



When The Heat Is On - how to stay cool while exercising in hot weather - *Vibrant Life*, July-August, 1994 by Robert D. Lee

Your body is a fine-tuned water-cooler machine. Its temperature is controlled by a delicate process dependent upon adequate water intake and the function of the circulatory system and sweat glands.

During exercise on a warm day body heat production rises, causing perspiration. As perspiration evaporates, the skin is cooled. At the same time, the circulatory system moves excess heat from the body's warmer core to its

cooler outer surface by increasing the amount of blood flow through the skin.

Water is the most critical link in this process--necessary to provide enough blood volume to move heat from the warmer core and to produce perspiration that cools the body as it evaporates. In most instances this process adequately controls body temperature. However, temperature control can be short-circuited by several factors: a water intake that fails to keep pace with losses through perspiration; high humidity, preventing evaporation of perspiration; and high air temperature or bright sunshine, causing your body to soak up unwanted heat.

Heat Illnesses. When your body produces more heat than it loses, especially if water intake is inadequate, body temperature can rise, causing heat illnesses. The two major types are heat exhaustion and heatstroke.

Signs of heat exhaustion include moderate elevations in body temperature 101F to 102F, increased heart rate, fatigue, dizziness, nausea, headache, and shortness of breath. A person experiencing these symptoms **should stop exercising**, move to where it's cooler, and drink plenty of water.

Continuing to exercise can result in further elevations of body temperature and lead to heatstroke. At a body temperature of about 106[degrees]F the brain loses its ability to control body temperature and the body becomes defenseless against heat. Perspiration stops, the skin becomes hot and dry, and body temperature quickly rises unless emergency treatment is given.

If you see someone with symptoms of heatstroke, call an ambulance immediately. While help is on the way, quickly cool the person's body with a garden hose, wet towels, fans, or an ice water bath. Heatstroke is a medical emergency, and without prompt treatment brain damage will likely occur.

Drink ample water before, during, and after hot-weather exercise. "The thirst mechanism isn't always adequate indicator of how much water a person should drink. People exercising in hot, humid weather should **forcedrink**--in other words, drink more water than necessary to just satisfy thirst," says Dr. Robert L. Hammer, associate professor of health science at Central Michigan University.

Some sports medicine experts recommend drinking 16 ounces of water before exercising, 8 ounces every 15 to 20 minutes during exercise and 16 ounces at the end of the workout.

What about sports drinks containing carbohydrates and electrolytes? Dr. Richard Parr, professor of health science at Central Michigan University, recommends plain water as the best beverage for most people. "Plain cool water is absorbed into the body faster than are carbohydrate beverages," says Parr. "The more sugar a beverage has in it, the slower the fluid from that beverage is absorbed and the less effective it is at replacing body fluids lost through sweat. For most people it's more important to replace water than to provide extra calories as carbohydrate. Another advantage to water is its cost compared to sports drinks."

During extended exercise (for example, a marathon), consuming a carbohydrate drink can help maintain blood sugar levels and prolong exercise. For

most people, though, carbohydrate beverages are not necessary as long as adequate carbohydrate is consumed with meals. Electrolyte containing beverages are not needed except in extreme endurance events such as ultra marathons. As with carbohydrates, food supplies all the electrolytes most of us need.

Respect the heat. Monitor the temperature and humidity and adjust your exercise plans to suit the weather. Respect the heat.

Loose-fitting clothing will allow air to circulate freely close to your body and promote the evaporation of sweat. Light-colored clothing reflects sunlight, helping you stay cool.

Allow your body several days to adjust to hot weather before engaging in vigorous activity. Some experts say it takes your body about 10 days to adapt. If you are out of shape, begin your exercise program slowly and gradually increase it. If you have any questions about your ability to exercise, see your doctor, especially if you take medications, because some can reduce heat tolerance. Above all, enjoy yourself. Exercise is great any time of year, even in the summer.

Cool down Important - Don't jump into a cold shower immediately after hot-weather exercise. The sudden temperature change taxes your heart muscle while it's still recuperating from the strain of exercising in the heat. It's better to cool down first. Do some stretches or walk slowly for about 10 or 15 minutes to allow your core temperature to return to normal.

Special precautions: If you are very underweight, overweight, pregnant, or an older adult, consult with your doctor on his recommendations. You should not go above a moderate intensity level (60 to 70 % of predicted maximum heart rate) when exercising in the heat. Rest frequently and drink plenty of water before, during, and after exercise.

Tips & Warnings

- Minimal, loose fitting clothing that is comfortable will help promote heat loss and evaporation. Light colors and clothing made of cotton or sweat wicking fabrics are best.
- Avoid open-mesh jerseys and tank tops, since they will cause overexposure to the sun.
- A brimmed hat can help shade your face.
- Always use a good sunscreen product with a SPF of at least 15 (waterproof is best since you will be sweating) to prevent sunburn.
- A wet bandana or ice pack scarf around the neck can also help with staying cool.
- You will probably not need salt tablets or replacement unless you are on diuretics. In this case, consult with your medical doctor and follow his or her recommendations.
- A hot weather hint: carrying a bottle of frozen water in a fanny pack is a good idea. It will supply you with cold water and will help keep you cool
- Keep an eye on your urine - if it's clear, you're properly hydrated; if it's yellow, drink lots more water.
- Avoid excessive use of caffeine or alcohol - both are dehydrating.
- If you feel thirsty, you're already dehydrated, so don't let thirst be an indicator of when to drink water.
- Heat stress is sneaky and athletes tend to think they can train through it. Don't try
- Important note: if you are just beginning an exercise program, it is important to have a physical checkup and discuss an exercise plan with your medical doctor.

By following these recommendations, you can make your exercise sessions during the summer a safe and fun experience. With proper preparation and precautions, you can stay in shape even during the hot months without sacrificing your health and keep your fitness level up.