



Clinical Update

For Telephone Triage Nurses

May - June 2012

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June 2012 will likely go into the record books as having more all-time high record temperatures than any time since 1936.



Heat Wave Emergencies

Heat-related illness is caused by exposure to high temperatures. High humidity increases the risk. The primary way the body cools itself off is through sweating and evaporation of the sweat. On days with high humidity, evaporation does not occur as rapidly and the body has trouble releasing heat.

Which is more serious, heat exhaustion or heat stroke?

Heat stroke is more serious than heat exhaustion. The word "stroke" makes it easy to remember which is worse. Heatstroke is a life-threatening emergency with a 10-70% mortality rate if not treated promptly. EMS 911 transport is required.

What are the symptoms of heat stroke?

An individual with heat stroke is usually confused or unconscious. The skin is hot and flushed. The temperature of the heat stroke victim is often over 105° F (40.5° C). Sweating stops in 50% of victims.

What are symptoms of heat exhaustion?

Symptoms include profuse sweating, headache, nausea, vomiting, dizziness and weakness. The body temperature can range from normal to 104° F (40° C). The onset of symptoms is usually gradual, over several hours.

Dehydration is the primary problem in a person with heat exhaustion. As dehydration worsens, heat exhaustion symptoms go from mild to severe. Heat exhaustion can turn in to heat stroke.

My son is 12 years old and during a soccer game he started feeling tired and nauseated. It was very hot and quite humid. Normally, he is very healthy and can play an entire game and not get tired. Could this have been heat exhaustion?

Absolutely! Heat exhaustion is the most likely cause of these symptoms. On a hot day, heat exhaustion is the most common reason for healthy individuals to start feeling tired, nauseated, and weak.

What is the treatment for heat exhaustion?

Remember that the primary problem in individuals with heat exhaustion is dehydration. Sometimes the excessive sweating can also lower the body's electrolytes (sodium, potassium). The main treatment is to drink lots of liquids and replace electrolytes.

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What liquids are best for treating heat exhaustion?

Sports - rehydration drinks (e.g., Gatorade or Powerade) are good for treatment of heat exhaustion. They contain sugar and salt mixed in to the liquid.

Cool water is very good for treatment of dehydration from heat exhaustion. This is a situation where eating some salty foods (e.g., potato chips or pretzels) helps!

How much liquids are needed?

An adult or teen with heat exhaustion should drink 2-3 cups (480-720 ml) of liquids right away to replace what was lost. Then the adult or teen should drink approximately 1 cup (240 ml) every 15 minutes for the next 1-2 hours.

The color of the urine (pee) tells if a person is drinking enough liquids. Dark yellow urine suggests dehydration. Clear or light yellow urine suggests adequate hydration.

Who is at greatest risk for heat-related illness?

The very young, the very old, and obese individuals are at greater risk of heat-related illness.

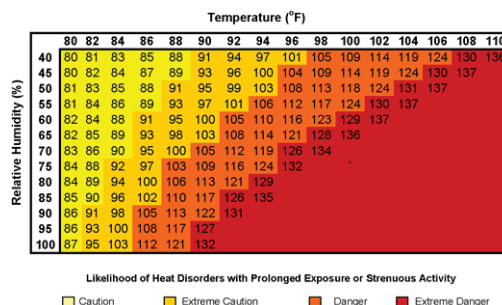
- **The very young:** Babies and infants can become dehydrated quickly because of their small size.
- **The very old:** Elderly individuals are at increased risk because they have a decreased ability to sweat. They also may have underlying cardiac and other medical conditions that further reduce their ability to adapt to the heat.
- **Obesity:** Individuals with a higher percent body fat have a decreased ability to disperse heat.

What is the Heat Index?

Higher humidity makes it feel hotter outside. Lower humidity make it feel cooler outside because body sweating and evaporative-cooling work better in dry air.

The Heat Index is a measure of how hot it really feels when one factors in both the relative humidity and the actual air temperature.

More information on this is available from the National Weather Service at <http://www.nws.noaa.gov/om/heat/index.shtml>.



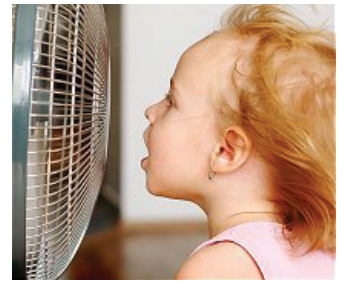
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What are some tips for preventing heat-related illness?

- During heat waves, spend as much time as possible in cool environments (e.g., with air conditioning) or use an electric fan. Slow down. It takes at least a week to acclimate to a hot environment.
- Take 5-minute water breaks in the shade every 25 minutes. Drink water even if not thirsty. Thirst is often delayed until a person is almost dehydrated. A person can't drink too much water during hot weather.
- Avoid salt tablets, because they slow down stomach emptying and delay the absorption of fluids.
- Wear a single layer of lightweight clothing. Change it if it becomes wet with perspiration.
- Athletic coaches recommend that exercise sessions be shortened and less vigorous if the temperature exceeds 82° F (28° C), especially if the humidity is high.
- When working or exercising in a hot environment, drink large amounts of cool liquids. For teens and adults this means 1 cup every 15 minutes. Water is the best liquid for replacing lost sweat. Very little salt is lost. Special glucose-electrolyte solutions (sports drinks) offer no advantage over water unless exercising for longer than an hour.



FIRST AID Advice for Heatstroke or Sunstroke

- **Call EMS 911 immediately**
- Move the victim to a cool shady area. If possible, move into an air-conditioned place.
- Lie the victim lie down on his or her back. Elevate the feet.
- Remove excess clothing or equipment (e.g., sports gear, protective work uniforms).
- Sponge the entire body surface continuously with cool water. Fan the victim to increase evaporation.
- If the victim is awake, give as much cold water or sports drink (e.g., Gatorade, Powerade) as he or she can drink. An awake adult or teen should drink 2-3 cups (480-720 ml) of liquids right away to replace what was lost.
- Fever medicines are of no value for the fever seen with heat stroke.

FIRST AID for Heat Exhaustion:

- Move the victim to a cool shady area. If possible, move into an air-conditioned place.
- The victim should lie down. Elevate the feet.
- Undress victim (except for underwear) so the body surface can give off heat.
- Sponge the entire body surface continuously with cool water. Fan the victim to increase evaporation.
- Give as much cold water or sports drink (e.g., Gatorade, Powerade) as the victim can tolerate. An adult or teen with heat exhaustion should drink 2-3 cups (480-720 ml) of liquids right away to replace what was lost. Then the adult or teen should drink approximately 1 cup (240 ml) every 15 minutes for the next 1-2 hours.

