

Quotes From Researchers About the BRAVE Trial

To assist reporters covering the BRAVE study, four of the researchers, who are among the co-authors of the study report, have provided the following quotes, which may be used in news coverage. Those researchers are:

Morris D. Bell, PhD, ABPP – Dr. Bell is the study's Connecticut site lead, as well as a Professor Emeritus and Senior Research Scientist at Yale University School of Medicine and a Senior Research Career Scientist at the VA Connecticut Healthcare System

Joseph DeGutis, PhD – Dr. DeGutis is the study's Boston site lead, as well as an Associate Professor of Psychiatry, at Harvard Medical School and an Assistant Professor of Psychiatry at the VA Boston Healthcare System

Chad Grills, PhD, ABPP-CN – Dr. Grills is the study's Hawaii site lead, as well as Chief of the Brain Injury Lab, at the Desmond T. Doss Health Clinic at Schofield Barracks, which is associated with the Tripler Army Medical Center

Henry W. Mahncke, PhD – Dr. Mahncke is the study's coordination lead and principal investigator under the CDMRP which funded the BRAVE Study, and, as CEO, leads the research team at Posit Science, which makes the BrainHQ program.

On the need:

- "Persistent cognitive impairment after concussion continues to be a significant problem for many serving in our armed forces and for our Veterans. There are no approved drugs or medical devices to treat this condition. New approaches are needed to help these people recover." – Dr. Morris Bell
- "In Veterans, pre-military cognitive abilities can be a risk factor for developing problems after military service, these abilities can be impaired by physical and psychological trauma (TBI/PTSD) experienced during service and are important predictors of physical/psychological treatment success. Unfortunately, front-line treatments for Veterans suffering from trauma-related physical and psychological symptoms fail to sufficiently address cognitive deficits and there are currently no at-home programs to address these cognitive deficits." – Dr. Joseph DeGutis
- "Cognitive complaints are common in our active duty and veteran mild TBI populations. Although it is the history of mTBI that gets them into our TBI clinic, we often discover these patients also have significant comorbidities

such as depression, PTSD, chronic pain and sleep problems. We treat the symptoms regardless of the cause.

The BRAVE trial provides gold standard evidence for a new tool in our toolbox to help address cognitive difficulties in these complex patients.” – Dr. Chad Grills

- “While most people make full recoveries after concussion or blast injuries, there are a significant number of people who don’t – reporting persistent cognitive difficulties, sleep disturbances, mood symptoms, or headaches. We need new ways to help these people recover.” – Dr. Henry W. Mahncke

On the trial design:

- “The BRAVE trial was a gold-standard study – a randomized clinical trial of a novel computerized cognitive training program against a strong active control using off-the-shelf computer games. It had well-defined inclusion criteria and standardized outcome measures. This is the first such trial for TBI to meet these high standards.” – Dr. Morris Bell
- “To date, there have been very few really good clinical trials of treatments for cognitive problems in our complex population, and none successfully using computerized training. This is the first such trial to meet the high standards we want to see.” -- Dr. Chad Grills

On the outcomes:

- “The BRAVE trial showed a significant improvement in cognitive performance in the computerized cognitive training group, and the improvement persisted for at least 3 months after training was completed. Almost 80% of participants who got the cognitive training showed significant improvement compared with less than 40% of those who played computer games.” – Dr. Morris Bell
- “The BRAVE trial showed a significant improvement in cognitive performance in the computerized cognitive training group in our sample of complex patients with a history of mTBI, depression and PTSD, and the improvement persisted for at least 3 months after training was completed.” – Dr. Chad Grills
- “The computerized cognitive training showed a persistent improvement in cognitive function, with effect sizes generally comparable to what we see with intensive in-person cognitive rehabilitation. The effect sizes are equivalent to moving from the 50th percentile of performance to the 74th percentile of performance. Not enough to mistake you for Einstein, but big enough to be generally noticeable by patients, and big enough to expect this to be helpful to patients.” – Dr. Henry W. Mahncke

On the implications:

- The BRAVE trial shows we can provide effective treatment remotely using conventional computers, tablets or smart phones. This means our troops and Veterans located just about anywhere can have access to high quality treatment for persistent cognitive problems. That's a potential game-changer, because it means we can reach and help many more people in need." – Dr. Morris Bell
- "Another important implication of the results for Veterans with trauma-related psychological symptoms (e.g., PTSD) is that using in-person cognitive training programs in conjunction with front-line PTSD treatments (e.g., trauma-focused psychotherapy) have previously shown to boost the effectiveness of these treatments.

The current study suggests that a much more scalable, at-home version of cognitive training can be similarly effective in improving the results of front-line PTSD treatments. " – Dr. Joseph DeGutis

- "This is the first highly scalable treatment shown effective in addressing persistent symptoms following a concussive or blast injury – in this study, addressing symptoms that have persisted, on average, more than seven years after the injury." – Dr. Henry W. Mahncke

On next steps for research:

- "An important next step would be to pair the cognitive training program with front-line PTSD treatments such as cognitive processing therapy (CPT), to see if cognitive training can bolster the gains from CPT." – Dr. Joseph DeGutis
- "What we'd like to see next are 'pre-habilitation' studies – where service members do cognitive training before they're deployed into the field, to see if strengthening cognitive function before injury can lessen the incidence of TBIs with resulting cognitive consequences or PTSD." – Dr. Henry W. Mahncke

On next steps for policy makers:

- "Here, we now have an evidence-based and scalable method for treating our injured troops and Veterans – even in remote locations. Having it is not enough. We want to see this technology be accepted into treatment guidelines and incorporated into comprehensive rehabilitation strategies so that improved cognitive functioning can boost the benefits of other rehabilitation strategies including vocational rehabilitation and educational benefits. – Dr. Morris Bell

- "Having expended much time and treasure to complete this successful trial, the Department of Defense and the Veterans Administration need to get this technology into guidelines and actual clinical practice." – Dr. Henry W. Mahncke