



## Effects of Sleep Disordered Breathing

When we sleep, our muscles relax. This includes the muscles in the back of the throat that help keep the airway open. In obstructive sleep apnea, these muscles can relax too much and collapse the airway, making it hard to breathe.

In children, sleep disordered breathing (SDB) is characterized by sleep patterns which can include: snoring, restless sleeping, waking at night, obstructive events (apnea), enuresis (involuntary urination), and behavioral changes during the day (hyperactivity, lethargy, increased daytime fatigue) as well as difficulty in arousal and in falling asleep.

Obstructive Sleep-Disordered Breathing (SDB) affects up to 11% of children and forms a continuum of severity ranging from primary snoring to obstructive sleep apnea. Prevalence is increased in certain pediatric populations such as children with special needs, children with psychiatric or medical diagnoses and children with autism or pervasive developmental disorders. Recent research has demonstrated 75% of children with ADHD also have a sleep disorder.

Overall, sleep affects every aspect of a child's development, particularly higher cognitive functions. Research suggests that the long term effects of untreated sleep apnea in children include cognitive, behavioral, and psychosocial problems as well as growth delays and impacts on cardiovascular health. Consequences of untreated obstructive sleep apnea include failure to thrive, enuresis (bed-wetting), attention-deficit disorder, behavior problems, poor academic performance, and cardiopulmonary disease.

The most common etiology of obstructive sleep apnea is adenotonsillar hypertrophy (enlarged adenoids and/or tonsils). Low tongue position at rest is also a contributing factor of SDB. Whether the tongue is resting low due to habit or short lingual frenulum, it can lead to impairment of orofacial growth in early childhood and reduce the width of the upper airway—a pliable tube—increasing its risk of collapse, particularly during sleep.

Behavior and cognitive deficits can recur in children with SDB. Poor academic performance in the teenage years is associated with snoring. Greater than 80% of children who have documented and treated SDB will benefit from long term increases in cognitive ability, behavioral stabilization and positive changes in temperament.

Current literature demonstrates that myofunctional therapy decreases apnea-hypopnea index by approximately 50% in adults and 62% in children. Lowest oxygen saturations, snoring, and sleepiness outcomes improve in adults. Myofunctional therapy could serve as an adjunct to other obstructive sleep apnea treatments.

Signs of obstructive sleep apnea in children include:

- mouth breathing awake or asleep, in the absence of snoring
- snoring, often with pauses, snorts, or gasps
- heavy breathing while sleeping
- very restless sleep and sleeping in unusual positions (i.e., chin tipped upward away from the neck)
- bedwetting
- daytime sleepiness or behavior problems
- sleepwalking or night terrors
- difficulty with arousal in waking
- behavioral and attention problems (hyperactivity)



\*Contact us to see if myofunctional therapy could help you or your child!

## References

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