

Demonstrating Disability Following Traumatic Brain Injury Should Include Objective Social Measures: Towards a Social IQ Test.

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No one would want to see someone who is genuinely disabled being denied benefits he or she needs. Yet exactly this happens to some people with traumatic brain injuries (TBI). The way neuropsychological assessments are currently done may not capture all symptoms, particularly social/emotional deficits. Most widely-used neuropsychological tests focus on cognition, e.g., memory and attention, but long-term changes in social judgment and emotional processing are common following TBI. To help fill a gap in objective tests, we developed 4 new measures to assess social/emotional competencies quantitatively. On all four, people with moderate to severe TBI scored lower than matched controls without brain damage. A composite of 3 social/emotional measures could predict who had a brain injury and who did not, whereas a composite of 3 commonly-used cognitive measures could not make that prediction. This leads to a surprising conclusion: for moderate to severe TBI, social/emotional measures can be more sensitive measures of TBI symptoms than some commonly-used cognitive tests.

As a society, we recognize that someone with Alzheimer's cannot help the fact that he cannot remember who came to visit yesterday, or that people with stroke cannot help the fact that they cannot move a limb. With social deficits, however, our society does not recognize that some people with neurological damage might be socially inappropriate for a neurological reason. The general attitude is that someone who is socially inappropriate has a personal or moral failing.

There is little public education to broadcast a central insight of social neuroscience: deficits in social behavior can have a neurological origin. Parts of the brain are specialized for processing social and emotional information. When those areas are damaged, as they can be in TBI, socially inappropriate behavior is a neurological consequence of the damage. The person may have trouble reading social cues, inhibiting impulses, or being aware that their behavior is inappropriate.

Yet such abilities are usually not assessed objectively. To demonstrate in a legal hearing that someone is disabled requires objective, performance-based measures: tests that are well-validated scientifically, requiring patients to demonstrate competence by solving a problem in that domain. Neuropsychologists generally give performance-based tests only to measure cognitive competencies – memory, attention, problem-solving – with social/emotional functions assessed qualitatively or by a report from caregivers, a method not as likely to carry weight in legal proceedings. We believe

neuropsychologists must also measure social/emotional competencies objectively to provide the best information to courts, patients, and families about areas of disability, appropriate rehabilitation, and difficulties they are likely to encounter.

We developed 3 performance-based tests and 1 informant-report questionnaire measuring social/emotional competencies on all 4 of which 16 patients with moderate to severe TBI scored significantly lower than 16 age- and education-matched people without TBI. Our questionnaire measuring social skill correlated with other social measures, and had high statistical reliability. Performance-based measures included 1) a video-based task, requiring inferences about target actors' intentions, emotions, and attitudes toward another person; 2) a heartbeat detection task measuring physiological self-awareness; 3) an animation-based perspective-taking task. We also gave participants 3 commonly-used cognitive tests of processing speed and executive functions, selected for their known sensitivity to TBI. Logistic regression showed that our three social/emotional performance-based measures distinguished patients from controls, whereas the 3 cognitive tests did not, indicating that the social/emotional measures were more sensitive.

Clinical assessment of people with TBI should be extended to objective, validated measures of social/emotional competence to capture the full range of chronic TBI symptoms, and help in demonstrating the full range of disability in TBI.

For further information about this research, either go to www.assesscompetency.com/faq.html or contact Dr. Stone: 1-303-669-8528, or vestone@gmail.com. Catherine Hynes, M.A. can be contacted at cahynes@gmail.com.

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