

Why do some kids die under dental anesthesia?

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Anesthesiologists call for more research into child deaths caused by dental anesthesia in an article published online by the journal *Pediatrics*.

Little is known about [pediatric deaths](#) caused by dental anesthesia in part because of the lack of data surrounding these events.

"There are so many questions that we need answers to when it comes to pediatric deaths caused by dental anesthesia," said Dr. Helen Lee, assistant professor of anesthesiology in the UIC College of Medicine and lead author of the article. "Do the deaths reflect a need for more clinical training? Do we need better regulation of who gets and maintains [sedation](#) licenses? How can data best be collected after an adverse event? Are providers following clinical guidelines? If not, why not?"

Early childhood caries, or cavities, are the most common chronic childhood disease. In treating the cavities, moderate sedation or [general anesthesia](#) is sometimes given, depending on the severity of tooth decay and plan for treatment.

An estimated 100,000 to 250,000 pediatric dental sedations are performed each year in the United States using a variety of drugs, and can lead to adverse effects, including respiratory depression, airway obstruction and even [death](#). But the number of deaths and exactly what caused deaths related to pediatric dental anesthesia are unknown because there is no data. Lee explains that there may be certain general factors associated with increased [adverse effects](#) related to pediatric dental anesthesia.

"For adults, receiving sedation in an office setting has been associated with a 10-fold increase in mortality compared to getting sedation in an ambulatory surgical center. Outcomes for children sedated in office settings is unlikely to be better," Lee said. "But we need more data to determine if this is the case before we can understand how to make office-based procedures safer."

Age-related differences in physiology put children at greater risk when it

comes to anesthesia. Because adults have greater physiologic oxygen reserve, they can withstand brief episodes of low oxygen under anesthesia, which some children can't. Children also have greater metabolic demands for oxygen than adults, so episodes of low oxygen can lead to more serious consequences for them, including brain damage, Lee explained.

Lee said that research is also needed to examine how providers can be supported in their practices to reduce the risk of negative outcomes for pediatric patients receiving dental anesthesia.

"I believe that there are solutions to this problem and figuring out what that looks like will take collaborative work between [anesthesia](#) providers, dentists and patients," Lee said. "In the end, everyone wants the same thing—for [children](#) to be safer."

More information: Helen Lee et al. Ethics Rounds: Death After Pediatric Dental Anesthesia: An Avoidable Tragedy?, *Pediatrics* (2017). DOI: [10.1542/peds.2017-2370](https://doi.org/10.1542/peds.2017-2370)

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