

Blood flow and the brain – how infant heart surgery impacts brain health

childhood
disability
LINK



Summary

Harvard study finds that brain blood flow is affected by heart surgery in very young infants. Researchers at the Harvard School of Public Health studied brain health following heart surgery in very young infants. They found that approximately one in six of the infants showed problems in their ability to regulate blood flow in the brain. Risk factors for these problems included high carbon dioxide levels and higher pressure in the arteries. The scientist recruited a group of infants, aged 9 months and younger, who were about to have open heart surgery and who were in the cardiac intensive care. In order to look at brain health, they studied the children at 6 hours and 20 hours following their heart surgery. The scientists used bedside monitoring tools to record blood flow.

What families should know

Following open-heart surgery, young children may be at risk of having unstable blood flow in the brain, possibly placing them at risk for developmental problems long-term.

What practitioners should know

Non-invasive bedside monitoring may assist in the identification of infants at risk for neurologic abnormalities following open-heart surgery. Abnormal cerebral blood flow following infant cardiac surgery is associated with two important preventable factors: High carbon dioxide levels and fluctuating blood pressure.

Reference

Bassan, H., Gauvreau, K., Newburger, J.W., Tsuji, M., Limperopoulos, C., Soul, J.S., Walter, G., Laussen, P.C., Jonas R.A., & du Plessis A.J. (2005). Identification of pressure passive cerebral perfusion and its mediators after infant cardiac surgery. *Pediatric Research*, 57, 35-41.