Study finds no long-term impact of anesthetics on children

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A University of Queensland-led study has found multiple doses of anesthetics do not compromise brain function in young children. The research paper was published in *The Lancet Respiratory Medicine*.

Professor Claire Wainwright from UQ's Child Health Research Center said the result should reassure medical practitioners and parents with children needing repeated anesthetics.

"Previous studies using young animals showed potential learning and behavior changes and some studies that looked at groups of children raised concerns about brain changes," Professor Wainwright said.

"But animal studies don't always show how humans would react and the children with poorer outcomes may have them because of reasons linked to the disease or procedure that required the anesthetic."

The new study was part of a trial in Australia and New Zealand involving children aged under 5 years with cystic fibrosis.

Professor Andrew Davidson from the Murdoch Children's Research institute said the trial involved mucus collection from two groups of children providing researchers with the opportunity to study the impact of repeated anesthetic doses.

"Fluid was collected from the lungs of one group under anesthetic while for the other group, throat swabs were used under no anesthetic," Professor Davidson said.

"Our study showed the different techniques used for mucus extraction did not have any impact on the cystic fibrosis outcomes.

"When we examined whether the anesthetics had any impact on cognitive or behavioral impacts, we found it did not.

"Multiple general anesthesia exposure in those young children did not cause functional impairment in attention, IQ, executive function or brain structure in comparison to the group that had fewer anesthetics."

More information: Claire Elizabeth Wainwright et al, Long-term outcomes of early exposure to repeated general anaesthesia in children with cystic fibrosis (CF-GAIN): a multicentre, open-label, randomised controlled phase 4 trial, *The Lancet Respiratory Medicine* (2024). DOI: 10.1016/S2213-2600(24)00170-X

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