

# IT'S HOT! IT'S HUMID! IT'S SUNNY!

## Information on heat and sun-related illnesses

*brought to you by your friendly Street Medics*

### Prevention

- ✓ Prehydrate. The body cools itself by sweating; you can lose up to 3 quarts of water per hour through sweat. Pre-hydration provides a fluid "cushion." Drink 16 oz of fluid the evening before, 16 oz in the morning and another 16 oz of fluid an hour before exertion. Don't drink liquids that contain caffeine, alcohol, or lots of sugar (like soda and juice) – these may actually cause you to lose more fluid.
- ✓ Get enough sleep
- ✓ Check on the weather ahead of time and prepare – both temperature and humidity contribute to heat-related illnesses
- ✓ Be aware of any conditions that increase risk (see below)
- ✓ Wear loose-fitting clothing that covers exposed skin and allows sweat to evaporate. Cotton is good, although if it gets soaked it doesn't allow as much evaporation. Specialized fabrics designed to wick sweat away from your skin are even better.
- ✓ Continue to hydrate throughout activity and be aware that with sweating you lose both water and salt. Ideally, drink at least 8 ounces of water or sports drink every 30 minutes (see below for more info on fluid replacement). Thirst is not a good measure of dehydration, because we often don't become thirsty until we are already dehydrated. A good indicator of proper fluid level is urine output and color. You should strive to be "copious and clear," peeing light colored to clear urine every 2 hours.
- ✓ If you are feeling warm sponge off with a wet bandana (or other cloth) behind the ears, on the forehead and on the back of the neck.
- ✓ If you are going to a demonstration or other event where there is a risk of dehydration, consider getting some friends together to form a "water brigade" – a group of folks who hand out water (or even better, water with a bit of salt) to other demonstrators.

**A note on replacing fluids** If a person has been sweating, they have lost both fluids and electrolytes (chemicals in the blood, with sweat mainly salt). The problem may be even worse if they drink water without replacing salt. To correct this imbalance give water with salt, in gatorade or another a commercial sports drink, or water with 1 teaspoon of salt per 32 ounces of water. Do not give fluids with high sugar content (check the label -- more than 5% of daily carbohydrate needs is too much) since the sugar interferes with water absorption in the intestines.

### Risk factors for heat-related illness

- ✓ Not getting enough sleep
- ✓ Dehydration
- ✓ Caffeine (increases urination, so increases dehydration)
- ✓ Ingestion of alcohol and other drugs (cocaine, amphetamines, hallucinogens)
- ✓ Women who are pregnant or menstruating
- ✓ People in the middle of crowds where they are surrounded by warm bodies and have to stand for long periods of time
- ✓ Anyone not used to the conditions – it takes your body 3 – 5 days to adjust to climate and altitude changes. It is harder to adjust to a higher climate, and the risk of problems increases with altitude.
- ✓ Anyone who has had a previous heat-related illness
- ✓ Older people, children, anyone in poor physical condition
- ✓ Certain medications (including diet pills, ephedra, anti-motion-sickness medications, anti-depressants, some heart medications, diuretics and antihistamines)
- ✓ Illnesses such as sunburn, a cold, bronchitis, and any illness that causes a fever or vomiting
- ✓ Chronic medical problems including anorexia, bulimia, skin diseases, obesity, diabetes, heart problems, history of stroke or other nervous system problems

**Dehydration:** when the body loses fluid and salt that are not replaced adequately. Symptoms include thirst, weakness, fatigue, dizziness, headache. Treat by replacing fluids and salt. Start with frequent sips as more liquid may cause vomiting.

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**Sunburn:** when the skin is burned because of excessive solar radiation. Risk of sunburn is higher from 10 am to 3 pm, at higher elevations, on windy days, when a person has fair skin, and when the person is wet. Some foods and medications (especially antibiotics, ibuprofen, aspirin, vitamin A) increase risk of sunburn. Frequent sunburns increase your risk for skin cancer. Prevent sunburn with sun-screen (oil-free if there's a risk of chemical weapons), a hat, loose clothing that covers exposed skin, and avoidance of prolonged sun exposure. Sunburn does not begin to appear until 2 – 8 hours after exposure, and usually peaks 24 – 36 hours later. Symptoms include red, itchy, painful skin, and may include nausea, vomiting, low grade fever, loss of appetite and weakness. Severe sunburn can blister. Treatment includes cooling the skin with water or wet clothes, fluid and salt replacement, aloe vera and vitamin E creams, steroid creams (no steroids to blistering skin) and anti-inflammatory medication (aspirin, ibuprofen). Don't use anesthetic sprays or creams because they can cause allergic reactions. For blistering burns, consider seeing a health care practitioner who can give stronger anti-inflammatory medications.

**Heat cramps:** muscle cramps, usually in the calf or abdomen, caused by loss of salt through sweating and replacement of water without salt. Prevent by replacing fluids lost with water and salt, and by getting enough calcium before exposure to heat. Treated with gentle massage, stretching, and fluid and salt replacement.

**Heat syncope, or fainting:** when a person diverts blood to extremities in order to get rid of heat, resulting in less blood flow to the brain. More common when someone is also dehydrated and/or standing for a long period of time. If someone who faints has hit their head or has any other problem (including stroke, abnormal heart rhythm, diabetes), treat that problem first. If the person wakes up shortly after fainting and is not confused, then they have probably fainted from the heat. Treat heat syncope the same way as mild heat exhaustion (see below). Make sure the person remains laying down for 15 – 30 minutes, then sits for 5 minutes. Be careful when standing for the first time, as fainting may occur again.

**Heat exhaustion:** caused by loss of water and/or salt and exposure to high temperatures (although with heavy exertion this can occur at temperatures as low as 70 degrees F), leading to heavy sweating, pale clammy skin, fast heart rate, weakness, fatigue, headache, anxiety, poor coordination, vomiting and confusion. Mild heat exhaustion (someone with no confusion, vomiting or other medical problems) is treated by getting person to a cool shady place, resting with feet elevated 8 – 12 inches (unless there is a concern about a head injury, broken neck, leg or pelvis), loosening restrictive clothing if it is okay with the person, placing cloths with cool water or ice on the neck, chest and groin (again, with permission), fanning the person, misting with water, and replacing fluid and salt. Do not sponge with alcohol or give aspirin. If the person does not get better in 1 hour they should seek medical attention. Anyone with heat exhaustion should rest for at least 12 hours before further activity. Anyone with more serious symptoms, such as confusion or vomiting, should be seen by a health care professional immediately. While waiting for formal medical attention treat the same as for mild heat exhaustion, but do not give anything by mouth to someone who is confused or unconscious. Untreated heat exhaustion can lead to heat stroke, especially in older and younger people or anyone with other medical problems.

**HEAT STROKE: CAN BE FATAL. AN EMERGENCY** caused by severe dehydration and heat exposure, when the body loses the ability to control body temperature. Symptoms include hot, flushed or dry skin; confusion; shortness of breath; seizures; abnormal heart rhythms. This is a medical emergency. Treated with immediate transport to a hospital. While waiting for transport, treat the same as mild heat exhaustion, but do not give anything by mouth to someone who is confused or unconscious.

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