



# Effective Health Care Long-term Harms of Regional vs. General Anesthesia in Infants Nomination Summary Document

## Results of Topic Selection Process & Next Steps

- Long-term harms of regional vs. general anesthesia in infants is not feasible for a full systematic review due to the limited data available for a review at this time.
- This topic could be considered for a potential new research project within the Effective Health Care (EHC) Program.

## Topic Description

**Nominator:** Individual

**Nomination Summary:** The nominator states that infants exposed to general anesthesia may have long-term adverse neurodevelopmental outcomes. She questions whether regional anesthesia might improve the long-term safety for infants undergoing surgery.

**Population(s):** Infants (under 12 months) undergoing elective or emergency/urgent surgery

**Intervention(s):** Regional anesthesia

**Comparator(s):** General anesthesia

**Outcome(s):** ADHD, developmental delay, autism spectrum disorder, behavioral abnormalities

**Key Questions from Nominator:** 1. For infants with exposure to general anesthesia who may have long-term adverse neurodevelopmental outcomes, what is the effectiveness of an alternate anesthetic technique of regional anesthesia?

## Considerations

- The topic meets EHC Program appropriateness and importance criteria. (For more information, see <http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/>.)
- Infants sometimes require surgical treatments using anesthesia. Some infants receive surgery in the hospital, while others receive surgery on an outpatient basis. Because these surgeries are more common in low birth weight and premature babies, these surgical procedures are becoming more common as a result of more preterm infants surviving due to improvements in perinatal medicine. Infants are generally very sensitive to the respiratory depressant action of opioids and

muscle relaxants. In view of these effects, many investigators have suggested the use of awake regional anesthesia to reduce the incidence of post-operative apnea.

- Very few studies addressing the comparative effectiveness of regional and general anesthesia in infants were identified; therefore, this topic is not feasible for a full systematic review due to the limited data available for a review at this time.
- Potential new clinical research to examine long-term harms of anesthesia in infants would be valuable for moving this topic forward.