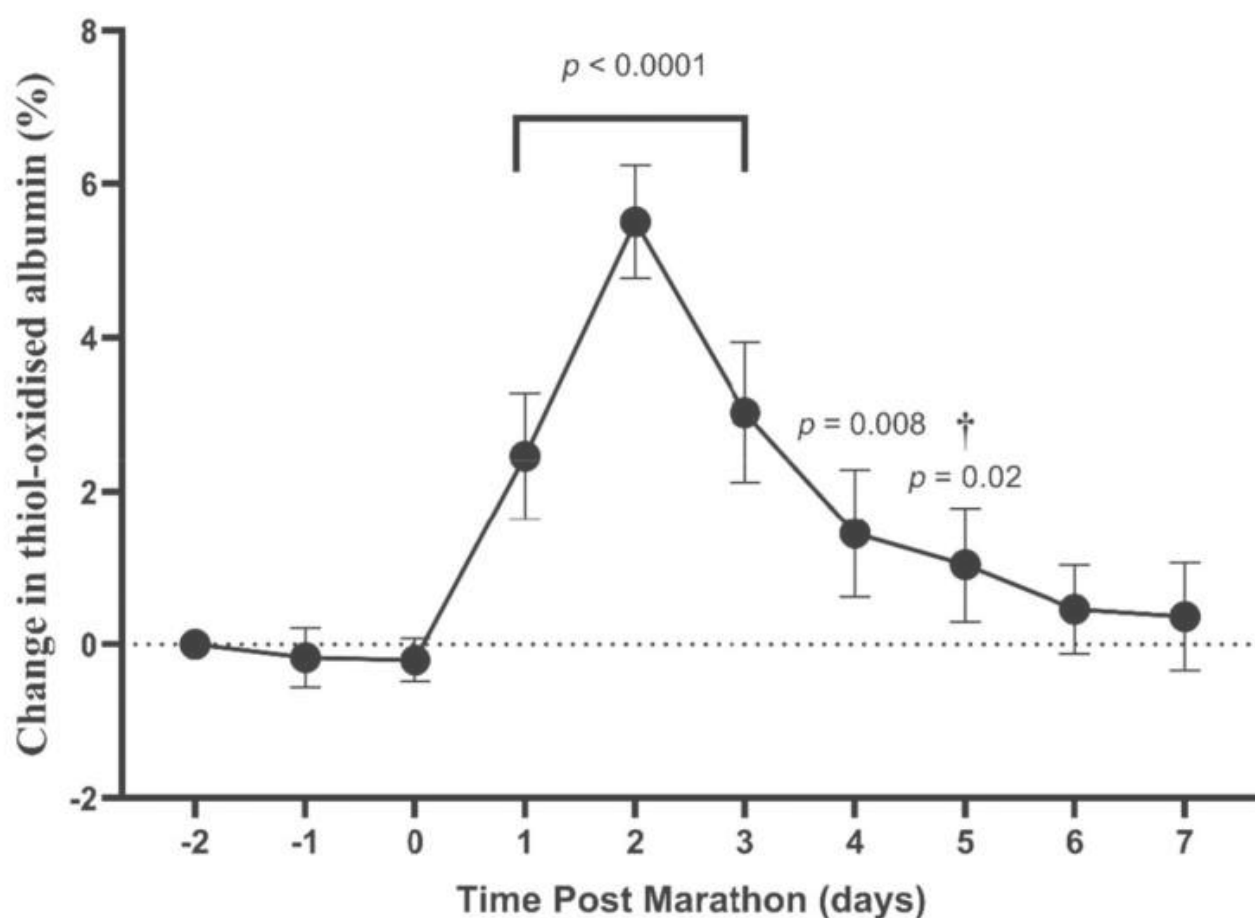


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Fingerprick blood test detects muscle damage and tracks recovery in elite athletes

by Proteomics International Laboratories Limited



Change in the level of thiol-oxidized albumin for the pre-marathon and post-marathon testing periods. Credit: *Physiological Reports* (2024). DOI: 10.14814/phy2.70155

Knowing when an athlete can safely return to training after intense exercise typically relies on coaches and athletes making best-guess estimates, but a new easy-to-use fingerprint blood test, developed by Australian researchers, first identifies lurking muscle damage and then tracks how long recovery is taking.

Proteomics International Managing Director Dr. Richard Lipscombe said, "The OxiDx test could literally be a game-changer for sports medicine. With this easy-to-use test that can detect unseen muscle damage, athletes can adjust their training regime to avoid more serious injury.

"Athletes recover at different rates, so the rule of thumb approach of resting for a few days can often result in athletes returning to training too quickly, getting injured again and prolonging their recovery time. The OxiDx test has implications for all high-performance athletes, from footballers to horse racing."

The world-first, patented OxiDx technology measures levels of muscle damage using a simple finger-prick blood sample to detect protein biomarkers in the blood. There is no equivalent test on the market. The research is [published](#) in the journal *Physiological Reports*.

"There has been a significant gap in the field of sports science focusing on the lack of sensitive biomarkers for exercise-induced muscle damage," Dr. Lipscombe said.

Marathon running causes extensive muscle damage, known as exercise-induced muscle damage (EIMD), which can impair performance and increase injury risk if recovery is incomplete.

"Levels of oxidative stress peak 48 hours post-marathon and remain elevated for up to five days, aligning with traditional muscle damage indicators like reduced muscle force, increased soreness, and elevated creatine kinase. However, for some athletes, recovery can take longer."

"This easy-to-use test provides athletes with accurate measures so they can confidently make decisions about when to return to training," he said.

Proteomics International aims to launch the new test in Australia through its OxiDx subsidiary in the first half of 2025.

More information

Christopher James et al, Temporal changes in thiol-oxidized plasma albumin are associated with recovery from exercise-induced muscle damage after a marathon, *Physiological Reports* (2024). DOI: [10.14814/phy2.70155](https://doi.org/10.14814/phy2.70155)

Key medical concepts

[Oxidative Stress](#)[Creatine Kinase](#)

Provided by Proteomics International Laboratories Limited

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