

Hunter-gatherers, Westerners use same amount of energy, contrary to theory

Results contradict previously held idea that rising obesity is due to lowered energy expenditure

Modern lifestyles are generally quite different from those of our hunter-gatherer ancestors, a fact that some claim as the cause of the current rise in global obesity, but new results published July 25 in the open access journal *PLoS ONE* find that there is no difference between the energy expenditure of modern hunter-gatherers and Westerners, casting doubt on this theory.

The research team behind the study, led by Herman Pontzer of Hunter College in New York City, along with David Raichlen of the University of Arizona and Brian M. Wood of Stanford measured daily energy expenditure (calories per day) among the Hadza, a population of traditional hunter-gatherers living in the open savannah of northern Tanzania. Despite spending their days trekking long distances to forage for wild plants and game, the Hadza burned no more calories each day than adults in the U.S. and Europe. The team ran several analyses accounting for the effects of body weight, body fat percentage, age, and gender. In all analyses, daily energy expenditure among the Hadza hunter-gatherers was indistinguishable from that of Westerners. The study was the first to measure energy expenditure in hunter-gatherers directly; previous studies had relied entirely on estimates.

These findings upend the long-held assumption that our hunter-gatherer ancestors expended more energy than modern populations, and challenge the view that obesity in Western populations results from decreased energy expenditure. Instead, the similarity in daily energy expenditure across a broad range of lifestyles suggests that habitual metabolic rates are relatively constant among human populations. This in turn supports the view that the current rise in obesity is due to increased food consumption, not decreased energy expenditure.

The authors emphasize that physical exercise is nonetheless important for maintaining good health. In fact, the Hadza spend a greater percentage of their daily energy budget on physical activity than Westerners do, which may contribute to the health and vitality evident among older Hadza. Still, the similarity in daily energy expenditure between Hadza hunter-gatherers and Westerners suggests that we have more to learn about human physiology and health, particularly in non-Western settings.

"These results highlight the complexity of energy expenditure. It's not simply a function of physical activity," says Pontzer. "Our metabolic rates may be more a reflection of our shared evolutionary past than our diverse modern lifestyles."

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