



New Test May Provide a Safe and Effective Means to Prevent Brain Injury During Pediatric Cardiac Surgery

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Pediatric cardiac surgery teams now may have a new tool in their arsenal to prevent [brain injury](#) in children who undergo surgery for congenital heart defects.

Current statistics show that the incidence of [brain injury](#) during pediatric heart surgery is between 30 and 70 percent. Before now, there were few options available to the surgical team to evaluate and assess brain injury while it was occurring during surgery. The test, the hemoglobin volume index, allows the doctors to detect change in brain blood flow.

The test was developed by a team which was headed up by R. Blaine Easley, MD, associate professor of anesthesiology and pediatrics at Baylor College of Medicine in Houston. The test utilizes a small amount of blood to detect injury to brain tissue.

In conjunction, an auto-regulation monitoring test was also developed to monitor brain blood flow in pediatric patients during surgery.

The test was designed around a correlation the team found between auto-regulatory changes in the brain and the almost concurrently occurring signs of brain injury. Based on that discovery, the team was able to develop the real-time monitoring test, so that injury could be detected as it is occurring. The clinical and therapeutic significance of that is that doctors may now be able to better manage patients through more aggressive control of blood pressure during surgery. The decline in arterial blood flow in the brain may signal areas of brain tissue are not receiving adequate blood to maintain healthy brain tissue.

A multi-center study to examine procedure test results, MRI changes and neuro-developmental outcomes 18 months after surgery is now in the planning stages.

For more information, read: [Safer Congenital Heart Surgery in Kids](#)