National Center for Cold Water Safety

Keeping Your Cool In The Heat

How To Paddle Comfortably In Warm or Hot Weather

By Moulton Avery

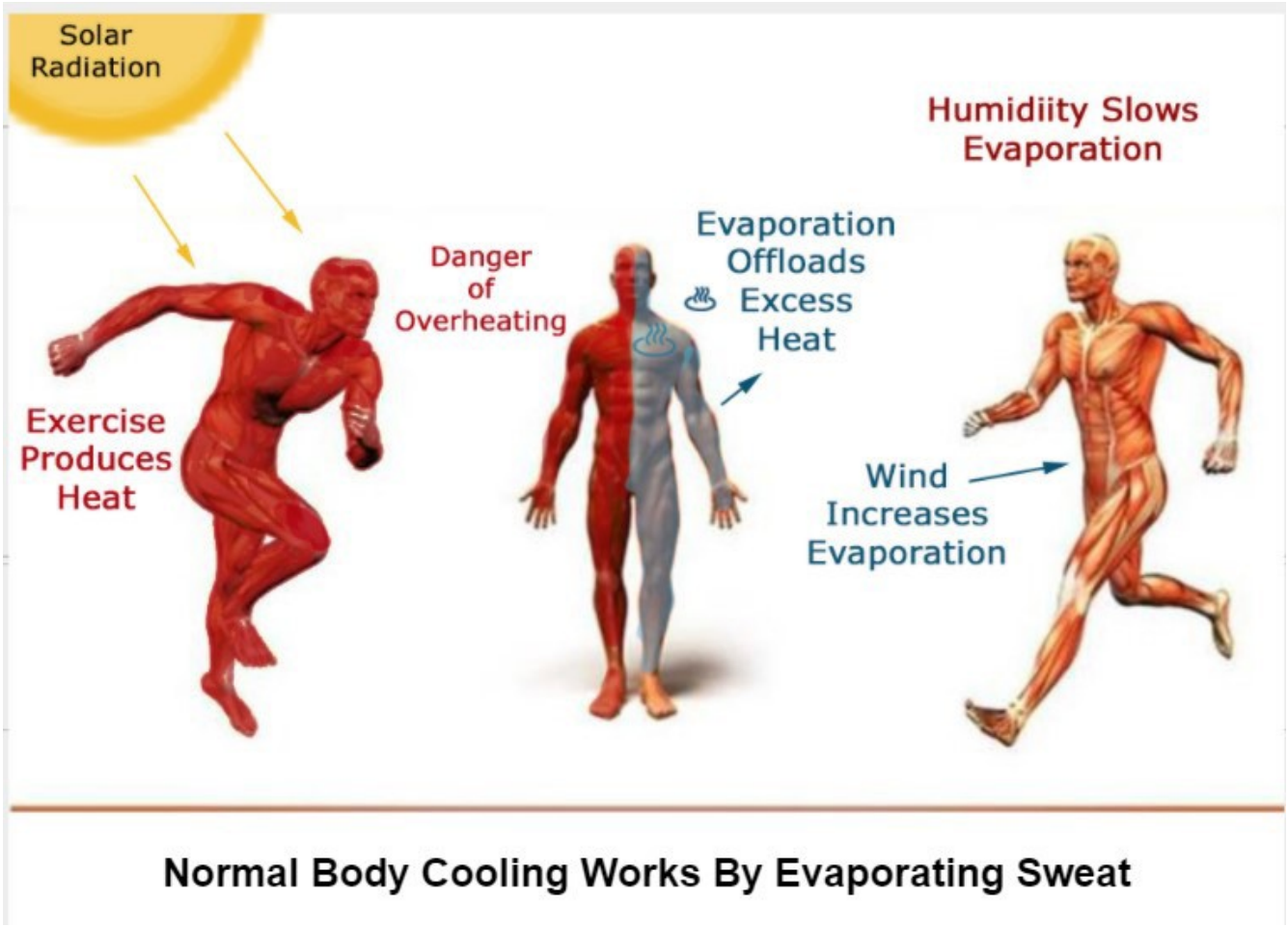
The two most important techniques in outdoor recreation involve knowing how to keep warm in cold weather and cool in hot weather. Both are fundamental to comfort and safety when you're exercising in the outdoors.

Keeping Cool

Regardless of whether the water temperature is a tepid 82F or a very chilly 56F, if you're paddling on a hot sunny day, the way to avoid overheating is the same. This is true if you're just wearing regular clothing or thermal protection like a wetsuit or drysuit. This article explains how to stay comfortable by using a simple but powerful technique to offload excess heat.

Cooling By Evaporation

Your body produces heat internally through metabolism and exercise and gains heat from external sources like sunlight. To prevent overheating in hot weather, your body has an automatic and very effective cooling system – the evaporation of sweat.



The only downside to this system is that sweating causes you to lose body fluid which must be replaced to avoid dehydration. Experienced wilderness travelers with access to water have an elegant workaround to this problem: Instead of sweating, they wet their clothes and hair, and wear a wet hat. This keeps them cool and avoids the need for sweating, dehydration, and fluid replacement via drinking.

