BEAT THE HEAT WITH SUGGESTIONS FROM A PROFESSIONAL RUNNING COACH

Respect Your Body; Respect The Heat

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OVERVIEW

Of all the adversities that long-distance runners face, heat and humidity is one of the most serious offenders. When I was training and competing at distances of 5K to the marathon, I ran in six degrees and 96 degrees. I much preferred running in the frigid winter rather than the dog days of summer. But everyone's body handles the elements differently, so there are runners who can tolerate the heat better than others.

That being said, whether you're a runner, a fitness walker, or if you work outdoors, exercising and doing strenuous activities on a day that is both hot and humid can be a red flag. The reason is that due to the high moisture content of the air, your sweat rolls off your skin and onto the ground, rather than cooling you off through evaporation. You still sweat, but the sweat does not have the desired cooling effect, so heat builds up in your body and your core temperature increases.

Medical conditions and some prescription and over-the-counter drugs increase the risk of heat-related illness due to increased metabolism, a decrease in sweat rate, or a decrease in blood flow to the skin. Conditions such as diabetes, high blood pressure, and age are particularly affected by the heat. The two conditions that can negatively affect your performance during hot and humid weather are overheating and dehydration.

Overheating is the result of inadequate cooling, when the body cannot keep up with the demands of evaporation of water from your skin. When the body heats up internally, it starts to sweat and sends more blood to the skin where it is cooled by encountering the relatively cooler skin. However, as you run, your body's demand to get oxygen to the working muscles means less blood will flow to the skin and this is when overheating occurs. And thus begins the tug-of-war within your body, especially if you want to keep up with a certain pace. Either the blood (and oxygen) will go to your muscles to keep up with the pace demands which will then bring on overheating because less blood is going to the skin for cooling - OR - the blood will be diverted to the skin for cooling, and then less blood will be available for your working muscles, and you'll be forced slow down.

Dehydration is the process of losing fluid from the body, in this case through sweat. As you sweat you lose water and electrolytes. That's why drinking a sports drink containing electrolytes, in addition to plain water, is so important. Because running in the heat exacerbates both overheating and dehydration, it is important to take precautions in high heat and humidity.

As always, check with your medical professional for further information.

SIGNS OF A HEAT-RELATED CONDITION

Heat Cramps

- **Causes:** Loss of electrolytes and accumulation of lactic acid in the muscles.
- **Conditions:** Muscle cramps and/or spasms, heavy sweating, normal body temperature.
- **Treatment:** Drink water and sports drink, slow down, and massage affected area.

Heat Exhaustion

- **Causes:** Intense exercise in a hot, humid condition and loss of electrolytes.
- **Conditions:** Profuse sweating, possible drop in blood pressure (less than 90 systolic, the top number), normal or slightly elevated body temperature, lightheadedness, nausea, vomiting, decreased coordination, possible fainting.
- **Treatment:** Rest in a cool place, drink water and sports drink, if BP drops below 90 systolic, call EMS, avoid activity for at least 24 hours, refrain from running or exercising in the heat for at least one week.

Heat Stroke

This is a medical emergency!

- **Causes:** Intense exercise in a hot, humid condition, older age, dehydration, obesity, wearing heavy clothing, running in the heat when you have an infection or fever, certain drugs such as amphetamines, diuretics, beta blockers, cardiovascular disease, poor acclimatization, high blood pressure.
- **Conditions:** High body temperature (106 or higher), lack of sweating characterized by dry, red skin, altered consciousness.
- **Treatment:** Call EMS! Rest in a cool place, remove clothing to expose skin to air, apply ice packs or cool water to groin, underarms, neck (stop if shivering).

HEAT INDEX CHART

Check the Heat Index Chart for apparent temperature. This is the number that calculates the air temperature with the relative humidity to determine what the temperature “feels like” and if there is a risk of a heat-related illness. Heed the warning of numbers in red.

	AIR TEMPERATURE (F°)										
	70°	75°	80°	85°	90°	95°	100°	105°	110°	115°	120°
Relative Humidity	**APPARENT TEMPERATURE (what it feels like)**										
0%	64°	69°	73°	78°	83°	87°	91°	95°	99°	103°	107°
10%	65°	70°	75°	80°	85°	90°	95°	100°	105°	111°	116°
20%	66°	72°	77°	82°	87°	93°	99°	105°	112°	120°	130°
30%	67°	73°	78°	84°	90°	96°	104°	113°	123°	135°	148°
40%	68°	74°	79°	86°	93°	101°	110°	123°	137°	151°	
50%	69°	75°	81°	88°	96°	107°	120°	135°	150°		
60%	70°	76°	82°	90°	100°	114°	132°	149°			
70%	70°	77°	85°	93°	106°	124°	144°				
80%	71°	78°	86°	97°	113°	136°					
90%	71°	79°	88°	102°	122°						
100%	72°	80°	91°	108°							

Apparent Temperature and **Heat Stress Risk with Physical Activity and/or Prolonged Exposure**

90° - 104°	Heat cramps or heat exhaustion is *possible*
105° - 130°	Heat cramps or heat exhaustion is *likely*
105° - 130°	Heatstroke is *possible*
130°+	Heatstroke is *highly likely*