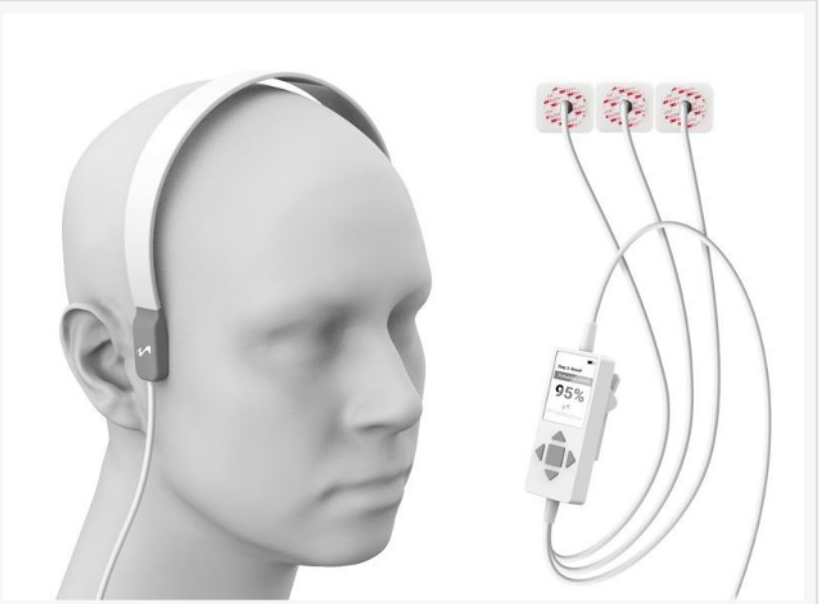
MindRhythm Announces Publication in JAMA Network Open of Novel Headset for Return to Play Decisions in Concussion

Novel, noninvasive, headset detects a newly discovered biometric that allows for objective identification of concussion and recovery



MindRhythm Proprietary Headset Embedded with HeadPulse Technology

CUPERTINO, CALIFORNIA, UNITED STATES, August 11, 2023 /EINPresswire.com/ -- MindRhythm Inc, in collaboration with the University of California San Francisco (UCSF), announces publication of the manuscript titled "Analysis of HeadPulse Biometric Measures Following Concussion in Young Adult Athletes" released today in the journal, JAMA Network Open.

The findings indicate that digital measurement of the HeadPulse, using MindRhythm's proprietary headset, provides an objective measure of concussion status. The HeadPulse, discovered by MindRhythm and researchers at UCSF, provides evidence of normal and abnormal brain function in a variety of neurological conditions. Results suggest that HeadPulse is the first digital biometric that can be used to confirm the presence of concussion and aid in return to play or activity decisions for athletes, which could reduce the potential for long-term neurological damage.

"Concussion is common in sports and returning to play before recovery can cause long-term neurological impairment or permanent brain injury," said Cathra Halabi, MD, Neurorecovery Program Chief, Division of Neurovascular, Weill Institute for Neurosciences and lead author of the paper. "Current post-concussion return-to-play decisions are often based on symptoms or activity tolerance. However, our study showed that on average HeadPulse changes persisted after return-to-play despite the absence of concussion symptoms, raising concerns about relying on symptom burden for return-to-play. There remains a huge unmet need for an objective marker of recovery from sports-related concussion to reduce short and long-term impairment,

and targeting normal HeadPulse range during treatment and recovery may offer an important tool for the athlete and care team."

Significant research supports the premise that full recovery is essential to improving long-term outcomes post-concussion. Symptom based scoring systems are considered the gold standard for diagnosis and recovery monitoring. However, as symptoms often subside while the brain is still recovering, there remains a crucial need for an objective, accurate tool to define recovery status.

"HeadPulse measurements are objective, easy to obtain and take only 90 seconds, as compared to currently available concussion tools that require subjective testing of cognitive function. This is exciting because all subjective tests can be gamed," said Wade S. Smith, MD, PhD, Chief of the UCSF Neurovascular Division, co-founder of MindRhythm and co-author of the paper. "This differentiation is notable since the device showed that the concussion signal increased even when many of the players no longer reported symptoms of concussion and returned to play, while those who did not return had lower HeadPulse concussion values.

Dr. Smith continued, "This study demonstrates that measurement of the HeadPulse after concussion may objectively aid personalized return-to-play decisions and can identify when an athlete is engaging in activity that worsens this signal. We believe MindRhythm's HeadPulse device can provide critical objective biometric measures that can be used by the athlete and medical professionals to decide when to return to play and also monitor them afterward to ensure the HeadPulse remains in the normal range. This has significant ramifications for the prevention of long-term injury to the brain experienced in professional athletes."

About the Study
This is a cohort study of 101 Adelaide Football league players in Southern Australia with 44 observed concussions. 81% of concussed athletes (diagnoses using standard clinical assessments) were identified by analysis of brief, noninvasive HeadPulse measurements obtained from the headset. Sensitivity of the device, time of concussion, onset, and duration of disruption of the HeadPulse signal were investigated. Participants were followed for one month with repeat recordings and completed a Neurological Symptom Inventory (NSI) with each recording.

HeadPulse changes lasted 12 days longer than symptoms on average. After concussed athletes returned to play (15 participants) or other activities, biometric values rose or remained elevated despite low or no symptoms, suggesting that asymptomatic athletes who tolerate physical activity experience intracranial changes after return-to-play. More pronounced abnormality was found in multiple participants after return-to-play despite symptom resolution.

"Our HeadPulse technology has the ability to monitor and potentially optimize return-to-play decisions for athletes and thereby is expected to improve outcomes," said John Keane, co-founder and CEO of MindRhythm. "To our knowledge, this study includes the largest series of

longitudinal concussion biometric measurements. Importantly, it also includes female athletes who are at a greater risk of experiencing concussion while historically being an underserved population. This data can also be applied beyond the scope of sports, helping all concussed patients know when it is safe to return to normal activities."

Co-Authors
Lynda Norton, RN, MPH, and Kevin Norton, PE, PhD, of the University of South Australia, Adelaide.

For more information on the trial, go to ClinicalTrials.gov (NCT05769296, NCT05771051), Australian New Zealand Clinical Trials Registry ACTRN12621001707853.

About MindRhythm
MindRhythm is a medical technology company focused on preventing neurological injury. Founded by world-renowned scientific experts with significant commercialization success, MindRhythm's monitoring technology provides real-time visibility to life-threatening situations at home, prehospital, in the operating room, and on the field. MindRhythm's technology allows clinicians to intervene, optimize and manage care to prevent brain damage. Collaborating with the healthcare community, MindRhythm looks to apply a systematic approach to reducing time to treatment in strokes and monitor neurological health during recovery from injury. Together, let's save lives and improve the quality of life: https://mindrhythm.com.

Beth Johnson
MindRhythm Incorporated
+1 860-836-8630
email us here
Visit us on social media:
Facebook
Twitter
LinkedIn