

## Research In Focus: A Weekly Digest of New Research from the NIDILRR Community

### Mild TBI Can Have a Lasting Impact for Young Children, but It's Not Clear Whether They Receive the Rehabilitation and Education Services They May Need

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A traumatic brain injury (TBI) is brain damage resulting from an external force, such as a fall or a car accident. TBI can be rated as mild, moderate, or severe depending on how long the person loses consciousness. Some people with mild TBI, sometimes called a concussion, may still experience injury serious enough for the damage to be seen on imaging tests like magnetic resonance imaging (MRI). According to the Centers for Disease Control and Prevention, children age 5 years and younger have the highest number of emergency department visits for TBI and most are discharged to home at the time of injury. For young children, even mild TBI can have lasting effects on learning and behavior that may persist into the elementary-school years and beyond. Research has shown that rehabilitation and educational supports may help these children successfully transition to school. However, many young children may not receive rehabilitation or educational supports after a TBI, especially if they are not hospitalized at the time of the injury. In a recent NIDILRR-funded study, researchers asked parents of young children with TBI about their service history between the injury and first study visit. The researchers wanted to find out how many of the children received rehabilitation or preschool-based services related to their TBI. They also wanted to find out whether children with more severe injuries or longer hospital stays were more likely to receive services.

Researchers at the project on [Language and Literacy Outcomes of Preschool Children with Traumatic Brain Injury](#) interviewed the parents of 39 children with TBI at the time of the initial study visit of a longitudinal study. The children were 6-10 years old, and all had experienced their TBI at least a year before the interview. On average, the children were 2.3 years old when they experienced their TBI and all had experienced their injury before beginning kindergarten. During the interviews, the parents were asked about how long their child stayed in the hospital after injury, and whether or not their child received various services, including occupational, physical, or speech therapy; neuropsychological testing; services from an early intervention program for toddlers; or special education preschool services. The researchers also reviewed medical records to obtain information on injury severity.

The researchers found that, although most of the children had mild injuries, more than half had injuries significant enough that skull or brain tissue damage appeared on imaging tests. Only about one-fourth of the children received any rehabilitation services such as physical or speech therapy after their TBI. In addition, only about one-fourth of the children received any neuropsychological assessment after their injury. None of the

children received early intervention or special education preschool services after their TBI.

When the researchers looked at who was most likely to receive services, they found that the children who had stayed in the hospital for five days or longer were almost six times more likely than the children with shorter hospital stays to receive any rehabilitation services. However, children whose imaging tests showed evidence of skull or brain tissue damage were no more likely to receive these services than those whose imaging findings did not show such evidence.

Given that mild TBI can have lasting effects on learning and behavior that may persist into the elementary-school years and beyond, the authors noted that young children with TBI may benefit from rehabilitation or special education services, even if their injuries are mild. Medical professionals may wish to educate parents about the long-term impacts of TBI during follow-up appointments and make referrals to appropriate services available to young children at least for evaluation and monitoring. Early childhood educators may also wish to learn about the long-term impacts of childhood TBI in order to monitor children and make appropriate service recommendations.

#### To Learn More

The Model Systems Knowledge Translation Center (MSKTC) offers a wide array of information on TBI including this factsheet on Returning to School After Traumatic Brain Injury <https://msktc.org/tbi/factsheets/returning-school-after-traumatic-brain-injury>

The Center on Brain Injury Research and Training (CBIRT) conducts research and training on TBI for parents, educators, and therapists. Explore their resources for Back to School <https://cbirt.org/back-school>

#### To Learn More About this Study

Haarbauer-Krupa, J., Lundine, J.P., DePompei, R., & King, T.Z. (2018) [Rehabilitation and school services following traumatic brain injury in young children](#). *NeuroRehabilitation*, 42, 259-267. This article is available from the NARIC collection under Accession Number J78729.

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