

Heat Reactions

Definition

- Symptoms after being in high temperatures (such as heat waves)
- Symptoms after hard work or sports during hot weather
- Heat cramps, heat exhaustion and heatstroke are covered

Health Information

Types of Heat Reactions

- There are 3 main reactions to hot temperatures and heat waves.
- **Heatstroke or Sunstroke.** Symptoms include hot, flushed skin with high fever over 105° F (40.5° C). Over 50% of children with heatstroke do not sweat. Heatstroke can cause confusion, coma or shock. Heatstroke is a life-threatening emergency. Call 911.
- **Heat Exhaustion.** Symptoms include pale skin, profuse sweating and nausea. Dizziness, fainting, or weakness can also be signs. Can have a mild fever 100 - 102° F (37.8 - 39° C) for a short time. Most of the time, there is no fever. Most of these symptoms are caused by dehydration from sweating. A person can progress from heat exhaustion to heatstroke. So, all patients with severe symptoms (such as fainting) need to be seen now. Mild symptoms (such as dizziness) can be treated at home with fluids and rest. But, if these don't resolve with treatment, these children also need to be seen.
- **Heat Cramps.** Severe muscle cramps in the legs (calf or thigh muscles) and stomach are present. No fever. Tightness or spasms of the hands may occur. After your child drinks fluids and cools down, he or she will feel better. All symptoms should go away in a few hours.

Causes

- All 3 reactions are caused by exposure to high temperatures often with high humidity.
- **Exertion.** During hot weather, hard work or sports can cause heat production to exceed heat loss.
- **Dehydration.** Poor hydration interferes with sweating. That increases the risk of heat reactions.
- **Babies** are at more risk because they are less able to sweat when hot.
- **Heat waves.** The first heat wave of the summer can cause heat problems. It takes 8 to 10 days for you to become used to high summer temperatures. This can also happen on vacations.
- **Exposure to a very high temperature.** It usually follows exposure to a very high temperature. Examples are being inside a hot car or in a steam tent. Being indoors without air-conditioning during heat waves is also the main cause of heat stroke in the elderly.
- **Health and risk factors.** Babies are less able to sweat when hot. Obese children also have a decreased ability to give off heat.

Prevention Of Heat Reactions

- **Drink more water.** When working or exercising in hot weather, have your child drink large amounts of cool water. This helps to prevent dehydration. For teens, this means at least 8 ounces (240 ml) every 15 to 30 minutes. Water is the ideal liquid for replacing lost sweat. Very little salt is lost.
- **Sports drinks.** Most often, special sports drinks offer no advantage over water. But, they are helpful if working out for longer than an hour. If that is the case, replace 1 water drink per hour with a sports drink.
- **Take water breaks.** Try to do this every 15 minutes in the shade. Drink some water even if you are not thirsty. Thirst can be delayed until a person is almost dehydrated.
- **Avoid salt tablets.** They slow down stomach emptying and delay the absorption of fluids.
- **Dress cool.** Wear a single layer of lightweight clothing. Change it if it becomes wet with sweat. Children need the same layers of clothing as an adult. Be extra careful of babies in hot weather. Do not overdress them.
- **Exercise smart.** Physical activity in hot weather should be increased slowly.
- **Stay cool.** During heat waves, spend as much time as possible inside with air-conditioning. Electric

fans also help. Slow down. It takes at least a week to get used to hot summer temperatures.

Care Advice

1. **Drink Lots of Fluids:**

- All the symptoms of heat reactions respond to fluid replacement. Give your child as much cold water as he will drink. Do this until he feels better.
- If you have a sports drink (such as Gatorade), give it instead. Sports drinks contain water, salt and sugar.
- **How Much (Teens):** Start with 3 cups (24 ounces or 720 ml). Then give 1 cup (240 ml) every 15 minutes for the next 1-2 hours.
- **Preteens (6-12):** Start with 2 cups (16 ounces or 480 ml). Then give 6 ounces (180 ml) every 15 minutes for the next 1-2 hours.
- The urine color can tell if drinking enough fluids. Dark yellow urine means mild dehydration. Clear or light yellow urine means your child is drinking enough fluids.

2. **Heat Cramps:**

- Heat cramps are the most common reaction to heat exposure. They are never serious. Sometimes, they can be an early warning sign of heat exhaustion.
- The cramps occur in the muscles that were working the hardest.
- Heat cramps can be quite painful.
- Heat cramps should clear in 1 to 2 hours after lost fluids are replaced.

3. **Heat Exhaustion:**

- Put the child in a cool place. Have him lie down with the feet elevated.
- Undress him (except for underwear) so the body surface can give off heat.
- Sponge the entire body surface constantly with cool water. Make the water as cold as tolerated without causing shivering.
- Weakness should clear in 2 to 3 hours after lost fluids are replaced.

4. **Dizziness:**

- Dizziness and weakness can be caused by mild dehydration. This occurs from all the sweating that happens when hot.
- Dizziness should clear in 1 to 2 hours after the lost fluids are replaced.
- Mild dehydration can also cause nausea. It should pass after drinking enough fluids.

5. **Fever:**

- The body can become overheated from activity when it's hot outdoors. The temperature should come down to normal after drinking fluids and resting. This may take 1 or 2 hours.
- **No Meds:** Fever medicines are of no value for this type of fever.
- **Cool Bath:** First, have your child drink some liquids. Then, take a cool bath or shower for 5 minutes. Cool means less than body temperature. Reason: Brings down the temperature faster.

6. **Food:**

- After your child has taken fluids for 1 hour, you can offer some salty foods.
- Don't give salt tablets. Reason: They slow the absorption of water.

7. **Rest:**

- Rest in a cool place with a fan until feeling better.

Call Your Doctor If

- Vomiting keeps from drinking
- Signs of dehydration occur
- Muscle cramps last more than 4 hours
- Fever goes above 104°F (40.0°C)
- Fever lasts more than 2 hours
- You think your child needs to be seen
- Your child becomes worse

Pediatric Care Advice

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