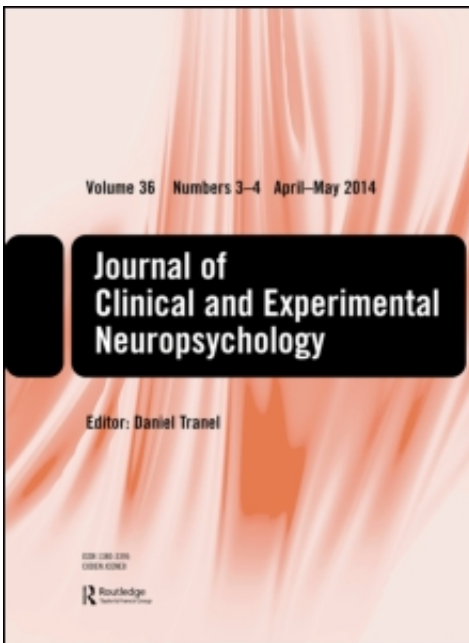


New tool provides unique insight for those with traumatic brain injury

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A new study reveals that individuals with traumatic brain injury (TBI) have significantly more difficulty with gist reasoning than traditional cognitive tests. Using a unique cognitive assessment developed by researchers at the Center for BrainHealth at The University of Texas at Dallas, findings published Friday in the *Journal of Clinical and Experimental Neuropsychology* indicate that an individual's ability to "get the gist or extract the essence of a message" after a TBI more strongly predicts his or her ability to effectively hold a job or maintain a

household than previously revealed by traditional cognitive tests alone. The study also further validates the Center for BrainHealth's gist reasoning assessment as an informative tool capable of estimating a broad range of daily life skills.

"Gist reasoning characterizes a meaningful, complex cognitive capacity. Assessing how well one understands and expresses big ideas from information they are exposed, commonly known as an ability to "get the gist", is window into real life functionality. I do not know of any other paper and pencil test that can tell us both," explained Asha Vas, Ph.D., research scientist at the Center for BrainHealth and lead study author. "Although performance on traditional cognitive tests is informative, widely-used measures do not paint the full picture. Adults with TBI often fare average or above on these structured measures. All too often, adults with brain injury have been told that they ought to be fine; in reality, they are not doing and thinking like they used to prior to the injury and struggle managing everyday life responsibilities years after the injury. Gist reasoning could be a sensitive tool to connect some of those dots as to why they are having trouble with real-life functionality despite falling into the range of "normal" on other cognitive tests."

Study participants included 70 adults ages 25-55: 30 suffered a TBI one year or longer prior to the study and 40 were healthy controls. The TBI group and matched controls were of similar socioeconomic status, educational backgrounds, and IQ. Researchers administered a series of standard cognitive assessments, including working memory, inhibition, and switching. Researchers also gave the gist reasoning assessment, which studies the number of gist-based ideas (not explicitly stated facts) participants are able to abstract from multiple complex texts. Daily life functionality in TBI participants was evaluated using a self-rated questionnaire that included topics such as problem solving at work, managing finances, organizing grocery lists at home, and social interactions.

Although the two groups had similar IQ, reading comprehension and speed of processing scores, nearly 70% of the TBI group scored lower on gist reasoning compared to controls. The TBI survivors' decreased gist-reasoning performance showed a direct correlation with difficulties at work and at home. Interestingly the cumulative score of all standard [cognitive tests](#) only predicted daily function with 45% accuracy in individuals with TBI. Adding the gist reasoning measure boosted accuracy to 58%.

"TBI needs to be treated as a chronic condition. While acute recovery care is essential, long-term monitoring and effective interventions are necessary to mitigate persistent or later-emerging deficits and ensure maximum brain regeneration and cognitive performance," said Sandra Chapman, Ph.D., founder and chief director at the Center for BrainHealth and Dee Wyly Distinguished University Professor in the School of Behavioral and Brain Sciences at UT Dallas. "We don't want anyone who has survived a TBI to think that if gist reasoning and day-to-day life is challenging today that it will always be that way, because gist reasoning can be improved. In an earlier study conducted at the Center for BrainHealth, we found that individuals with TBI can improve gist reasoning. This is very promising outcome, because increased gist reasoning is associated with improved functionality and greater brain blood flow, a sign of increased brain health."

The researchers theorize that gist reasoning impairments could reflect losses in flexible and innovative thinking and that losses in these areas hinder optimal daily life functioning, including job performance and social relationships. "Deficits of this nature may manifest in a lessened ability to problem solve in unexpected situations and understand others' point of view," Was said. The Center is currently conducting multiple projects to study the effectiveness of high performance brain training strategies in individuals with TBI and other populations, to help improve brain function across the lifespan and enrich daily life.

More information: [www.tandfonline.com/doi/full/10.1080/17445019.2015.1014478#](http://www.tandfonline.com/doi/full/10.1080/17445019.2015.1014478).VNEA1naqyi4

Provided by Center for BrainHealth

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