

Stem cells may provide treatment for brain injuries

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Stem cells derived from a patient's own bone marrow were safely used in pediatric patients with traumatic brain injury (TBI), according to results of a Phase I clinical trial at The University of Texas Health Science Center at Houston (UTHealth). The results were published in this month's issue of *Neurosurgery*, the journal of the Congress of Neurological Surgeons.

"Our data demonstrate that the acute harvest of bone marrow and infusion of bone marrow mononuclear cells to acutely treat severe TBI in children is safe," said Charles S. Cox, Jr., M.D., the study's lead author and professor of pediatric neurosurgery at the UTHealth Medical School. The clinical trial, which included 10 children aged 5 to 14 with severe TBI, was done in partnership with Children's Memorial Hermann Hospital, where Cox is director of the pediatric trauma program.

All the children were treated within 48 hours of their injury with their own [stem cells](#), which were collected from their bone marrow, processed and returned to them intravenously. UTHealth's Department of Neurology is also currently testing the same [bone marrow](#) stem cell procedure in adults with [acute stroke](#). In a separate trial, Cox is testing the safety of using a patient's own cord blood stem cells for [traumatic brain injury](#) in children.

As a Phase I trial designed to look at feasibility and safety, the study did not assess efficacy. However, after six months of follow-up, all of the children had significant improvement and seven of the 10 children had a

"good outcome," meaning no or only mild disability.

Children who survive severe TBI are often left with serious complications and disability. Currently, there are no effective treatments to protect or promote repair of the brain in these brain-injured children.

Provided by University of Texas Health Science Center at Houston

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