

Age, not underlying diagnosis, key factor in weight gain in children after tonsillectomy

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Potentially worrisome weight gains following tonsillectomy occur mostly in children under the age of 6, not in older children, a study by Johns Hopkins experts in otolaryngology- head and neck surgery shows.

Sudden increases in [body mass index](#), or BMI, have been routinely observed for months after some of the more than half-million surgeries performed annually in the United States to remove the sore and swollen tissues at the back of the throat.

The Johns Hopkins study, in 115 children in the Baltimore region, is believed to be the first to dispel long-held beliefs that such weight gains occurred mostly in children whose [tonsils](#) were removed as primary treatment for diagnosed sleep apnea, when the swollen, paired tissues partially obstruct breathing and disrupt sleep. It is also believed to be the largest study to analyze weight gain specific to every child's age group, from 1 through 17.

Although researchers have yet to pinpoint the underlying cause of the weight-gain phenomena, they did find that it happened at the same rate in the 85 children who had the surgery for obstructive sleep apnea as in the 30 who had it due to recurrent episodes of tonsil inflammation.

Senior study investigator, [otolaryngologist](#) and [sleep medicine](#) expert Stacey Ishman, M.D., M.P.H., says her team's study findings, scheduled to be presented Sept. 12 at the annual meeting of the American Academy of Otolaryngology—Head and Neck Surgeons in Washington,

D.C., should help alleviate rising concerns among many parents whose [adolescent children](#) are already overweight that tonsillectomy may aggravate the problem; or start one in normal weight kids. Recent surveys have shown that record numbers of American children, as many as one-third, are overweight or obese.

"Our study results show that parents' current concerns about weight gain are serious, but only underweight or normal weight children between the ages of 2 and 6 are most likely to gain even more weight, not older children," says Ishman, an assistant professor at the Johns Hopkins University School of Medicine.

"Parents with overweight adolescent children need not fear tonsillectomy, and those with younger, normal weight and overweight children just really need to closely watch their child's diet following surgery, and make caloric adjustments," says Ishman, who has performed hundreds of the roughly 30-minute procedures that typically require a general anesthetic.

In the study, researchers analyzed the medical records of children between the ages of 6 months and 18 years who had had their tonsils removed at the Johns Hopkins Outpatient Center between 2008 and 2011. Researchers looked only at those medical records for children who had been routinely examined for at least six months after their procedure, with detailed measurements of any possible weight gain, which were averaged and compared based on a formula involving age, gender and height. All also had a history of recurrent tonsillitis or obstructive sleep apnea, as strictly determined by an individual sleep study analysis.

Results showed an averaged post-surgical weight gain of 2 to 5 pounds – or a 1.0- to 1.2-point increase in averaged BMI scores—but the gains were not dependent on whether the underlying condition was

inflammation or sleep apnea. Only age mattered, researchers say, after discounting gender and height.

Ishman says that while such weight gains might appear small, in these children's small bodies, whose initial weight was between 22 and 60 pounds (or between 10 to 30 kilos), "a 10 percent weight gain can be quite worrisome."

Results showed a normal weight, 5-year-old boy, weighing 40 pounds (or 18 kilos) and measuring 42 inches tall, who gained 3 pounds after tonsillectomy, would move from the 68th percentile to the 89th percentile in their age-weight group, and become overweight. For an underweight 5-year-old boy of similar height, originally weighing 34 pounds (15 kilos), the same 3-pound weight gain would shift them from the 24th percentile group to the 28th percentile, moving them closer to a normal weight.

However, she says, in an overweight 10-year-old boy, already weighing 90 pounds (41 kilos) and 55 inches tall, there was no weight gain post tonsillectomy, and he remained in the 92nd percentile group, meaning his poor condition did not worsen.

Ishman says her team's next steps are to gain a better understanding of why and how children's age affects [weight gain](#) post-tonsillectomy. She already has plans to monitor children immediately after surgery to find out what factors or interventions may help underweight [children](#) gain pounds, while helping those who are overweight to not get any bigger.

Since 2002 tonsillectomy has been recommended by the American Academy of Pediatrics as the primary treatment for obstructive sleep apnea, as sleeping aids and drug therapies are not as effective. Studies have shown that if left untreated, [sleep apnea](#) can lead to long-term health problems, including increased heart and lung diseases, even death.

Provided by Johns Hopkins University School of Medicine

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