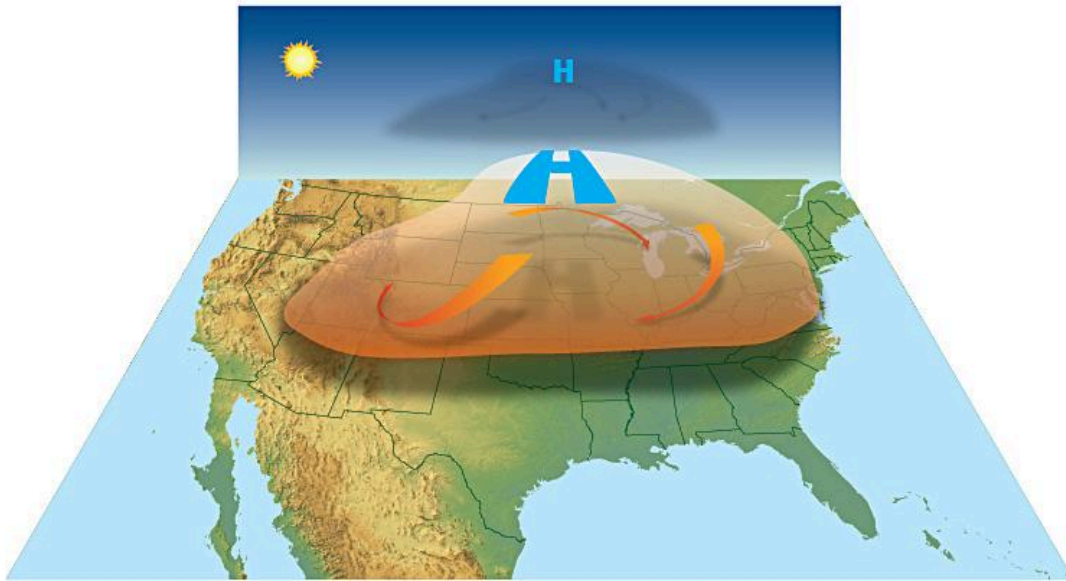


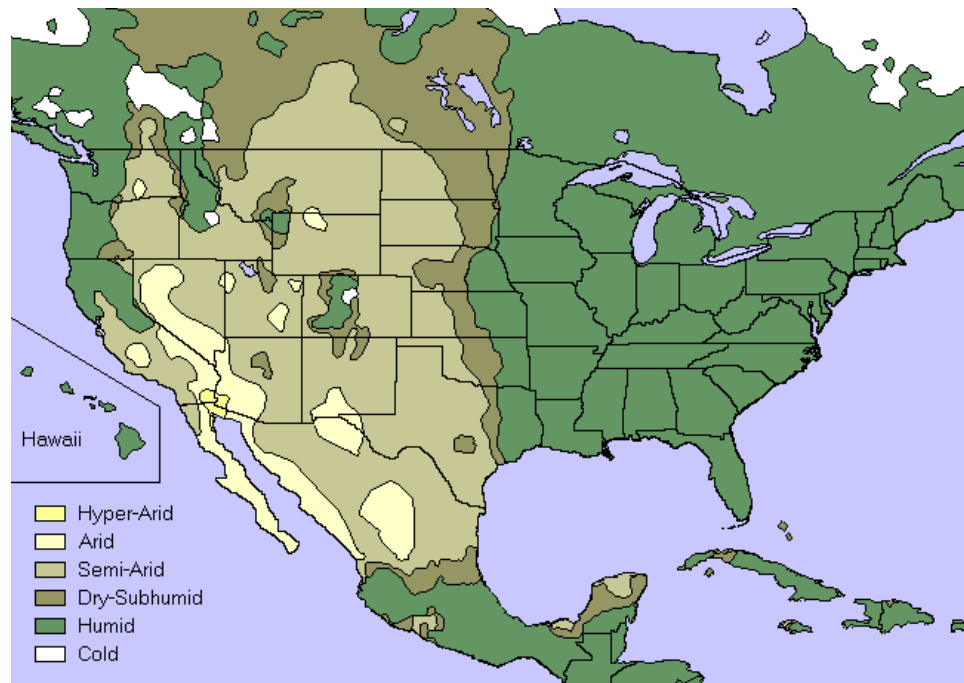
Heatwaves vs. Humidity: Understanding the Health Risks of Hot Weather



