MERCOLA
Take Control of Your Health

CDC and NWS Launch Tools to Keep You Safe From Extreme Heat

Analysis by Dr. Joseph Mercola | June 15, 2024

STORY AT-A-GLANCE

- Extreme heat conditions is a permanent part of many people's lives, especially those living in tropical regions. Record-breaking temperatures are becoming "the new normal," and they come with adverse health outcomes
- The National Weather Service (NWS) teamed up with the CDC to launch two experimental tools that provide the public with helpful information about navigating extreme heat conditions
- The Heat and Health Initiative combines two tools — the HeatRisk Dashboard and HeatRisk Forecast to provide usable information on the potential impact the heat index will have on health
- Thanks to this tool, local decision-makers have information about heat conditions that may be risky to the public. They can also create action plans to help groups that may be affected by the extreme heat situations

Did you know that of all weather-related causes, extreme heat is the leading cause of death in the U.S.? According to the National Weather Service (NWS), extreme heat kills far more people than hurricanes, floods, tornadoes and extreme cold.[1]

Extreme heat can be dangerous, which is why you need to be ready, especially during scorching summer days. Thankfully, the U.S. government recently launched two helpful tools to help you stay guarded when the weather gets too hot.

Introducing the Heat and Health Initiative

The NWS teamed up with the U.S. Centers for Disease Control and Prevention (CDC) to launch two experimental tools that will provide information for public officials and citizens to better navigate extreme heat conditions.

Dubbed HeatRisk, this initiative "combines public health and historical temperature data to provide an index forecasting the potential impacts of heat on the human body," an article in Time[2] reports.

With an estimated 1,220 Americans dying from extreme heat-related conditions every year,[3] HeatRisk can provide appropriate guidance to groups that are particularly vulnerable to the dangers of high temperatures and poor air quality.[4]

The pilot program was launched in 2013 in California and expanded to the remaining western states in 2017. By the end of April 2024, it became available in the rest of the country.[5] According to Time:[6]

> *"HeatRisk has been used by California schools to decide on the appropriateness of outdoor activity for children, but the new tools can be used by everyone.*
>
> *There are, however, several particularly vulnerable groups to heat — such as the elderly, very young children, people experiencing homelessness, low-income households, those whose jobs are mainly outdoors, and those doing strenuous activities at the height of high temperatures — for which the HeatRisk Dashboard tailors specific clinical guidance."*

How to Use HeatRisk to Assess Heat Conditions in Your Area

The information provided in HeatRisk comes from two tools — HeatRisk Dashboard and HeatRisk Forecast. Hosted by the CDC, the Dashboard[7] can be used by the general public and pulls data from the Forecast map. Simply enter your zip code and the HeatRisk Dashboard gives you information about the heat risk and air quality for the following seven days.

You also see proper guidelines and actions to take in response to the heat and air quality measurements in your area. Air quality information is integrated into the Dashboard since heat can worsen air quality, especially for people with health conditions that make them more sensitive, such as asthma, heart conditions, chronic obstructive lung disease, and other health conditions that affect the respiratory system.

Meanwhile, the HeatRisk Forecast,[8] hosted by the NWS, gives you a seven-day forecast that uses a color and number index to determine potential heat risks. Thanks to this tool, local decision-makers can be aware of heat conditions that may be risky to the public health. They can also create action plans to help groups that may be affected by the extreme heat situations.

Heat Categories Focus on Unusual Heat

What sets HeatRisk Forecast apart from other heat-measuring tools is that it identifies unusual heat in specific individual areas — this is when the heat is in the top 5% for a certain date. According to the website, HeatRisk looks at three factors, namely:[9]

- How unusual the heat is for the time of the year
- The heat duration and temperatures, during daytime and nighttime
- If the heat conditions pose an elevated risk to people, according to data from the CDC

The table from National Weather Service uses five color-coded categories, ranging from 0 to 4,[10] which help to easily and visually identify areas where heat could pose a problem for individuals:

Category	Risk of Heat-Related Impacts
Green 0	Little to no risk from expected heat.
Yellow 1	Minor - This level of heat affects primarily those individuals extremely sensitive to heat, especially when outdoors without effective cooling and/or adequate hydration.
Orange 2	Moderate - This level of heat affects most individuals sensitive to heat, especially those without effective cooling and/or adequate hydration. Impacts possible in some health systems and in heat-sensitive industries.
Red 3	Major - This level of heat affects anyone without effective cooling and/or adequate hydration. Impacts likely in some health systems, heat-sensitive industries and infrastructure.
Magenta 4	Extreme - This level of rare and/or long-duration extreme heat with little to no overnight relief affects anyone without effective cooling and/or adequate hydration. Impacts likely in most health systems, heat-sensitive industries and infrastructure.

Source: National Weather Service, NWS HeatRisk

According to Time,[11] levels 0 to 2 could be tolerated by many, and simple adjustments can help mitigate the effects, such as reducing time outdoors or using fans to stay cool indoors. However, once the heat level reaches Level 3 (Red), most of the population could be at risk, so it's best to "reschedule activities to cooler times of the day, keep hydrated, and use air-conditioning when possible."

Magenta (Level 4) is a rare event that could last for days. Should heat conditions reach this level, it's safer to cancel outdoor activities, get access to air-conditioning and stay in a cool place overnight.

> *"This level of heat has historically been detected up to a few times a year in southern regions of the country, especially the Desert Southwest. Heat-sensitive groups and those without cooling mechanisms are at risk of dying, and power outages are likely,"* Time reports.[12]

Health Hazards of Extreme Heat

As noted in one 2021 study,[13] spending time outdoors during a heatwave can be risky.

