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Adenotonsillectomy may offer long-term benefits for children with breathing problems during sleep

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Two and a half years after children with sleep-related breathing disorders had surgery to remove their tonsils and adenoids (glands in the back of the throat), they appear to sleep better than they did before the procedure but not as well as they did six months after, according to a report in the July issue of *Archives of Otolaryngology-Head & Neck Surgery*, one of the JAMA/Archives journals. Initial improvements in their behavior were maintained except when measured by an index of attention-deficit/hyperactivity disorder (ADHD) symptoms.

"Since the publication of our previous report demonstrating improvements in both sleep and behavior at six months after adenotonsillectomy for children with sleep-disordered breathing, there have been several articles that continue to support the impact of sleep-disordered breathing on neurocognitive development, behavior and quality of life," the authors write as background information in the article. "Specifically, ADHD, hyperactivity and behavior have been shown to improve at six or 12 months after adenotonsillectomy in correlation with improved postoperative polysomnography [sleep monitoring] parameters regardless of which instruments were used to evaluate behavior."

Julie L. Wei, M.D., of the University of Kansas School of Medicine, Kansas City, and colleagues analyzed long-term (2.4 to 3.6 years) follow-up data from 44 of 71 children with sleep-disordered breathing who

initially participated in the six-month study. Before surgery, six months afterward and again at least two years afterward, parents completed a questionnaire assessing their child's sleep and a multi-part parent rating scale with sections about ADHD symptoms, cognitive problems or inattention, hyperactivity and oppositional behavior.

"Our longitudinal study demonstrates that improvements in sleep and behavior may not be exactly maintained over time, but at 2.5 years after the surgical intervention, all parameters reported in this study except the ADHD index remained below baseline values," the authors write. "Although speculative and based on extrapolation, this longitudinal model shows that even if the sleep-related breathing disorder subscale scores increase by 7 percent per year for many consecutive years, which is a statistically significant increase compared with baseline values, it would take nine or 10 years before the values could climb back to baseline values, if indeed a return to baseline values were likely."

Because it is not a randomized controlled trial, the results do not prove the relationship between adenotonsillectomy and changes in sleep and behavior. However, the findings do support an association between the intervention and improvements in theses outcomes, the authors note.

More information: *Arch Otolaryngol Head Neck Surg.* 2009;135[7]:642-646.

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