Scientist warns marathon runners: Water won't help you keep your cool

22 April 2007

Runners in today's London Marathon may be tempted to down several litres of water to keep their cool and achieve their best time, but large fluid intake does not achieve either, according to a sports scientist from the University of Exeter.

With today's temperatures expected to reach 19 degrees, the average runner will potentially lose almost a litre of sweat every hour and reach a body temperature of over 39 degrees, two degrees above normal. The sporting community has long assumed that drinking large amounts of water helps to keep the body's temperature down, which improves performance. A recent study led by Dr Chris Byrne of the University of Exeter shows that the level of fluid intake has absolutely no effect on body temperature or performance.

Dr Chris Byrne, sport scientist from the University of Exeter said:
'We'll see many of today's Marathon runners clutching bottles of water. The conventional view among both scientists and the fitness media is that fully replacing sweat losses by fluid intake during exercise will reduce an athlete's body temperature and improve performance. Our research, which for the first time measured internal body temperature continuously during an actual race, revealed no evidence that fluid intake makes runners cooler or improves performance.'

Dr Byrne and his team monitored a group of male runners taking part in the Singapore Army Half-Marathon, a 21km race that took place in temperatures between 26 and 29 degrees Celsius and 75-90% relative humidity. The night before the race, the runners ingested telemetric temperature sensors, which contain temperature-sensitive quartz crystal oscillators that vibrate at a frequency relative to its surrounding temperature and communicate the temperature by radio wave to a recording device worn by the runner. For previous studies, body temperatures have been taken after races, but this was the first time that researchers have monitored body temperatures continuously throughout a race.

Over half the runners reached body temperatures exceeding 40 degrees and all lost an average of 1.5 litres of sweat per hour. Runners replaced between 6% and 73% of their sweat losses during the race. There was no relationship between the amount of fluid each runner consumed, his body temperature and overall performance in the race. The highest body temperature observed (41.7°C) was recorded from a runner replacing the greatest amount of his sweat losses (73%) and therefore being the least dehydrated of the study sample.

Dr Byrne concludes: 'I would encourage those people taking part in today's Marathon to be well hydrated before the race, but not to feel they need to drink water throughout the event. Listen to your body and drink if you feel thirsty, but drinking several litres of water will not help you run any faster.'

Source: University of Exeter

APA citation: Scientist warns marathon runners: Water won't help you keep your cool (2007, April 22) retrieved 27 November 2021 from https://medicalxpress.com/news/2007-04-scientist-marathon-runners-wont-cool.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.