

Use of epidural in childbirth is linked to decreased severe maternal morbidity

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In a study of vaginal births in New York State hospitals, labor neuraxial analgesia—having an epidural or combined spinal and epidural—was associated with a decreased risk of severe maternal morbidity. Deliveries

with a neuraxial analgesic also lessened the risk of post-partum hemorrhaging, the leading cause of preventable severe maternal morbidity, according to the research conducted at Columbia University Mailman School of Public Health and Columbia Vagelos College of Physicians and Surgeons (P&S). The researchers found that a decreased risk of severe maternal morbidity associated with neuraxial analgesia was similar between non-Hispanic White women and racial and ethnic minority women. The results are published online in *JAMA Network Open*.

Labor neuraxial [analgesia](#)—epidural or combined spinal-epidural analgesia is the most effective technique to alleviate [labor](#) pain and is used in nearly three-quarters of birthing [women](#) in the U.S. As of 2021, postpartum hemorrhage (PPH) was the leading cause of preventable severe maternal morbidity (SMM) and overall maternal mortality. SMM in this study involves 16 maternal complications including heart failure and 5 procedures such as hysterectomy.

"Our goal was to examine the potential benefit of labor neuraxial analgesia in reducing severe maternal morbidity," said Jean Guglielminotti, MD, Ph.D., in the Department of Anesthesiology at Columbia P&S, and first author. "The findings indicate that use of labor neuraxial analgesia for vaginal deliveries is associated with a 14% reduction in severe maternal morbidity. Labor neuraxial analgesia may facilitate early evaluation and management of the third stage of labor to avoid escalation of post-partum hemorrhaging into grave complications and death."

Study results showed that SMM occurred in 7712 women (1.3 percent), of which 2748 (36 percent) had PPH.

Use of neuraxial analgesia for vaginal delivery was associated with a 14 percent decrease in the risk of severe maternal morbidity. The reported

incidence of SMM has more than doubled between 1999 and 2017, affecting approximately 1 in 60 women in 2017. Of concern, the risk of SMM is up to a 3-fold increase for racial and ethnic minority women compared with non-Hispanic White women. Therefore, expanding access to and utilization of labor neuraxial analgesia may contribute to improving maternal [health](#) outcomes.

To assess the association between labor neuraxial analgesia and SMM, the researchers used data from a large cohort of vaginal deliveries in New York hospitals. The study sample included hospitalizations for vaginal delivery among women aged 15 to 49 years between January 2010, and December 2017. The analysis was limited to New York, as it is the only Healthcare Cost and Utilization Project participating state also providing information on anesthesia care.

During the study period there were 575,524 women with vaginal deliveries. The average age of the women was 28 years, of which 8 percent were non-Hispanic Asian or Pacific Islander, 15 percent were non-Hispanic Black, 18 percent were Hispanic, 45 percent were non-Hispanic White, and 13 percent were of other race and ethnicity.

While approximately 80 percent of non-Hispanic white women receive the analgesia nationwide, 70 percent of non-Hispanic Black women and only 65 percent of Hispanic women receive it. Additionally, about 75 percent of pregnant women with [health insurance](#) receive labor neuraxial analgesia but only half of uninsured pregnant women do.

Several intervention programs could help increase access to and utilization of labor neuraxial analgesia, including prenatal maternal education, Medicaid expansions, and in-house obstetric anesthesia teams. "These programs may improve patient participation in clinical decision making and access to care," observed Guohua Li, MD, DrPH, professor of epidemiology and Anesthesiology at Columbia Mailman

School and P&S, and senior author. "Increasing the use of labor neuraxial analgesia among minority women would help narrow the racial and ethnic gap in the utilization of obstetric anesthesia care, likely leading to improvement in maternal health equalities."

More information: Jean Guglielminotti et al, Use of Labor Neuraxial Analgesia for Vaginal Delivery and Severe Maternal Morbidity *JAMA Netw Open* (2022). [DOI: 10.1001/jamanetworkopen.2022.0137](https://doi.org/10.1001/jamanetworkopen.2022.0137)

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