As temperatures rise during the summer months, many regions across the country experience a combination of intense heat and varying humidity levels. While both dry heat and humid heat can pose significant health risks, the ways they affect the human body are fundamentally different.

Understanding these differences is essential for public safety, especially for outdoor workers, vulnerable populations, and those managing emergency response or utility operations. Below let's dive into the main differences between the dry heat vs. humid heat.

Dry Heat: Deceptive and Dehydrating



Dry heat is most commonly experienced in arid climates such as the southwestern United States, including states like Arizona, Nevada, and New Mexico to name a few. In these environments, humidity levels are very low, which allows sweat to evaporate quickly from the skin. Evaporation is the body's natural cooling mechanism as it helps to regulate core temperatures.

Do not be deceived, however, by the main beneficial aspect of evaporation. Since sweat disappears so quickly, you may not realize how much fluid is being radiated away from the body. Rapid evaporation can lead to dehydration, and you won't even be fully aware as it's occurring.

Prolonged exposure to high temperatures in dry conditions without adequate hydration can result in heat exhaustion or, in more severe cases, heat stroke. While temperatures may reach

for example 110°F or higher in dry climates, the ability to cool efficiently—assuming proper hydration and shade—is typically greater than in humid conditions.

Humid Heat: Oppressive and Dangerous

In contrast, humid heat occurs in areas where the air is saturated with moisture, such as the southeastern and parts of the midwest. When humidity levels are high, the atmosphere limits the evaporation of sweat from the skin, which significantly reduces the body's ability to cool itself.

Imagine yourself in a large balloon filled with millions of water molecules (water vapor). Then visualize this same scenario with one that's cut in half in terms of water vapor molecules. Which one would it be easiest to perspire in? The one with much less water vapor of course! That's why it is much more difficult to sweat since there's "less room" for sweat to evaporate.

Humid conditions often lead to what is known as a "heat index"—a measurement that combines air temperature and relative humidity to represent the perceived temperature. For example, a temperature of 95°F with 70% humidity can feel more like 112°F. This increased heat stress elevates the risk of heat-related illnesses, including heat cramps, heat exhaustion, and heat strokes especially those pre-existing health issues.

The Risks of Both: Dry vs. Humid Heat

Both types of extreme heat present substantial health concerns in different ways. Dry heat is often less physically uncomfortable but carries the risk of unnoticed fluid loss, which can

quickly escalate to serious medical conditions. Humid heat, on the other hand, is immediately oppressive and limits the body's ability to manage internal temperature, making it particularly hazardous during prolonged exposure.

The heat index is a crucial tool in understanding these risks. It reveals that actual risk is not determined by temperature alone, but by the combined effect of heat and humidity. For example, 90°F with 60% humidity can feel like 100°F, while 100°F with 80% humidity can feel like 136°F—conditions that can become life-threatening in a short period of time.

Conclusion

For companies and agencies responsible for workforce safety, utilities, or emergency planning, monitoring both temperature and humidity trends is essential. Even for the general public that will be outside for prolonged periods of times, using tools like the National Weather Service Heat Index Chart or paying attention to warnings issued by them can engender actionable information to protect employees and the public.

While dry and humid heat each present unique challenges, both can have serious health consequences.. By understanding how these conditions affect the body and by making use of accurate forecasts and safety guidelines; individuals and organizations can reduce heat-related risks and improve resilience during extreme heat circumstances.