> *"While physiological responses to heat are effective in healthy individuals experiencing moderate humidity and hot weather, even under these conditions, the effort to cool down strains the heart and kidneys.*
>
> *In response to extreme heat and high humidity, this strain can result in organ failure, also known as heat stroke, an outcome more likely to occur in individuals with pre-existing cardiovascular or kidney disease.*
>
> *Even healthy adults exposed to extreme heat can experience heat cramps, heat exhaustion or heat stroke. Without medical intervention, heat stroke can kill,"* the researchers report.[14]

People who are older than 65 years, those with cardiopulmonary and other chronic diseases, and infants and young children are at a higher risk of suffering from the effects of extreme heat.[15] Symptoms of heat stroke to watch out for include:[16]

A high body temperature (103 degrees Fahrenheit or higher)	Fast, strong pulse
Dizziness and nausea	Headache
Confusion	Fainting

The CDC advises taking these necessary actions if heat stroke symptoms arise:[17]

- Move the affected person to a cooler place
- Lower the person's temperature with a cool cloth or a cool bath
- Refrain from giving them anything to drink
- Contact 911 immediately if the patient is among the high-risk groups

Sweating Helps Cools You Off

Extreme heat can cause you to sweat heavily, but did you know that **sweating** is actually an important response to heat stress? Your body responds to heat in two ways.

One is through vasodilation, where your body redistributes blood flow to your skin, allowing it to improve heat transfer from muscles to skin and the environment.[18] The other is through sweating or perspiration. This is your body's way of cooling off, subsequently evaporating and removing body heat.

When your body heats up, your sweat glands release water at your skin's surface, which quickly evaporates and cools your skin and the blood underneath. Researchers with the University of Mississippi Medical Center note,[19] "This is the most effective means of thermoregulation in humans." But beyond cooling, sweating also has other beneficial functions, such as:[20]

- Clearing excessive micronutrients from your body
- Removing waste products produced by metabolic processes
- Eliminating toxins
- Providing support for cardiovascular, respiratory and joint diseases

Sweat is 99% water and 1% salt and fat.[21] So, to make sure your body's ability to sweat and cool isn't impaired, you need to stay properly hydrated, especially in sizzling hot weather.

Sweating heavily also makes you lose valuable fluids and electrolytes, so be sure to drink plenty of pure water and replace your electrolytes. One way to do this is by drinking

coconut water, which provides your body with natural electrolytes. Mixing a quarter-teaspoon of Himalayan salt with a gallon of pure filtered water can also help replace the electrolytes you lose when you sweat.

How Much Water Is Enough?

The conventional recommendation is to drink eight 8-ounce glasses of water a day, also known as the 8x8 rule. However, this may not be always accurate, as many factors can affect how much water you need — your age, health status, activity levels and climate are just some examples. Instead, I recommend relying on these two indicators to ensure you're getting enough water:

- **Thirst —** This is your body's signal to let you know that you need to replenish the water you lose, and it's a simple guide to help ensure your individual needs are met, day-to-day.
- **Urine —** Taking note of the color and frequency of your urine can let you know if you're dehydrated or not. If your urine is a deep, dark yellow, then you are likely dehydrated; a pale straw color or light yellow indicates that you're adequately hydrated.

  If your urine is scant or if you haven't urinated for a few hours, it can also indicate that you're not drinking enough — most people should urinate from seven to eight times a day.

Being Deficient in This Nutrient Can Put You at a Higher Risk of Heat Stroke

Another risk factor that can increase your chances of getting heat stroke is your sodium levels. Animal studies[22] have found that a low-sodium diet affects several body functions, including "thermal sensitivity to prolonged and sedentary exposure to severe heat stress." This could be particularly problematic, as conventional medicine advises people with heart problems to restrict their sodium intake.

People who are heat-sensitive — those with heart disease and other respiratory conditions — could be putting themselves at a higher risk of heat stroke when they consume a low-sodium diet. A paper[23] published by researchers at Rush University Medical Center found that in patients who are symptomatic of chronic heart failure, "sodium restriction may have a detrimental impact on outcome."

Sodium (Na) is a mineral and an important electrolyte your body uses for fluid balance, muscle function and nerve impulses.[24] When combined with chloride (Cl), which is an electrolyte and also used by your body to maintain fluid balance,[25] table salt (NaCl) is formed.

Your body loses salt through sweat. According to **James DiNicolantonio, PharmD.**, author of "The Salt Fix: Why the Experts Got It All Wrong — and How Eating More Might Save Your Life," exercising for an hour a day can result in a loss of one-half teaspoon of salt in sweat.

When combined with eating less than a half teaspoon of salt, you can quickly become sodium deficient. This is why following a low-sodium diet may not protect against heart disease and could instead lead to more complicated health conditions.

Instead of focusing on reducing your sodium intake, consider increasing your potassium intake. Your body needs potassium to relax your arterial walls, prevent your muscles from cramping and manage your blood pressure. It may also help reduce the incidence of stroke. According to one study,[26] the risk of cardiovascular events decreased when potassium levels increased.

Maintaining an ideal sodium-to-potassium ratio is crucial to normalizing blood pressure levels, protecting your heart health and reducing your risk of heat stroke. The easiest way to do this is to avoid eating processed foods and junk foods, which are notoriously low in potassium and high in sodium while focusing on eating healthy whole foods.

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