

# Women who opt for laughing gas during labor, may still get an epidural, study shows

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The majority of women who chose nitrous oxide (laughing gas) to manage labor pain, ultimately decide to have an epidural, according to new research presented at the Anesthesiology 2016 annual meeting. Researchers found nitrous oxide provided limited pain relief, with patients reporting no change in average pain scores after its use.

"Nitrous oxide is gaining interest among expectant mothers as an option to manage labor pain and is becoming more widely available in the United States," said Caitlin Sutton, M.D., an obstetric anesthesiology fellow at Stanford University School of Medicine in California and lead investigator. "However, we found that for the majority of patients, nitrous oxide does not prevent them from requesting an epidural. While nitrous oxide may be somewhat helpful, but epidural anesthesia remains the most effective method for managing labor pain."

Not traditionally used to manage labor pain in the United States until recently, nitrous oxide is more commonly administered during labor in countries such as the United Kingdom and Australia. Nitrous oxide is an inhaled anesthetic gas that helps reduce anxiety and makes patients less aware of pain, but it does not eliminate it. Conversely, epidural anesthesia blocks pain in the lower part of the body, allowing the laboring mother to be awake and alert throughout delivery.

In the study, researchers at one U.S. obstetric center reviewed the medical records of 4,698 women who delivered vaginally between September 2014 and September 2015. They found only a small proportion of women (148 patients) at their institution chose to use nitrous oxide for labor pain management. They then examined the demographic characteristics of the women, the effectiveness of nitrous oxide for their pain relief, and the number of women who ultimately decided to have an epidural.

The average patient reported pain score given immediately prior to nitrous oxide inhalation was 8 (on a scale from 0 to 10). The average pain score remained the same after nitrous oxide use. The average length of time that nitrous oxide was used was 80 minutes. Ultimately, 60 percent of women who used nitrous oxide decided to get an epidural. Factors that influenced conversion from nitrous oxide to epidural use included both inducing and augmenting labor (which involves stimulating uterine contractions) with the hormone oxytocin.

"Future studies are needed to further determine which women in labor would most benefit from nitrous oxide," said Dr. Sutton. "However, our current study findings provide valuable data for other institutions that are considering offering nitrous oxide. Knowing which patients are more likely to convert from [nitrous oxide](#) to an epidural can help physician anesthesiologists offer more individualized counseling to patients when they are in labor."

Epidural anesthesia is the most popular type of [pain relief](#) administered during labor. The authors report that more than 82 percent of all births at their institution involve an epidural.

Provided by American Society of Anesthesiologists

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