

Mayo researchers find anesthesia not harmful for babies during birth process

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Mayo Clinic researchers have found that children exposed to anesthesia during Cesarean section are not at any higher risk for learning disabilities later in life than children not delivered by C-section. These findings are reported in the current issue of the journal [Anesthesiology](#).

"We found that the incidence of learning disabilities was equal between [children](#) who were delivered vaginally and those who were delivered via C-section but with general anesthesia," says Juraj Sprung, M.D., Ph.D., a Mayo Clinic anesthesiologist who led the study. "It's reassuring that the anesthetics required for Cesarean delivery do not appear to cause long-term brain problems."

The study was conducted with data from the Rochester Epidemiology Project. Researchers analyzed the medical records of 5,320 children born between 1976 and 1982 to mothers living in Olmsted County. They compared birth records with scholastic achievement and IQ tests administered to the children later in life as part of their schooling.

The study builds on a previous project, reported in March, which found that children exposed to a single dose of anesthesia during the first three years of life had no increased risk for learning disabilities, but those exposed multiple times had an almost doubled risk for later identification of learning disabilities.

Prolonged exposure to anesthetics has been shown to cause brain abnormalities in young animals, which was the impetus behind these two studies. Scientists think that the brains of young animals and humans are more vulnerable to a variety of problems because they are undergoing rapid growth. The brain is forming vital connections between cells during this time.

Not only did the researchers find that the use of anesthesia during delivery was not harmful to the

baby, they found that babies delivered by Cesarean using an epidural anesthetic (which numbs only the lower region of the body and does not involve the mother going to sleep) had a substantially reduced risk for learning disabilities later in life. "The risk was reduced by about 40 percent compared to children delivered vaginally and those delivered via Cesarean section but with general anesthesia," says Dr. Sprung.

Study co-author and Mayo Clinic anesthesiologist Randall Flick, M.D., cautions that because this study is preliminary, changes to medical practice should not be considered at this point. "What we've found is an association between two things," says Dr. Flick. "One is the way a child was delivered, either vaginally or under regional or general anesthesia. The other is a difference in the incidence of learning disabilities as the child attended school. It's important to recognize there may be many other factors that impact learning disabilities."

The team is investigating whether use of an epidural on a mother during natural labor has similar effects on the incidence of learning disabilities in children as a C-section with an epidural.

Dr. Flick says the research team also is working with the U.S. Food and Drug Administration (FDA) on a related study that looks more closely at young children with specific medical conditions who have been exposed to anesthesia and compares them to children with similar medical conditions who were not exposed to [anesthesia](#). The study is part of a national SAFEKIDS Initiative that the FDA is undertaking with several academic and clinical institutions to study the effects of anesthetics and sedatives on brain development in infants and young children.

Source: Mayo Clinic ([news](#) : [web](#))

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