

Trying to beat the heat

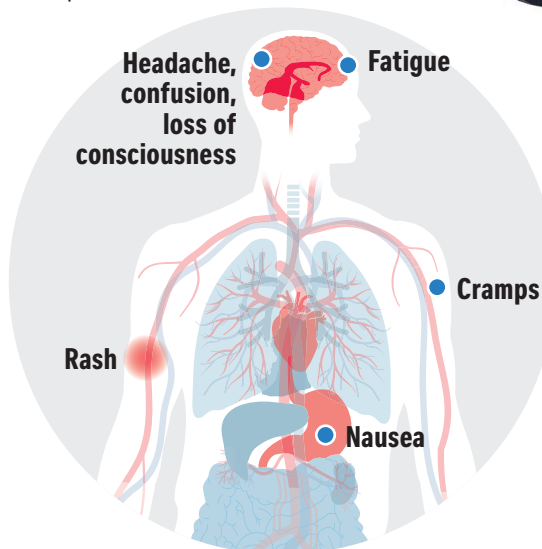
As global temperatures rise, increasingly hot weather can prove fatal, stressing the human body beyond its limits. For athletes, hotter, more humid weather represents a real danger but there are tips for reducing the risks.

Globally, the world has warmed on average 1.1 deg C since pre-industrial times, but that increase is uneven. In some places, especially at higher latitudes, the temperature rise has been greater and so have the heatwave extremes. In one recent study, researchers have attributed 37 per cent of deaths related to heat exposure around the world between 1991 and 2018 to global warming caused by humans.

HOW THE BODY DEALS WITH HEAT

The human body tries to keep a constant internal temperature of 38.6 deg C. While the body generates heat, it also absorbs heat from the environment. So it needs to try to deal with this extra heat using several clever methods.

- 1 Sweating and evaporation of moisture from the skin helps cool the body.
- 2 Blood vessels near the skin also dilate, carrying heat from the body's core to the surface.
- 3 But there's a limit to how much the body can sweat before becoming dehydrated. And physical activity and the amount of clothes worn can also reduce the body's ability to reduce heat.
- 4 Heat stress can lead to exhaustion and eventually death
- 5 For heat exhaustion, the signs include nausea, fatigue, cramps and rash
- 6 For heatstroke, victims suffer headaches, confusion and loss of consciousness and ultimately organ failure from heat damage if not treated quickly.



HEAT STRESS MANAGEMENT FOR ATHLETES

The International Olympic Committee has these tips for athletes competing in hot and humid conditions, such as those for the Tokyo Games.



Acclimatise

Practise in the heat before a major sporting event. This involves repeated exercising in high temperatures – such as in purpose-built chambers or improvised low-tech hot rooms. It can take between seven and 14 days for your body to acclimatise



Stay hydrated

Dehydration accelerates the rise in whole-body temperature, and this can consequently have a negative influence on performance.



Pre-cooling strategies and accessories

Before the start of your competition, avoid unnecessary heat exposure and, where possible, warm up in the shade. Consider ice vests, cold towels or fanning, and ensure access to cold fluids.



Other tips

Wear sunglasses, use sunscreen and lightly coloured clothing that still allows sweat evaporation.



A matter of timing

Consider shifting the timing of when to compete, either to the cooler parts of the day or a cooler season for a major sporting event.