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National Institute of Nursing Research Uses Quanterix's Simoa Technology to Identify the Significance of Key Protein in Long-term Complications Caused by Traumatic Brain Injury

Study identifies the correlation of tau accumulation in military personnel to those who experienced long-term neurological symptoms after a TBI; findings to be used to identify patients who are most at risk

Lexington, Mass. – August 3, 2015 — [Quanterix Corporation](#), a leader in high definition diagnostics, today announced that [JAMA Neurology](#) has published a new study in which its Simoa (single molecule array) technology was used to identify a protein previously linked to acute symptoms following a traumatic brain injury (TBI). The study, led by the [National Institute of Nursing Research](#) (NINR), a component of the [National Institutes of Health](#), was designed to determine whether levels of tau protein in the blood were correlated to long term effects of a TBI. The findings from the study will be used to provide a framework to identify patients who are most at risk for experiencing chronic symptoms related to a TBI.

As cited in the study, approximately one-third of all U.S. military personnel who serve in combat operations experience at least one TBI. Individuals with TBI are more likely to experience ongoing complications such as post-concussive disorder (PCD), post-traumatic stress disorder (PTSD) and depression. They are also more likely to develop chronic traumatic encephalopathy (CTE)—progressive brain degeneration that leads to dementia following repetitive TBIs. However, there is currently no way to identify individuals who are at the greatest risk for developing these chronic symptoms. To help identify biomarkers that could better pinpoint those at-risk, the researchers explored whether elevated levels of tau—a protein known to have a role in the development of Alzheimer's disease and Parkinson's disease—are related to chronic neurological symptoms in military personnel who had experienced TBI.

Using Quanterix's ultra-sensitive Simoa technology, researchers were able to accurately measure levels of tau in participants' blood. Military participants who had elevated tau levels in their samples and had a history of TBI were compared with participants who had never suffered a TBI. Additionally, researchers found that participants with three or more deployment-related TBIs had significantly higher levels of tau compared with participants who had fewer TBIs. These results will be used in future studies to provide a therapeutic target for treating the causes of CTE and other neurodegenerative and psychological conditions that can result from these types of injury.

“When the brain experiences any kind of trauma, whether caused by a hit on the sidelines at a sporting event or someone impacted during combat while serving in the military, miniscule quantities of protein enter the blood stream. Our technology is the only one sensitive enough to measure these proteins in a way that no one thought possible,” said Kevin Hrusovsky, CEO and Executive Chairman, Quanterix. “This is one of the many studies in which Simoa is being used to further understand and quantify the long term effects of TBI and we are pleased to be working with NINR to continue our mission to understand what is going on in the human body and, in turn, improve the quality of care.”

The study sampled military personnel, with or without a history of TBI, who had been deployed for combat in Operation Enduring Freedom (Afghanistan) and/or Operation Iraqi Freedom within the previous 18 months. The researchers examined participant medical records as well as responses to the

Warrior Administered Retrospective Casualty Assessment Tool to determine if participants had been diagnosed with or treated for a TBI. To read the full study published in the August 3 issue of *JAMA Neurology*, please visit: <http://archneur.jamanetwork.com/journal.aspx>.

About Quanterix

Quanterix is a developer of ground-breaking tools in high definition diagnostics. Its Simoa platform uses single molecule measurements to access previously undetectable proteins. With this unprecedented sensitivity and full automation, Simoa offers significant benefits to both research and clinical testing applications. Quanterix was established in 2007 and is located in Lexington, Massachusetts. To learn more about Quanterix and Simoa, please visit: www.querix.com.

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