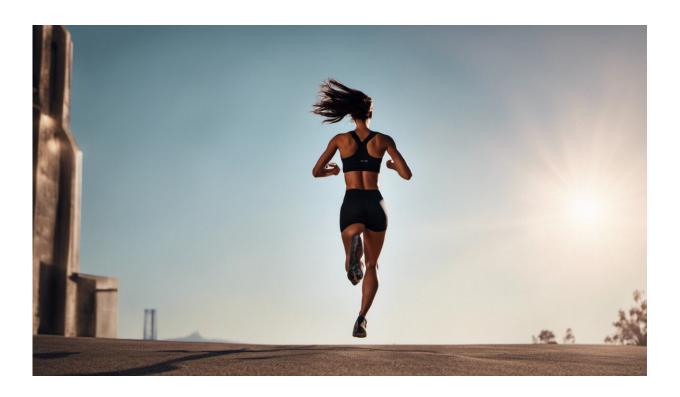# Taking a hot bath after exercise improves performance in the heat

December 11 2015, by Neil Walsh

Credit: AI-generated image

In the Bell Jar, Sylvia Plath wrote: "I am sure there are things that can't be cured by a good bath but I can't think of one." Our research shows that there may even be some things that can be prevented by a good bath – as long as the bath is at the right temperature.

In recent years we have seen images of athletes plunging into ice buckets after big races, but our findings show that taking a hot bath after exercise for six days reduces both resting and exercising body temperature and improves running performance in the heat.

Athletes and people with physically demanding jobs, such as soldiers and firefighters, often need to perform in the heat. But heat is the enemy of performance. The body sweats in order to cool down, but this puts extra strain on the cardiovascular system which, in turn, increases fatigue.

Also, when people exercise in the heat they are at risk of suffering from heat exhaustion and the much more serious condition, heat stroke, which can be fatal.

To combat this, athletes typically acclimatise by training for ten to 14 days in the heat. This usually involves relocating to a hot country for training or, for the lucky few, daily training in an environmental chamber, which simulates a hot environment. These options are neither cheap nor practical.

Our new research from the University of Bangor shows that simply taking a hot bath in 40°C water after exercise in temperate conditions on six successive days provides heat acclimation. This reduced body temperature at rest and during exercise and improved five kilometre time-trial performance during treadmill running in the heat.

Credit: AI-generated image

The therapeutic benefits of hot water bathing have long been recognised – anyone with aching bones and muscles who has bathed at a Roman spa will testify to this.

Researchers have found other potential health and fitness benefits of taking a hot bath after exercise beyond the pleasurable sensation of bathing aching muscles in hot water. For example, recent research [from the University of Tokyo](link) showed that heat stress after exercise enhanced fitness training adaptations at the cellular level in mice.

The authors showed that animals exposed to exercise followed by [heat stress](link) had increased levels of mitochondrial enzymes in skeletal muscles, which contributes to improved fitness. The authors suggested that heat exposure might be a useful treatment for people who can't do much

exercise, such as the elderly and injured athletes.

Our team also suggests that a hot bath can stimulate the immune system which may be helpful for athletes as heavy exercise [temporarily decreases immune function](link) and increases the risk of infections such as the common cold.

Our alternative heat acclimation strategy conflicts with current athlete practice, which includes taking an ice-bath after exercise, known as "cryotherapy". However, the proposed benefits of cryotherapy for recovery after exercise and fitness adaptations have recently been questioned. Instead, we believe that, for sports people who compete in the heat, the new mantra should be "train-cool, bathe hot".

Although participants in our study bathed for up to 40 minutes in 40°C water after exercise the benefits may be gained by bathing for as little as 20 minutes. We would recommend this as a safe approach when adopting a heat acclimation strategy.

This story is published courtesy of [The Conversation](link) *(under Creative Commons-Attribution/No derivatives).*

Source: The Conversation

Citation: Taking a hot bath after exercise improves performance in the heat (2015, December 11) retrieved 19 November 2023 from https://medicalxpress.com/news/2015-12-hot.html