

Feels Like: Where Heat Index and Wind Chill Come From

By the rock. August 8, 2026. Grounded in National Weather Service definitions.

The short version

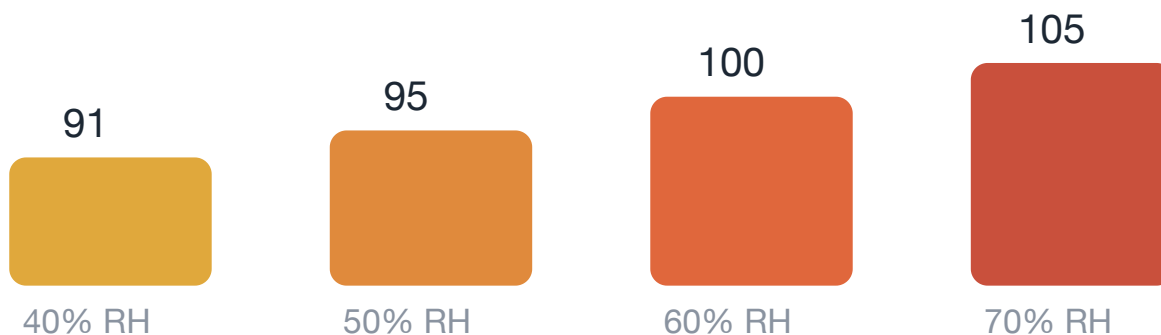
Feels like numbers model how fast your body gains or loses heat, not a second secret temperature. In heat, humidity slows the evaporation of sweat, so the heat index runs above the thermometer. In cold, wind strips away the thin warm layer your body builds, so wind chill runs below it. Both are physiology math wearing a weather costume.

One body, two enemies

Your body constantly sheds heat to stay near 98.6. How fast that shedding works depends on more than air temperature: moisture controls whether sweat can evaporate, and wind controls whether your personal bubble of warmed air gets to stay. The feels like figure folds those effects into a single number a human can act on.

Heat index: humidity taxes your sweat

Evaporating sweat is the body's premier cooling technology, and it needs dry air to accept the vapor. As humidity rises the acceptance slows, heat leaves you more slowly, and the effective temperature climbs. At 90 degrees, the National Weather Service heat index sits near 91 with 40 percent humidity, near 100 at 60 percent, and about 105 at 70 percent. Same thermometer, three different afternoons.



Ninety degrees, four humidities, four different bodies' worth of strain. Values from the NWS heat index model.

Wind chill: wind steals your blanket

In cold, your body warms a millimeters thin layer of air against the skin. Wind peels that blanket off and replaces it with fresh cold air, over and over, accelerating loss. The modern wind chill formula, calibrated on actual humans walking in a wind tunnel, turns 30 degrees with a 5 mph breeze into about 25, and the same 30 with a 30 mph wind into roughly 15. The thermometer never moved; your heat budget did.

What feels like is for

These numbers exist to time decisions: when outdoor work needs breaks and water, when recess moves inside, when exposed skin risks frostbite. They assume shade and a walking pace, so full sun or hard labor makes reality harsher than the number. The rock, which neither sweats nor shivers, still endorses the math on your behalf.

Check your understanding

1. Why does humidity raise the feels like temperature?

- ☐ A. Humid air is physically hotter
- ☐ B. Moist air slows sweat evaporation, so your body sheds heat more slowly
- ☐ C. Humidity blocks the wind

2. Wind chill describes what happening to your body?

- ☐ A. The air temperature dropping near skin
- ☐ B. Wind repeatedly stripping away the thin warm air layer your body builds
- ☐ C. Blood retreating from the skin

3. Feels like says 105. The thermometer says 90. Which is the real temperature?

- ☐ A. 105
- ☐ B. 90
- ☐ C. Both are real temperatures

4. Wind chill applies to:

- ☐ A. Anything outdoors, including pipes and cars
- ☐ B. People and animals, things with a heat budget
- ☐ C. Only exposed skin, never clothing

5. The heat index assumes shade. Full August sun can add roughly:

- ☐ A. Nothing measurable
- ☐ B. Up to about 15 degrees of effective strain
- ☐ C. Fifty degrees

Answer key

1. Why does humidity raise the feels like temperature?

B. Moist air slows sweat evaporation, so your body sheds heat more slowly — The heat index models a body whose main cooling system, evaporation, is being taxed by moist air.

2. Wind chill describes what happening to your body?

B. Wind repeatedly stripping away the thin warm air layer your body builds — The formula models faster heat loss as wind replaces your warmed boundary layer with fresh cold air.

3. Feels like says 105. The thermometer says 90. Which is the real temperature?

B. 90 — The air is 90. The 105 describes the strain on a human body cooling itself in that air; it is physiology, not a second thermometer.

4. Wind chill applies to:

B. People and animals, things with a heat budget — Objects just reach air temperature faster in wind; they cannot drop below it. Wind chill models living heat loss.

5. The heat index assumes shade. Full August sun can add roughly:

B. Up to about 15 degrees of effective strain — The NWS notes direct sunshine can add up to around 15 degrees to how the heat loads a body.

Questions people actually ask

Does wind chill affect my car or my pipes?

No. Objects without a heat budget simply cool to the air temperature faster in wind; they cannot drop below it. Wind chill is for living things.

Why does the heat index assume shade?

The model standardizes conditions. Full sunshine can add up to around 15 degrees of effective strain on top of the listed heat index.

At what heat index do warnings start?

Local offices vary, but heat advisories commonly begin when the index reaches the low 100s, with excessive heat warnings above that.

Can wind make heat feel better instead of worse?

Yes, up to a point. Moving air speeds evaporation when sweat can still evaporate. In extreme heat above body temperature, strong wind starts adding heat instead, like a convection oven.