Beating the Heat

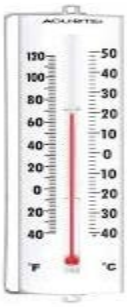
How your body adapts to keep you cool in summertime.

As heat waves swept across the country last summer, sidewalks sizzled, air conditioners worked overtime, and highways cracked and buckled in the baking air. In Death Valley, California, which hit a record-breaking 129 degrees Fahrenheit in June, people's sneakers even started to melt! When temperatures rise again this summer, you may start feeling like you're melting yourself. But there's good news: Your body can usually adjust.

"Your body adapts to the surroundings that you experience every day," says Lawrence Armstrong, a physiologist at the University of Connecticut. That means that whether you're playing sports, doing yard work, or just hanging around outside, spending time in the heat will trigger a series of changes ion your body. This process of *acclimatization* helps your body cope with the heat.

After about two weeks of hot weather, your brain, heart, and other body parts will be optimized for working in the heat. But until then, take it slow, says Armstrong. Pushing yourself too hard when it's hot out can lead to *heat stroke*, a dangerous condition that can damage the heart and brain-or even be fatal. The risk of heat stroke is greater before you've acclimatized. To protect yourself, wear loose-fitting clothing when you exercise outside, drink plenty of water, and take frequent cool down breaks until you've adjusted completely.

Unfortunately, not even acclimatization will keep you cool on the most scorching Death Valley day. But the human body is built to adapt to its surroundings, and it adjusts better to heat than to cold weather, high altitudes, and most other extremes, says Armstrong. "The body can adapt to a hot environment better than any other on Earth." – Mara Grunbaum



Feeling Flushed

Your brain, muscles, and organs generate heat as they work. Add in sizzling summer temperatures, and your body needs to cool off fast. Your brain redirects a portion of blood from your core out to the small vessels, or capillaries, in your skin. There, at the surface of your body, the heat can escape into the air. The extra blood flow makes your skin look flush.

Cool it Down

Physical activity raises the core temperature of your body. In hot weather, that puts you in danger of heat stroke, which begins when the body reaches 104 degrees Fahrenheit. To reduce that risk, your body lowers its normal temperature by a fraction of a degree in summertime. After a week or two of acclimatization, you won't get as hot even when you exercise.

Pumped Up

After a few hot days, your body increases the volume of blood it produces by at least 4%. With more blood in each pump, your heart doesn't have to work as hard to supply your body with oxygen. Your heart rate slows, and you feel less tired in the heat.

Breaking a Sweat

When it's hot, your nearly 3 million sweat glands pump out perspiration, which cools you down as it evaporates off your skin. As you adjust to the heat, your body doesn't wait as long to begin sweating. It also produces about 10 to 20 percent more sweat than before. But when it's humid, you feel hotter, because your sweat can't evaporate into the already-moist air.