

# Helping our bodies beat the heat

July 28 2024, by Mylène Tremblay

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Periods of extreme heat—even a single day when the thermometer hits 35°C—are associated with increased risk of injury, hospitalization and death. When the body gets too hot, the heart and kidneys don't function properly. This physiological response to heat can have harmful health effects.

"The risk depends on our body's ability to defend itself and keep its [internal temperature](#) and [blood pressure](#) under control," explained Daniel Gagnon, an associate professor at the School of Kinesiology and Exercise Science at Université de Montréal. "Being healthy and physically active provides some protection. But as we age, our body's ability to dissipate [heat](#) decreases, making us more susceptible to heat stroke."

Two age groups are especially vulnerable to the effects of [extreme heat](#): [young children](#) and people over 70, especially those with pre-existing conditions. In a recent study, Gagnon compared the effects of extreme heat on healthy young adults and seniors with and without heart disease.

The results were striking: In more than a third of the seniors with heart disease, the body became deregulated, with the heart struggling to get enough oxygen to support the effort necessitated by the heat.

## **Acclimatization is key**

Fortunately, the human body is capable of acclimatizing to heat. But it needs time and regular exposure to do so. Experiments in military and sports research have found that seven consecutive days of hot baths and 1.5 hours of moderate exercise improved heat tolerance in participants.

To find solutions better suited to the general population, Gagnon and his team experimented with Finnish saunas for seniors with [heart disease](#).

"The participants were able to gradually increase their exposure from two 10-minute sessions to two 15-minute sessions," Gagnon reported. "They also had increased perspiration, a classic sign of heat acclimatization."

Although still in its infancy, research on heat adaptation is advancing

rapidly in response to the climate emergency. Gagnon has launched a large-scale study to better understand the [health risks](#) associated with extreme heat and is planning to recruit 1,000 participants over the age of 18.

"The results, which will be available in a few years, will deepen our understanding of the underlying mechanisms and help us develop more targeted prevention strategies," he said.

## Tips for staying cool

In the meantime, here are Gagnon's tips for coping with our increasingly hot summers:

- Use an electric fan, a particularly effective method in humid climates like Quebec's. But remember: using a fan can be counter-productive in very low humidity or above 40° C temperatures.
- Sponge yourself regularly with cool water.
- Soak your feet in cold water.
- Stay socially connected (especially important for seniors and the socially isolated).
- Set your [air conditioner](#) to 25° C instead of 20° C to build up your tolerance to higher temperatures (and reduce energy consumption).

**More information:** Hadiatou Barry et al, The Effect of Heat Exposure on Myocardial Blood Flow and Cardiovascular Function, *Annals of Internal Medicine* (2024). [DOI: 10.7326/M24-3504](https://doi.org/10.7326/M24-3504)

Provided by University of Montreal

Citation: Helping our bodies beat the heat (2024, July 28) retrieved 28 July 2024 from <https://medicalxpress.com/news/2024-07-bodies.html>

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