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Quanterix' Simoa Technology Advances the Field Toward a Sports-Related Concussion Blood Test

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New CARE Consortium study, representing the largest biomarker study on sports-related concussions (SRC) applies ultra-sensitive biomarker solution to validate serum markers as objective indicators of mild traumatic brain injury (mTBI)

BILLERICA, Mass.--(BUSINESS WIRE)--Jan. 31, 2020-- [Quanterix Corporation \(NASDAQ: QTRX\)](#), a company digitizing biomarker analysis to advance the science of precision health, today announced that researchers have successfully applied its ultra-sensitive Simoa technology to generate data on the value of blood biomarkers as research tools to study pathophysiological mechanisms of concussion and as potential clinical tools and objective indicators for sports-related concussions (SRCs) and mild traumatic brain injuries (mTBIs). The results, published in [JAMA Network Open](#), demonstrate the promise of blood biomarkers to serve as clinical tools for objectively identifying and monitoring head injury, marking a notable advance in the pursuit of a concussion diagnostic test.

"Despite the considerable progress we've made in understanding the impact concussions can have on the brain, they remain a major health risk for athletes at all levels," said Kevin Hrusovsky, Chairman and Chief Executive Officer, Quanterix and founder, [Powering Precision Health \(PPH\)](#). "This study shows that blood biomarkers are one of the most powerful tools in our arsenal for player safety and could enable us to eliminate rudimentary and often inaccurate forms of detection in favor of a conclusive blood test. This could be a game-changer for seeing concussions in real time and informing post-injury decisions that directly impact an athlete's long-term health."

According to the [Brain Injury Research Institute \(BIRI\)](#), there are as many as 3.8 million sports- and recreation-related concussions in the United States each year. Current methods of identification rely on self-reporting or subjective assessments, leading to underreporting or misdiagnosis. SRCs are often considered mild forms of TBI, making accurate diagnosis and subsequent return to play (RTP) decisions challenging. Proper oversight of concussed players is essential to avoid repeat hits during the recovery period, which could lead to second-impact syndrome (SIS) and other long-term health consequences.

Conducted as part of the [CARE Consortium](#), and funded by the [US Department of Defense \(DOD\)](#) and the [National Collegiate Athletic Association \(NCAA\)](#), the study used Simoa to evaluate a total of 504 collegiate athletes. In what is considered the largest athletic cohort for a biomarker concussion study to date, subjects were assessed through clinical testing and blood collection starting in pre-season and at various stages following an injury, from acute postinjury to seven days after RTP. Using Simoa's industry leading multiplexing capabilities, researchers could regularly monitor and quantify four biomarkers associated with TBI: glial fibrillary acidic protein (GFAP); ubiquitin C-terminal hydrolase-L1 (UCH-L1); neurofilament light chain (Nf-L) and tau.

Results of the study demonstrate a strong correlation between concussions and elevated GFAP, UCH-L1 and tau levels in the blood. This supports prevailing theories that a clinically viable concussion test will necessitate a panel of markers rather than relying on a single indicator. The research also broadens the understanding of mTBIs, which are often missed due to the subtlety of symptoms, supporting the use of GFAP and UCH-L1 as sensitive, acute markers for milder head trauma. While Nf-L interaction was not considered significant as a concussion indicator, findings support its use as a measure for seriousness of injury and triggered neuronal damage. Nf-L was the only marker elevated days after RTP in more severely injured athletes with loss of consciousness (LOC) or post-traumatic amnesia (PTA).

The study joins a catalogue of more than 600 peer-reviewed studies powered by Simoa. A considerable portion of this research focuses on how TBIs manifest and progress in high-risk groups, including military personnel, professional hockey players, Olympic boxers, professional football players and more. Quanterix, which was named a [two-time winner in the GE-NFL Head Health Challenge](#), has been a critical fixture in research out of some of the world's leading institutions, such as the National Institutes of Health (NIH), Boston University and the University of Gothenburg. The company is also widely known for enabling research into [novel applications for Nf-L](#), with a robust collection of studies demonstrating the marker's ability to advance early detection of a variety of neurological and neurodegenerative conditions.

"Since the earliest days of PPH and Quanterix, we've believed that the unsolved mysteries of the brain can be answered through the blood," continued Hrusovsky. "This study is the latest proof point for blood biomarkers and reinforces the critical need for ultra-sensitive, multiplexed solutions that can see a variety of markers simultaneously, like Simoa, to one day bring a clinical blood-based diagnostic test to the sidelines. It's studies like this and the ecosystem of Powering Precision Health that continue to represent the important intersection of new technological capabilities with the latest medical research, ushering in a new era of precision health."

To learn more about Quanterix' neurology offerings, [click here](#).

About Quanterix

Quanterix is a company that's digitizing biomarker analysis with the goal of advancing the science of precision health. The company's digital health solution, Simoa, has the potential to change the way in which healthcare is provided today by giving researchers the ability to closely examine the continuum from health to disease. Quanterix' technology is designed to enable much earlier disease detection, better prognoses and enhanced treatment methods to improve the quality of life and longevity of the population for generations to come. The technology is currently being used for research applications in several therapeutic areas, including oncology, neurology, cardiology, inflammation and infectious disease. The company was established in 2007 and is located in Billerica, Massachusetts. For additional information, please visit <https://www.quanterix.com>.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "may," "will," "expect," "plan," "anticipate," "estimate," "intend" and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) are intended to identify forward-looking statements. Forward-looking statements in this news release are based on Quanterix' expectations and assumptions as of the date of this press release. Each of these forward-looking statements involves risks and uncertainties. Factors that may cause Quanterix' actual results to differ from those expressed or implied in the forward-looking statements in this press release are discussed in Quanterix' filings with the U.S. Securities and Exchange Commission, including the "Risk Factors" sections contained therein. Except as required by law, Quanterix assumes no obligation to update any forward-looking statements contained herein to reflect any change in expectations, even as new information becomes available.

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