

# Researchers discover evolutionary evidence in ultra-marathon runners

August 2 2023

---



Credit: CC0 Public Domain

Researchers from Loughborough University discovered that athletes who lose weight during these events, which often last days and cover hundreds of miles, show significant adaptation of cognitive function to

promote foraging ability.

This may increase ability to find food and increase survival chances during periods of energetic stress. It is believed that these changes appear as the [athletes'](#) brains remodeled to counteract a negative change in environment.

Dr. Danny Longman, a Lecturer in Physiology based in the School of Sport, Exercise and Health Sciences, explained, "Throughout the human evolutionary journey, our ancestors regularly faced [food insecurity](#) and energetic stress."

"Here, we worked with ultramarathon runners to study how our brains might adapt during conditions of energetic stress. In runners covering distances of 250km (155 miles), we found a significant increase in performance in cognitive tasks linked to foraging ability. This has clear adaptive value, as an improved ability to find food would increase survival chances."

The study—delivered in collaboration with Professor Jay Stock (Western University, Canada) and Professor Jonathan Wells (University College London) focused on a cohort of ultra-endurance athletes participating in two 5-day 250km footraces in Jordan and Sri Lanka.

The paper is published in the *American Journal of Biological Anthropology*.

**More information:** Daniel P. Longman et al, Human energetic stress associated with upregulation of spatial cognition, *American Journal of Biological Anthropology* (2023). [DOI: 10.1002/ajpa.24820](https://doi.org/10.1002/ajpa.24820)

Provided by Loughborough University

Citation: Researchers discover evolutionary evidence in ultra-marathon runners (2023, August 2)  
retrieved 29 April 2024 from

<https://phys.org/news/2023-08-evolutionary-evidence-ultra-marathon-runners.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.