

Delaying child's tonsillectomy does not lower risk of developmental disorder

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Children under age 5 who underwent minor surgery requiring anesthesia had a 26 percent increased risk of later diagnosis with a mental disorder. However, the timing of the procedure did not affect this risk, according to a new study at Columbia University's Mailman School of Public Health and College of Physicians and Surgeons. Based on these findings, there is little support for delaying a minor procedure to reduce the potential neurodevelopmental risks of anesthesia in children. The results are published online in the journal *Anesthesia & Analgesia*.

"The question of whether commonly used anesthetics have any measurable adverse effect on neurodevelopment in children has been a hot topic in [anesthesia](#) and surgery for over a decade," said Guohua Li, MD, DrPH, professor of Epidemiology at the Mailman School of Public Health and Anesthesiology at Columbia University. "This rigorously designed study may help parents and clinicians to make informed decisions on elective surgeries for kids."

The researchers analyzed data from individual Medicaid claims in Texas and New York from 1999 to 2010 to determine if the timing of exposure to anesthesia under the age of 5 was associated with increased subsequent risk of diagnoses for any mental disorder, such as developmental delays, including reading and language disorders, ADHD, depression, or anxiety. An association between anesthesia exposure and [developmental delay](#) or ADHD were also evaluated separately. Children who had any of one of four common procedures that require [general anesthesia](#) were evaluated, including circumcision beyond the perinatal

period, hernia repair, tonsillectomy, and adenoidectomy. Children diagnosed with a mental disorder prior to surgery or in the first 6 months after the procedure were excluded from the analysis.

"In December, the FDA released a safety announcement warning about the use of general anesthetic and sedation drugs in children under age 3, but the evidence regarding the impact of the age of exposure to anesthesia is limited." said first author Caleb Ing, MD, MS, assistant professor of Epidemiology at the Mailman School, and in the Department of Anesthesiology at Columbia College of Physicians & Surgeons.

A total of 38,493 children who underwent one of the four surgical procedures and 192,465 children unexposed before 5 years of age were included in the analysis. Children who received any one of the four common procedures studied had a 26 percent increased risk of a diagnosis for a [mental disorder](#), and this increased risk did not vary with the timing of the [procedure](#). The most common mental disorders were developmental delay and ADHD, and exposure to anesthesia for one of these procedures was associated with a 26 percent increased risk of diagnosis of a developmental delay, and 31 percent increased risk for a diagnosis of ADHD.

"While [children](#) exposed to anesthesia appear to be at a slightly increased risk for neurodevelopmental disorder, whether this excess risk can be attributed directly to the neurotoxic effects of anesthetic agents remains unclear," noted Ing. "Our results, however, suggest that delaying commonly performed surgical procedures for pediatric patients may not offer any neurodevelopmental benefit."

Provided by Columbia University's Mailman School of Public Health

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