

# The ABCs of childhood z's: Snoring may be chronic despite surgery

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Children who gain weight rapidly after having their tonsils and adenoids removed to treat sleep-disordered breathing (SDB) may improve in the short-term, but over time they may relapse or even worsen. African-American children also tend to relapse, according to new research from Cincinnati Children's Hospital Medical Center.

Adenotonsillectomy is the most commonly performed surgery in children, ranging from about 19 per 10,000 in Canada to 115 per 10,000 in the Netherlands. In the U.S., the rate is about 50 per 10,000. It is the first line of treatment for SDB in children. For many kids, undergoing this major surgery provides only temporary relief.

"The high rate of recurrence we observed in both obese and non-obese children indicates that SDB is a chronic condition," said Raouf Amin, M.D., director of pulmonary medicine at the hospital.

The results were published in the second issue for March of the *American Journal of Respiratory and Critical Care Medicine*, published by the American Thoracic Society.

The researchers recruited 40 healthy children between seven and 13 whose parents and otolaryngologists had jointly agreed upon adenotonsillectomy surgery to treat nightly snoring. The investigators also recruited 30 sex- and age-matched children who were not undergoing adenotonsillectomy as a control group. They performed polysomnographies on each child at time of recruitment, and again at six

weeks, six months, and a year following surgery. Children in the control group had polysomnographies at the same intervals.

While the majority of children with SDB showed significant improvement in their AHI scores six weeks after surgery, the rate of relapse one year later had no correlation with the six-week score. Children who relapsed were more likely to be more obese, have worse SDB at baseline, have an accelerated body mass index (BMI) gain, and to be African-American.

“Most post-adenotonsillectomy outcome studies have focused on the assessment of SDB six to 16 weeks after surgery. Resolution of SDB during this window was usually interpreted as a cure for the disorder,” noted Dr. Amin. “We report[ed] for the first time the longitudinal outcome of adenotonsillectomy in healthy children, the important influence of BMI gain velocity and African-American race on recurrence of SDB.”

Half of the non-obese children, and two-thirds of the obese children had an AHI score of greater than 3 prior to surgery. A year later, 27 percent of the non-obese children and 79 percent of obese children had AHI score of greater than 3, indicating that the surgery was significantly more effective at a year in non-obese children.

While children who were obese at the baseline were more likely to relapse than their no-obese peers, accelerated BMI gain was also an independent risk factor for relapse.

“These results highlight the differential disease mechanisms between those due to obesity and those due to the rapid change in body composition associated with accelerated BMI gain,” explained Dr. Amin.

Furthermore, children who relapsed had significantly higher blood

pressure at follow up than children who didn't.

“SDB appears to be a chronic disorder that is clearly linked to other medical problems. Given the rate of relapse, we advocate long-term follow up of children with SDB, monitoring of BMI gain, and reevaluation of children who demonstrate rapid BMI gain, especially those who are African-American,” the researchers concluded.

Source: American Thoracic Society

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