



## Summer Sun Safety

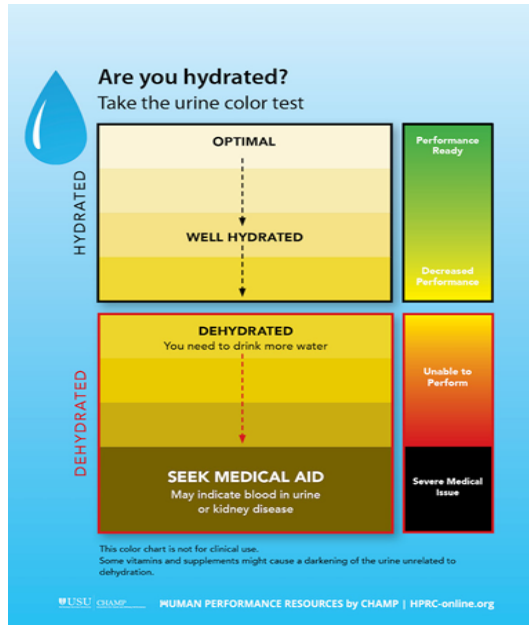
Don't let the hot weather keep you from crushing your fitness goals. Follow these tips to prevent heat illness next time you head outdoors:

**Preparation is key:** If you're prepping for a long run, or know you'll be exerting yourself for several hours (or days), be sure to hydrate and fuel properly before, during, and after activity. Don't wait until the day of to hydrate and fuel<sup>1</sup>.

**Are you a "salty sweater"?:** Individual sweat rates can vary from 0.3 and 3.5 liters (about 0.3–3.7 quarts) per hour<sup>3</sup>. How to combat this? Keep up with electrolytes through regular meals and avoid over-drinking plain water<sup>2</sup>. If you notice white streaks or salt stains on your skin or clothes, you likely lose sodium in larger amounts in your sweat, so focus on replacing that sodium for complete hydration.

**Lighten Up:** The evaporation of sweat, not the sweat itself, is what helps us stay cool<sup>4</sup>. What we wear can make all the difference. Before heading out the door, choose clothing that is<sup>4</sup>:

- 3 Ls - Light-colored, lightweight, loose-fitting (allows air flow over skin and helps sweat evaporate)
- Quick-drying, sweat-wicking fabrics (polyester, nylon, nylon-blend)
- Merino wool (it's thin, keeps you cool & dry and naturally odor-free)
- Socks with quick-drying fabric (polyester-blend)
- Hat with wide brim to protect face, neck, and ears



### WHAT IS ARM IMMERSION COOLING?

An Arm Immersion Cooling System (AICS) can be any reservoir of cold water used to immerse the hands and forearms during rest periods or at the conclusion of strenuous physical work in warm environments.

AICS serves as a preventive measure and can reduce core temperature by  $-0.10^{\circ}\text{F}$  per minute, so about 5 minutes of immersion yields  $0.5^{\circ}\text{F}$  reduction of core temperature.

Water Temperature (Degrees)	Cooling Time* (Minutes)
> 80°F	Replace Water
71–80°F	12–15
55–70°F	8–12
45–54°F	5–8
35–44°F	3–5

\*Times are calculated to achieve  $-0.5^{\circ}\text{F}$  reduction in body temperature. Failure to maintain proper water temperature or immerse the arms for enough time will diminish the effectiveness of the device.

#### AICS COMPONENTS

While cooling systems are available commercially, they might not be available in every training scenario. Try other solutions instead.

- Large cooler
- Large water trough
- Locally fabricated solutions

#### AICS SETUP

1. Choose any insulated container that can hold at least 20 gallons of ice water with enough space for immersion of forearms or arms.
2. Fill the container with 20 gallons of ice water.
3. Insert thermometer into ice water to monitor its temperature.

#### HOW TO USE AICS

1. Submerge hands and forearms (up to biceps) in ice water.
2. Keep hands and forearms submerged for the approximate amount of time and temperature range to accelerate body cooling.
3. Raise arms above head to allow water to drip down to core.

