

Tips for Safe Running in the Summer Heat

By Dave Ochsendorf, MPT and Kristy Ochsendorf, DPT

It is a well-known fact that the heat and humidity in Florida can be brutal, and exercising in the heat can be very dangerous, especially to those who aren't properly acclimated. Runners are used to pushing themselves to the limits and this can be hazardous in hot, humid conditions when combined with other risk factors. A lack of acclimatization, certain medications and dietary supplements, low fitness level, viral illness, diarrhea, dehydration, sleep deprivation, and obesity have all been linked to exertional heat stroke (EHS). Here are some general recommendations to reduce your risk of heat-related illness.

1) Hydration Guidelines including water, sports drinks (and beer)

How much should I drink? This varies based on the individual and should be determined by fluid (sweat) loss.

Pre-hydration is very important. Drink water often throughout the day and then consume an additional 12-16 ounces immediately before your run to "top off the tank." Drink until your urine color is pale yellow to clear, as thirst is not a good indicator of your level of hydration. If you are well-hydrated prior to exercise, you should be able to complete 30 minutes of running without additional water or sports drink. After 30 minutes you should be consuming 5-12 oz of water (depending on your sweat rate) every 15 minutes. After 60 minutes, electrolyte and carbohydrate stores may become depleted. Supplementing with sports drink has been shown to improve performance and reduce the risk of hyponatremia (dangerously low levels of sodium) when running longer than 60 minutes. Sports drinks which are 5-7% carbohydrate concentration are absorbed best (be wary of anything too sweet).

Re-Hydration should be based on fluid lost. Weighing yourself before and after 30 or 60 minutes of running can yield your hourly sweat rate (subtract the number of oz consumed during your run from the total weight loss and know that 16 oz equals 1 lb) and the total amount of fluid lost. If you lose 3 pounds during a run, you should be replenishing 48 oz of fluid. Greater than 2% dehydration (calculated by comparing your weight pre and post-exercise) can have an adverse effect on performance and place you at increased risk for hyperthermia/heat illness. Once you know your hourly sweat rate you can determine the number of ounces you should consume every 15 minutes during running.

Is **beer** a good recovery drink? Yes and no. Many runners view beer as a great way to replenish carbohydrates. This is true, but remember that alcohol is also a diuretic, so remember to supplement with plenty of water. Consider that caffeine is a diuretic as well. There are studies that show caffeine can boost performance, but you must weigh these benefits against potential increases in fluid loss.

2) Modify your workouts according to the heat – in high heat or high humidity expect your normal times to be at least 15% less and don't be afraid to slow your pace. Adjust your intensity and be wary of increased levels of fatigue, or dizziness, chills, cramping, disorientation or cessation of sweating. If you experience these symptoms, stop exercising, find the shade, drink water and cool your body.

The coolest time of day to run is sunrise. Air temperatures remain high at the end of the day due to heat retention from the ground.

Consider other options such as walk-run workouts or one weekly running session in the pool with a flotation device.

3) **Clothing** considerations – lightweight and light colored technical materials are best to reflect sunlight and wick away moisture. Visors are better than hats to shield sun but not prevent heat loss from the head.

4) How to recognize and treat heat illness – if you follow the above guidelines you can significantly reduce your risk of heat illness, but you must monitor symptoms closely and use good judgment. Don't push yourself in the heat if you don't feel right.

Heat **Cramps** – most commonly recognized as muscle cramping in the legs. Treatment includes rehydration with water and electrolytes, massage and prolonged stretch. *Physical therapy patients are often surprised to learn that leg cramping at night is most often caused by dehydration and relieved by simply drinking more water!*

Heat Exhaustion – common signs and symptoms include low blood pressure, elevated heart and respiratory rate, sweaty, pale and ashen, dizziness, headache, weakness, irritability, nausea, vomiting, diarrhea. Treatment should include moving the individual to a shaded or air-conditioned area, remove excess clothing, elevate legs, provide oral fluids, and monitor vital signs closely.

Heat Stroke – signs and symptoms depend on the degree and duration of hyperthermia and range from disorientation, confusion, dizziness, irrational or unusual behavior, inappropriate comments, irritability, headache, to inability to walk, loss of balance and muscle function resulting in collapse, profound fatigue, hyperventilation, vomiting, diarrhea, delirium, seizures, or coma. Recommended treatment is rapid body cooling through cold water or ice water immersion, ice packs or ice towels to the head, neck, axilla (underarm) and groin, and activating emergency medical services.

5) Acclimatization - Ten to 14 days of light, progressive training in the heat is recommended by the American College of Sports Medicine to improve acclimatization and reduce the risk of exertional heat illness.

For additional information and recommendations please visit the following links:

References:

<http://www.acsm.org/access-public-information/position-stands>

<http://www.runnersworld.com/hydration>

<http://www.runnersworld.com/heat>