary sleep disorders could get misdiagnosed with ADHD.

However, children who actually have ADHD also commonly have disrupted sleep. There is a behavioral component to sleep, and parenting difficulties often will extend to bedtime. In addition, there may be psychiatric causes such as depression or anxiety disorders. Consequently, sleep problems may relate to ADHD in four ways:

1. ADHD itself may be the cause of the sleep disruption
2. Insomnia may be related to another disorder that co-occurs with ADHD (e.g., anxiety)
3. Insomnia could be a side effect to stimulant medication
4. Not related to ADHD, but insomnia is “just common in general”  
(*About.com Guide*, “Understanding the Interplay Between Disorders with Similar Symptoms”. Brandon Peters, M.D., Updated March 28, 2011).

The consequences stemming from poor sleep may be associated with poorer child psychosocial quality of life, child daily functioning, caregiver mental health and family functioning (Science Daily (April 8, 2008). According to this article “about half of parents with children with ADHD report that their children have difficulty sleeping, feel tired on waking or have nightmares or other sleep problems such as disordered breathing and restless leg syndrome.” In one study from Australia (Valerie Sung, M.B.B.S., of the Center for Community Child Health, Australia) as reported in Science Daily, found that sleep problems affected 73.3 percent of the children with ADHD. The study reported 28.5 percent prevalence of

mild sleep problems, and 44.8 percent prevalence of moderate or severe sleep problems. The study found that compared to those children without sleep problems, those with sleep problems were more likely to miss or be late for school, and their caregivers were more likely to be late for work.

A new study suggests that children with ADHD may be chronically sleep deprived and have abnormal REM sleep (*Psych Central*. “Sleep Problems Linked to ADHD in Children”, Study by Reut Gruber, Ph.D. Reviewed by Rich Nauert, Ph.D, Senior News Editor. March 2, 2009). In particular, the study puts forward the theory that children with ADHD may present an intrinsic sleep problem. The study reported that “children with ADHD have a total sleep time that is significantly shorter than that of controls. Children in the ADHD group had an average total sleep time of eight hours, 19 minutes; this was 33 minutes less than the average sleep time of eight hours, 52 minutes, in unaffected children.” According to the principal investigator and the lead author, Reut Gruber, Ph.D., director of the Attention, Behavior and Sleep Lab at the Douglas Mental Health University Institute, the results of the study were encouraging.

Measuring sleep patterns in the children’s own beds at home using portable polysomnography sleep recorders (PSG) also allowed researchers to better represent the

natural sleep pattern. The author writes: “I do not believe that sleep per se is the cause of ADHD, but it may make the symptoms worse in children with sleep problems” and reports showing improvement in ADHD symptoms by treating only sleep problems may be misleading in that these results were seen in children with sleep apnea.

ADHD is one of most prevalent conditions in child psychiatry, and 25 percent to 50 percent of children and adolescents diagnosed with ADHD have clinically reported sleep problems. Partial sleep loss on a chronic basis accumulates to become a “sleep debt,” which can produce significant daytime sleepiness and neurobehavioral impairment. More than one study suggests that children with ADHD suffer from an intrinsic sleep problem that could be related to the underlying pathophysiology of the disorder.

Unfortunately, sleep problems in children with ADHD are extremely common and strongly associated with poorer quality of life, daily functioning and school attendance. It’s very important that clinicians and parents ask and monitor sleep patterns in a child with ADHD. A sleep loss of 55 minutes each night, for six

consecutive nights, can cause children to do poorly on four of six measures of inattention, including reaction time and omission errors. Thus, playing on the computer longer or staying up to do homework could result in poorer neurodevelopmental functioning the following day, affecting attention in the classroom ( “Less Sleep, Worse Symptoms”, *Additude*, Summer 2011, p. 12).

In conclusion, children with ADHD can present with additional behavioral problems and academic deficits stemming from sleep deprivation. If your child is having difficulties going to sleep or waking up agitated and unhappy, it's important you speak with the child's pediatrician. Sleep problems in children with ADHD can be addressed and to ignore them is a disservice to the child and family.

#### Recommendations to Help Minimize Sleep Disturbance.

1. Prepare for sleep by shutting off or dimming lights at bedtime.
2. Once in bed with lights off, use white noise machine, ear plugs, or soothing music to counteract the child's “racing thoughts.”
3. Help the child learn muscle relaxation and deep breathing exercises. When transitioning from one muscle group to the next, the child breathes deeply in and out.
4. Develop routines to help the child wake up happier and faster, such as showering in the morning, giving the child his/her medication one half hour before they need to get out of bed.
5. Try to have the child go to bed the same time every night. By doing so, you are helping the child's body enter its daily “rhythm.” Consistency is the key!
6. Avoid “sleep traps” –playing with computer, texting , checking emails, late night eating, etc.
7. Set a bedtime alarm. Set the alarm to go off one hour before bedtime so you can prepare the child for bed. If you are watching T.V., have the alarm in another room so you are forced to go to turn it off.