Cotton is the ideal material to use for evaporative cooling in hot weather because it absorbs more water than synthetics and therefore provides evaporative cooling for a longer period of time. You'll feel a lot cooler as soon as you get your clothes wet, but as they dry out, you'll begin to feel hot again. That's your cue to re-wet them.

In addition to paddling and trail hiking, this technique works like a charm when biking or running, and it's the perfect solution for working outdoors on a hot day.

Cooling By Conduction

Water is very efficient at conducting heat away from your body, so if you're surrounded by water, why not take advantage of the situation and offload excess heat by conduction? Before you start paddling, get in the water and splash around for a little while until you feel cooler. Repeat this if you stop for a break. While paddling, splash water on yourself to keep your clothes wet. Kayakers with sprayskirts can also use the bow of a friend's kayak to take a dip like this without even exiting their kayak:

Rolling or side sculling is also a great way to get yourself wet and cool off:

What If I'm Wearing a Wetsuit or Drysuit?

A lot of people are under the misconception that you have to choose between dressing for the water temperature and overheating. They cite a concern about "hyperthermia" as a reason to skip thermal protection when the air temperature is high. They simply don't understand how to use evaporation and conduction to keep cool. Just like clothing, the key to comfort is to get the surface of your wetsuit or drysuit wet, wet your hair, and wear a wet hat.

Fabrics differ in how efficiently they absorb water. My old wetsuit absorbs enough water to provide evaporative cooling for 20 – 30 minutes. However, a lot of the newer neo sheds water and won't work for evaporative cooling unless you wear a wet shirt over the top of it. Same holds true for some drysuit fabrics. BTW: Moving air increases the efficiency of evaporation and high humidity retards it.

A Dynamic Process

I want to emphasize that this is a dynamic process. You have to work with it to

maximize both conduction and evaporation and that takes some practice. Because I take advantage of these techniques, I don't have a problem with overheating when wearing thermal protection in warm or hot weather.

For example, before I moved to the PNW, I paddled in the Chesapeake Bay area of Virginia, Maryland, and Delaware where it wasn't unusual to have 95F days with high humidity in summer. I occasionally demonstrated the power of evaporative cooling for my students by wearing my two-piece wetsuit in August – a 7mm farmer john under a 7mm long-sleeved shorty. That's 14mm of neo over my core, and I topped it off with a full-thickness neo balaclava hood. As long as I kept the neo wet, I was fine. If the neo was dry, I would have had a fatal heat stroke in under 20 minutes. That's the power of evaporation!

Bonus Material

When I posted this article on several Facebook paddling groups, I received some pushback from people who questioned why I recommended cotton clothing for paddling. They felt it was dangerous to wear cotton and they repeated the "cotton is rotten" mantra as if it applied to hot weather. It doesn't.

Bottom line: In wilderness travel, all the caveats about cotton apply to those occasions when the issue is keeping warm.

1) This article is about keeping cool, not about keeping warm. It's about *avoiding overheating* by using evaporative cooling. It applies to hot days when you're paddling on warm water and also to hot days when you're paddling on cold water wearing thermal protection like a wetsuit or drysuit.

   When you wet your clothes on a hot day, they will generally dry out in under 20 minutes. You are in complete control of the re-wetting process. When you have plenty of access to water, this is the most effective way to

use clothing to regulate your personal comfort. This technique allows you to use your clothes as your thermostat, and you control the set-point by deciding when to add water and how much water to add. With a little practice, you can dial in comfort and paddle on an hot day in full sunlight – while feeling like it's 75F outside. As an additional bonus, you'll avoid the need to guzzle fluids to replace those that you lose by sweating.

2) The ability to stay comfortable in the outdoors regardless of the weather takes knowledge, skill, and practice, but the techniques involved in keeping warm and keeping cool are fundamental to both safety and comfort.

3) I've personally used these techniques for over 50 years - as have countless other experienced wilderness travelers. If you're new to the game or simply missed that memo, please make sure you understand this article and have tried out the techniques before you jump in and start criticizing anything about it.

4) If your goal is keeping warm and avoid cold stress, then cotton should be avoided. Cotton fibers soak up water like a sponge, offer zero insulation when wet, and take much longer to dry than synthetics. For example, getting caught without raingear in a 50F rainstorm on a mountain trail, while wearing cotton, is an invitation to hypothermia.

5) However, if your goal is to avoid heat stress, then cotton is a superior fabric because it holds more water and doesn't have to be re-wetted as often as synthetics.

6) There are no exceptions to the rule “Always Dress For The Water Temperature”. Just because the weather is hot, you don't skip wearing a wetsuit or drysuit when you paddle on cold water. Dressing in layers is not going to protect you if you wind up in cold water – whether those layers are cotton or synthetics.

7) You don't wear cotton under your drysuit, but you can wear cotton over your wetsuit or drysuit if you need additional evaporative cooling.

Website: www.coldwatersafety.org