Wondering how to stay cool in a heatwave? Here's what the experts say.

June 30 2021, by Molly Callahan

Brody Lomax, 5, of Boston cools off while playing in the splash pad at Carter Playground during the heatwave. Staying in the shade, staying hydrated, and staying alert for signs of more serious heat-related illness can help keep you safe during extreme temperatures, say Northeastern health scholars. Credit: Alyssa Stone/Northeastern University

Dueling heatwaves on the East and West coasts of the United States have left millions of people baking in record-setting temperatures—and exposed to the potential harms of heat-related illnesses.

To avoid heat exhaustion and heatstroke, Robert M. Baginski, an emergency medicine physician and associate clinical professor in the Bouvé College of Health Sciences at Northeastern recommends that people stay hydrated, stay in the shade, and stay alert for the warning signs of more serious illness.

And, if extreme temperatures such as those blasting the U.S. become a more frequent symptom of climate change, it will become necessary to reimagine the public health response from one of crisis mitigation to one of broad structural change, says Neil Maniar, professor of the practice and director of the Master of Public Health in Urban Health program at Northeastern.

What are some of the symptoms of heat-related illness people should watch out for?

BAGINSKI: I'm glad you called it "heat-related illness," because we usually think in terms of heat exhaustion or heatstroke, but, in reality, these things are a spectrum. From a medical perspective, heat exhaustion is when you're not feeling well from the heat, and heatstroke is a medical condition.

Some of the first signs of heat exhaustion usually occur when someone is outside, maybe working in the heat, and they include sweating profusely, being extremely thirsty, muscle aches and headaches, and sometimes even nausea and vomiting. Their skin will be hot, flushed, and wet from sweat.

What should someone who is experiencing these symptoms do?

BAGINSKI: You want to get inside or get into a cool area in the shade outside to rest, rehydrate, and apply cool compresses such as ice packs under your armpits or at the back of your neck. Patients recover fairly easily from heat exhaustion, usually within a half hour.

The thing to remember is that heat exhaustion is reversible, but it starts to get more serious as you head toward heatstroke.

What are the symptoms of heatstroke?

BAGINSKI: Largely, they're similar to the ones I've mentioned, but with a few key differences: Your skin will no longer be sweating, instead it will feel hot and dry as your body stops sweating to conserve water.

And the defining sign of heatstroke is that you'll start to have a change in mental status—becoming confused and disoriented, and in very serious cases, loss of consciousness.

There's a medical definition for heatstroke as well: Your core body temperature starts elevating as if you had a fever, up to 102 to 104 degrees Fahrenheit. This is a very serious sign for heatstroke, and this is call-911 territory, this means get to your nearest emergency department.

I see. What's happening inside your body during heatstroke?

BAGINSKI: Your body is heating up, but without a fever, which is an important difference. A fever is an internal signal from your brain that resets your body's set point to a higher temperature in order to fight off

an infection of some kind.

Heatstroke is temperature elevation without the brain signals. It's like putting a steak in the oven—the steak isn't changing; it's just getting really hot.

You start to become dehydrated because you're losing a lot of water through respiration and sweat. And once you're dehydrated, your body will stop putting out sweat to conserve water, but this worsens the problem because now you can't evaporate heat through sweat. It's a vicious cycle.

As folks go about their days during this heatwave, what should they do to stay cool and avoid some of these serious health conditions?

BAGINSKI: The No. 1 piece of advice is always to stay hydrated. And you'll hear all sorts of fitness or health 'experts' say that adults should be drinking eight 8-ounce glasses of water per day, but there's no actual science behind that.

The best advice is just: If you feel thirsty, drink some water. A good way to keep track of your water intake is to monitor your urine—most people urinate seven to nine times per day, and your urine should be a light yellow or clear color. If you're using the bathroom significantly less, or your urine starts to become a darker color, that's an indication that you should drink more water.

When you're going outside in hot weather, you should be consciously drinking more water than you would on a regular day. I usually recommend that patients just keep a water bottle nearby and take a sip every now and then.

Also, avoid caffeine and alcohol, both of which can dehydrate you.

If you can't avoid being out in the sun, you can wet a piece of clothing or a towel to drape around your neck, and that will help with that evaporative cooling your body naturally does.

Frozen peas or corn, or an icepack tucked under your arms, at the base of your neck, or near your groin can also help—these are areas of the body that contain a lot of blood vessels, and the ice packs help cool the blood as it recirculates.

And, of course, if you're outside, don't forget about sunscreen.

So we've talked about some of the measures that individuals can take to stay cool. What about public health measures to keep a community safe during a heatwave?

MANIAR: Extreme heat is definitely an important public health issue—from the perspective of overall public health, it's really important that people know what to do to keep each other safe.

For example, there are certain populations, including young children and elderly people, who are more at risk for poor outcomes during a heatwave. So it's important to make sure that schools and care homes have air conditioning, and that there are community cooling centers available.

The built environment can also have an effect: People who are living in densely populated areas or in buildings that don't have air conditioning are more at-risk. So are people who work outside, such as landscapers, roofers, and construction workers.

Are there other structural changes that might help mitigate the public health risks?

MANIAR: Absolutely. If we just think about this as a heatwave, we're thinking about the steps we can take to keep people safe during three or four days of heat. But as these extreme temperatures become more frequent, we need to think about how we're investing in infrastructure to meet the needs of individuals for the long term.

Framing this as a public health issue gives us the opportunity to think about the policies that are needed to address these issues: What do we need to change or develop to address not only the root causes of these extreme weather events but to really ensure that during these events, individuals and communities have what they need to stay safe.

If you have to walk five blocks to the grocery store or to your healthcare provider because there's no public transportation, that becomes much more dangerous during a heatwave.

Public health includes housing, transportation, education, economic investment, jobs—all the things that can make the experience of a heatwave much more tolerable or much worse.

Provided by Northeastern University

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