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BrainScope™ Announces Release of Concussion Findings in High School and College Football Players

Study supports potential utility of BrainScope technology in development for the assessment of traumatically induced brain injuries

BETHESDA, Md., July 13 /PRNewswire/ -- BrainScope Company, Inc. today announced the release of clinical research findings resulting from a 2008-2009 football concussion study of high school and college athletes it supported. The results, published in a special edition "Biomarkers in Mild Traumatic Brain Injury" of the peer-reviewed *Journal of Head Trauma Rehabilitation*, support the potential utility of the BrainScope device in development as a marker of recovery after sport-related concussion.

This prospective, non-randomized study was conducted by Waukesha Memorial Hospital, Waukesha, WI and ProHealth Care Neuroscience Center & Research Institute led by its Executive Director, Michael McCrea, PhD, ABPP-CN in collaboration with researchers at New York University School of Medicine, New York, NY. The study took place over the 2008-2009 football season (July 2008 – January 2009). In total, 396 male athletes from eight high schools and two colleges in the Milwaukee, WI area participated in the study.

All athletes enrolled in the study underwent pre-season testing on cognitive functioning and postural stability, as well as studies utilizing the BrainScope device and technology in development. During the study's football season, the certified athletic trainer present on the sideline identified athletes as having sustained a concussion immediately after injury according to the study's injury definition and standardized criteria. Injured athletes and matched controls then underwent follow-up assessments of symptoms, cognitive functioning and balance, along with measurements of brain electrical activity at several time points post injury. Twenty-eight (28) athletes were found to have sustained a concussion, 7% of the study population of 396 athletes.

The study indicated that for the concussion group, the brain electrical activity obtained at injury from the BrainScope device and eight days after the injury were significantly different from the subject's pre-season evaluation. The study further indicated that brain function, as reflected in an index derived from quantitative analysis of brain electrical activity, showed abnormalities continued beyond the time point where conventional sideline exams showed that clinical signs and symptoms of the injury had resolved, suggesting the index to be a potential "biomarker" for such injury.

"The findings from this study suggest that the period of time it takes for the brain to fully recover at a physiological level after a sport-related concussion may persist beyond the point at which symptoms and other functional difficulties have resolved," said Dr. McCrea. "This brings significant implications to clinicians faced with determining an athlete's level of recovery and readiness to safely return to competition after concussion."

Dr. McCrea added, "We are continuing to study this phenomenon in athletes and others affected by traumatic brain injury, as well as the utility of this type of technology as a marker that helps clinicians identify brain injury and when the brain has fully recovered."

"This study demonstrates our potential to impact triage management of concussions," said Michael Singer, CEO of BrainScope. "While further research is needed, these findings show the potential utility for injury prevention strategies, particularly with regard to preventing recurrent concussion that might lead to longer term risks."

The full study can be found at http://journals.lww.com/headtraumarehab/Abstract/2010/07000/Acute_Effects_and_Recovery_After_Sport_Related.6.aspx

Additional studies to replicate and further investigate the potential utility of BrainScope's technology in assessing concussion in football are currently underway. BrainScope's novel technology under development aims to address traditional technology constraints through the use of portable point-of-care products that employ a disposable compact frontal electrode headset for data collection, miniaturized hardware, and advanced algorithms that quantify and characterize features of brain electrical activity, such as those associated with TBI.

Currently, BrainScope is undergoing additional clinical data collection trials of TBI-focused research protocols with leading universities and hospitals in the United States including Brooke Army Medical Center in Fort Sam Houston, Texas; Washington University in St. Louis, Missouri (Barnes Jewish Hospital); William Beaumont Hospitals in Royal Oak and Troy, Michigan; Wayne State University (Detroit Receiving Hospital and Sinai Grace Hospital) in Detroit, Michigan; University of Virginia Medical Center in Charlottesville, Virginia; University of Maryland (R Adams Cowley Shock Trauma Center) in Baltimore, Maryland; and Waukesha Memorial Hospital in Waukesha, Wisconsin. BrainScope devices under development for assessment of traumatically-induced head injury and concussions are for investigational use only and have not been submitted for FDA review.

About BrainScope™

Backed by Revolution LLC (created by AOL co-founder Steve Case), Alafi Capital, Brain Trust Accelerator Fund, Draper Fisher Jurvetson, Portage Ventures and ZG Ventures, BrainScope is a medical neurotechnology company that is developing a new generation of hand-held, simple-to-use, non-invasive instruments designed to aid medical professionals in rapidly, accurately, and objectively assessing brain function at the initial point of care. BrainScope devices in development are based on a proprietary technology platform, which integrates databases of brainwave recordings with advanced developments in Digital Signal

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