1. University of Colorado-Denver. (n.d.). CU Sports Medicine Workout Tips for Exercise in the Heat. University of Colorado Hospital. Retrieved April 6, 2023, from [https://www.ucdenver.edu/docs/librariesprovider65/clinical-services/sports-medicine/workout-tips-for-exercise-in-the-heat.pdf?sfvrsn=9a345bb9\\_2](https://www.ucdenver.edu/docs/librariesprovider65/clinical-services/sports-medicine/workout-tips-for-exercise-in-the-heat.pdf?sfvrsn=9a345bb9_2)

2. CHAMP. (2021, June 4). Performance-nutrition strategies to prevent heat illness and rhabdomyolysis. Human Performance Resources. Retrieved April 6, 2023, from <https://www.hprc-online.org/physical-fitness/environmental-extremes/performance-nutrition-strategies-prevent-heat-illness-and>

3. CHAMP. (2019, October 30). Guide to nutrient timing: In-depth. Human Performance Resources. Retrieved April 6, 2023, from <https://www.hprc-online.org/nutritional-fitness/performance-nutrition/guide-nutrient-timing-depth>

4. Texas A&M AgriLife Extension. (2023, January 17). What to wear for hot and cold weather workouts. Howdy Health. Retrieved April 7, 2023, from <https://howdyhealth.tamu.edu/what-to-wear-for-hot-and-cold-weather-workouts/>



HeRO Spotlight:

A Personal Message From Your Health Promotion Myth Busting Team



Dear MythBusters,

*I'm a big fan of the Philadelphia Eagles (Fly, Eagles, Fly!), and randomly remembered when they used pickle juice to stay hydrated during the game against the Cowboys. It seemed to work for them since they beat the heat and won the game, but is there any truth to it being a great option for staying hydrated?*

Thanks, Phil Fan

Dear Phil,

*Muscle cramps are a symptom of heat illness and dehydration and can put a real damper on a major football game if the team isn't staying on top of their hydration needs. The Eagles didn't just win, they dominated in that game, and the pickle juice may have played a role! After that game, researchers set out to answer exactly your question, and conducted a study involving 82 individuals who experienced significant muscle cramps more than 4 times in the previous month. Participants were given either tap water or pickle juice (dill or kosher pickles). The study found that those who consumed pickle juice were able to stop the muscle cramp at the onset and reduce the severity of the muscle cramp. Pickle juice contains electrolytes (sodium, potassium, magnesium) and can be a great option for staying hydrated, but beware of the sodium content and try to stick with vinegar-based pickles that don't contain yellow dye and preservatives<sup>2</sup>.*

Sincerely,  
Health Myth Busters

1. Tapper, E. B., Salim, N., Baki, J., Zhao, Z., Sundaram, V., Patwardhan, V., & Nikirk, S. J. (2022). Pickle juice intervention for cirrhotic cramps reduction: The PICCLES randomized controlled trial. *The American Journal of Gastroenterology*, 117(6), 895-901.  
 2. Cleveland Clinic. (2020, December 31). 6 Health Benefits of Drinking Pickle Juice. Cleveland Clinic. Retrieved April 7, 2023, from <https://health.clevelandclinic.org/6-health-benefits-of-drinking-pickle-juice/>

Got questions on other health issues related to sleep health, physical activity, tobacco, or nutrition? Share them with us and we will help you. "Bust The Myths!" Send your questions to [usaf.jbsa.afmsa.mbx.hpo@mail.mil](mailto:usaf.jbsa.afmsa.mbx.hpo@mail.mil). Make sure to include in the subject line "Health Myth Buster." For more online health tips visit the Air Force Health Promotion webpage <https://www.airforcemedicine.af.mil/Resources/Health-Promotion/>



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Community Events

HERE'S WHAT'S GOING ON WHERE YOU LIVE

Your Local Health Promotion Office



Contact:

Phone:

Email:

Monday	Tuesday	Wednesday	Thursday	Friday