

## Humidity and heat

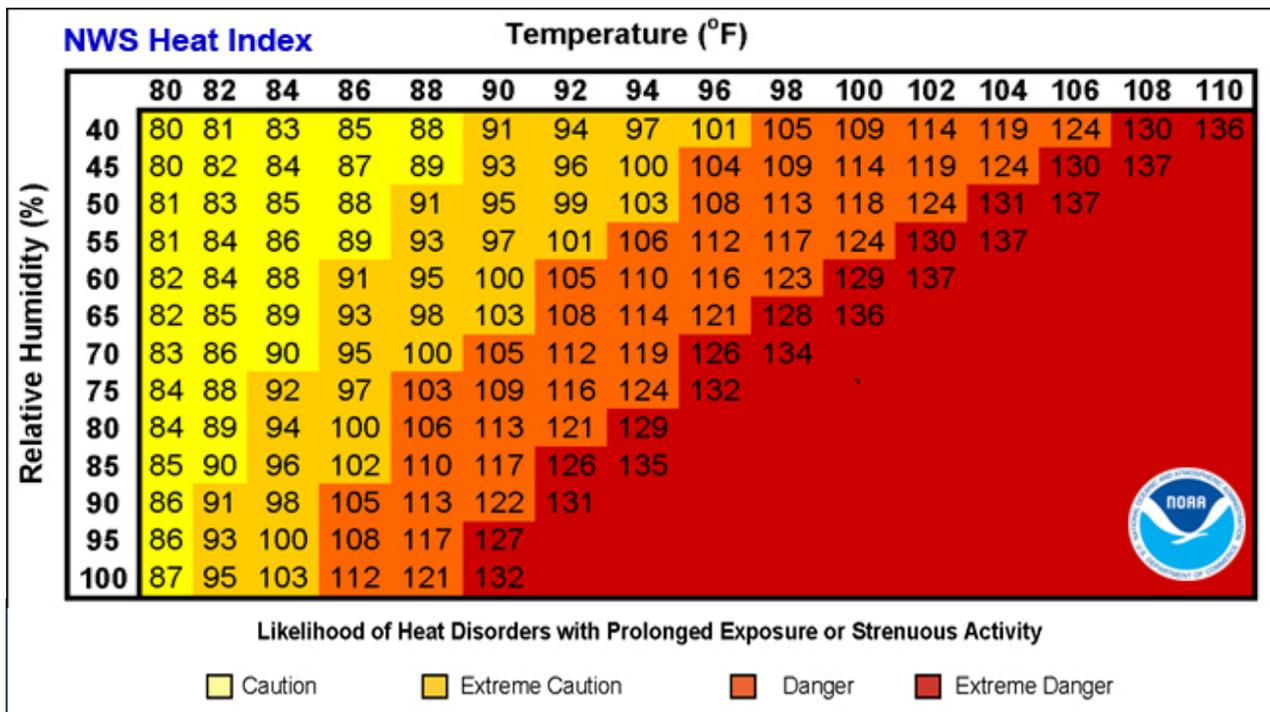
When describing a hot climate, people sometimes say, “But it was dry heat.” Dry heat is when the humidity of the day is less than 40%. Wet heat is when the humidity is higher than 40%. Why should that make a difference?

1. Why might you feel a difference between dry heat and wet heat?

There have been some incredibly high temperatures in parts of the United States and the world lately. Forecasters talk about the day's **Heat Index**. What is that?

A measure that takes into account the temperature of a hot day **and** its humidity is called the **Heat Index**.

2. From looking at the National Oceanic and Atmospheric Administration's chart below (NOAA), what do you think heat index is?



3. If the temperature is 80° F and it's very humid (let's say 75%), according to the chart above, what does the temperature actually feel like?
4. If it is 100° F and the humidity is pretty low (40%), what does the temperature feel like?
5. If it is pretty hot out (let's say 92° F) what is the range of heat index temperatures that you might feel as the humidity varies?
6. What might the temperature and humidity be if you feel like it is 136° F?
7. Do you think that in a very dry place (like Death Valley) 100° F would just feel like 100° F?

8. How do you think the process of human sweat relates to these numbers?
9. What are some other ways to stay cool without air conditioning when its hot?

Sweating is called *Evaporative Cooling*. There are devices, both home-made and available to buy, called evaporative coolers. They do a good job.

Here is a small hand-held fan attached to a spritzing bottle:

10. Why might adding water and a breeze cool you down instead of increasing the humidity and make you hotter?



11. Have you ever seen or used one of these evaporative cooling devices? Please explain.



12. Which kind of cooler; evaporative or air conditioning, do you think uses more energy? Do a little research and find out.