

# What the ability to 'get the gist' says about your brain

February 17 2017

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Drs. Jeffrey Spence and Asha Vas investigate a test that may help doctors and clinicians identify previously undiagnosed cognitive changes that could help explain daily life difficulties experienced by TBI patients. Credit: Center for BrainHealth

Many who have a chronic traumatic brain injury (TBI) report struggling

to solve problems, understand complex information and maintain friendships, despite scoring normally on cognitive tests. New research from the Center for BrainHealth at UT Dallas finds that a gist reasoning test, developed by clinicians and cognitive neuroscientists at the Center, is more sensitive than other traditional tests at identifying certain cognitive deficits.

The study, published in *Journal of Applied Biobehavioral Research*, suggests the gist reasoning test may be sensitive enough to help doctors and clinicians identify previously undiagnosed [cognitive](#) changes that could explain the daily life difficulties experienced by TBI patients and subsequently guide appropriate therapies.

The gist reasoning measure, called the Test of Strategic Learning, accurately identified 84.7 percent of chronic TBI cases, a much higher rate than more traditional tests that accurately identified TBI between 42.3 percent and 67.5 percent of the time.

"Being able to 'get the gist' is essential for many day-to-day activities such as engaging in conversation, understanding meanings that are implied but not explicitly stated, creating shopping lists and resolving conflicts with others," said study lead author Dr. Asha Vas of Texas Woman's University who was a postdoctoral fellow at the Center for BrainHealth at the time of the study. "The gist test requires multiple cognitive functions to work together."

The study featured 70 participants ages 18 to 55, including 30 who had experienced a moderate to severe chronic [traumatic brain injury](#) at least one year ago. All the participants had similar socioeconomic status, educational backgrounds and IQ.

Researchers were blinded to the participant's TBI status while administering four different tests that measure abstract thinking—the

ability to understand the big picture, not just recount the details of a story or other complex information. Researchers used the results to predict which participants were in the TBI group and which were healthy controls.

During the [cognitive tests](#), the majority of the TBI group easily recognized abstract or concrete information when given prompts in a yes-no format. But the TBI group performed much worse than controls on tests, including gist reasoning, that required deeper level processing of information with fewer or no prompts.

The gist reasoning test consists of three texts that vary in length (from 291 to 575 words) and complexity. The test requires the participant to provide a synopsis of each of the three texts.

Was provided an example of what "getting the gist" means using Shakespeare's play Romeo and Juliet.

"There are no right or wrong answers. The test relies on your ability to derive meaning from important story details and arrive at a high-level summary: Two young lovers from rival families scheme to build a life together and it ends tragically. You integrate existing knowledge, such as the concept of love and sacrifice, to create a meaning from your perspective. Perhaps, in this case, 'true love does not conquer all,'" she said.

[Past studies](#) have shown that higher scores on the gist reasoning test in individuals in chronic phases of TBI correlate to better ability to perform daily life functions.

"Perhaps, in the future, the gist reasoning test could be used as a tool to identify other cognitive impairments," said Dr. Jeffrey Spence, study co-author and director of biostatistics at the Center for BrainHealth. "It may

also have the potential to be used as a marker of [cognitive changes](#) in aging."

**More information:** Asha K. Vas et al, Sensitivity and specificity of abstraction using gist reasoning measure in adults with traumatic brain injury, *Journal of Applied Biobehavioral Research* (2016). [DOI: 10.1111/jabr.12073](#) Asha K. Vas et al. Sensitivity and specificity of abstraction using gist reasoning measure in adults with traumatic brain injury, *Journal of Applied Biobehavioral Research* (2016). [DOI: 10.1111/jabr.12073](#)

Provided by Center for BrainHealth

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