

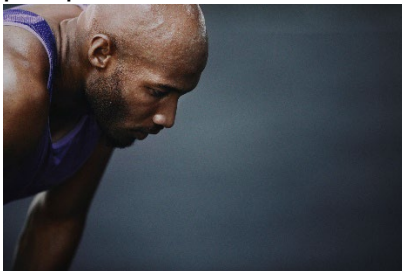
NC DEQ Heat Illness Toolbox Talk



1. Heat-related illnesses can occur both indoors and outdoors.



2. “Heat-related deaths have been increasing in the U.S., with approximately 1,602 occurring in 2021, 1,722 in 2022, and **2,302 in 2023.**” (source: HHS.gov)
3. Heat illnesses occur when your body cannot adequately cool itself through perspiration.



4. Workers at highest risk of heat illnesses include those who are 65 years of age or older, are overweight, have heart disease or high blood pressure, or take medications that may be affected by extreme heat.
5. What is Heat Index? Heat Index, or apparent temperature, is what a temperature feels like to the human body including the local relative humidity.

Heat Indexes and Heat Illness Risk Levels

Heat Index	Risk Level
Less than 91 deg. F	Lower
91 deg. F to 103 deg. F	Moderate
103 deg. F to 115 deg. F	High
Greater than 115 deg. F	Very high to extreme

6. There are several types of heat illnesses. They are listed below from least serious to most serious:

- **Heat Rash**: A red, bumpy rash that may itch. It is uncomfortable, but usually not dangerous. It can be the first sign that heat is affecting your body.



(Photo courtesy of CDC)

- **Heat Syncope (Heat Fainting)**: Heat can cause you to faint, especially if you are not used to working in high heat. It is usually not dangerous and can be prevented by moving around rather than standing still.
- **Heat Cramps**: These are painful cramps that happen because the body has lost too much salt through perspiration. Drinking electrolyte fluids can resolve mild heat cramps. Some good electrolyte drinks include Gatorade, Pedialyte Sport, Milk, and Coconut Water. A popular southern remedy is to drink some pickle juice. It is better to prevent heat cramps by drinking these fluids in advance. Extreme heat cramps may require medical care.
- **Heat Exhaustion**: Heat Exhaustion can be a serious heat illness. Causes include loss of fluid, salt, or both, through perspiration. Symptoms include weakness, dizziness, clammy skin, and nausea. Body temperature is typically above normal (98.6 deg. F). Treat heat exhaustion by resting in a cool place, drinking high electrolyte drinks, and removing unnecessary clothing. If these steps don't help, or vomiting begins call for emergency assistance immediately.

- **Heat Stroke:** Heatstroke is the most dangerous heat illness. The body's cooling processes have stopped working as the victim is no longer perspiring. Symptoms include hot and dry skin, convulsions, seizures, confusion, and loss of consciousness. Heatstroke can lead to death. Call an ambulance immediately when these symptoms are present. While waiting for the ambulance keep the victim cool and provide fluids if he or she is conscious.

7. **Mental Symptoms:** Workers suffering from heat related illnesses may show the following mental symptoms:

- Increased Irritability
- Difficulty Concentrating
- Agitation
- Changes in Behavior
- Hallucinations

8. **Prevention:**

- **Acclimatization** is the process of building tolerance to heat over several days to a week. New workers should start with 20% heat exposure on day one and add no more than 20% per day. It takes 5 days before the employee should work in full heat all day. Workers with previous heat experience start at 50% exposure on day 1, 60% day 2, 80% day 3, and 100% day 4.

- **Hydration:**

- Avoid caffeine and alcohol before working in high heat
- Drink about 1 cup of liquids every 15-20 minutes in high heat
- Do not exceed 6 cups of liquids per hour
- Keep your drinks cool (<60 deg. F.)
- Incorporate some high electrolyte drinks to replace salt loss due to perspiration (Gatorade, Pedialyte Sport, Milk, or Coconut Water)

- **Breaks:**

- Take frequent breaks in a cool, shady location
- If you notice yourself experiencing symptoms of Heat Illness, take a break immediately and notify your supervisor

- **Clothing:**

- Wear loose-fitting, light-colored clothing
- Choose loose-weave materials that breathe well (cotton or semi-synthetics)
- Wear a wide brimmed hat and sunglasses

9. **NIOSH Heat App:** A very thorough and portable resource for the prevention, recognition and treatment of Heat Related Illnesses is a smart phone app named the **OSHA- NIOSH Heat Safety Tool**. It uses GPS to calculate heat index at your current work location. It describes symptoms and first aid information for the different types of heat illnesses. It also provides recommended fluid intake levels per hour. You can find the **OSHA-NIOSH Heat Safety Tool** in the Apple Store or Google Play. Look for this icon:





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NC DEQ Heat Illness Toolbox Talk Quiz



1. True or false: Heat Illnesses can occur indoors:
2. Name 3 factors that increase the risk of heat related illnesses:
3. What is the Heat Index or Apparent Temperature?
4. Describe the most serious heat illness, its symptoms, and how to react to it:
5. Briefly describe the idea behind Acclimatization:
6. Name two things to avoid before and while working in high heat?
7. What's a good general rule for fluid intake in very high heat?
8. During heavy perspiration it's good practice to incorporate some drinks containing _____ to replace lost salts. (electrolytes)
9. Name some mental health symptoms of heat related illnesses:

NC DEQ Heat Illness Toolbox Talk Quiz Key



1. True or false: Heat Illnesses can occur indoors: True
2. Name 3 factors that increase the risk of heat related illnesses:
age, weight, heart disease, blood pressure, certain medications
3. What is the Heat Index or Apparent Temperature? The temperature your body feels taking relative humidity into account
4. Describe the most serious heat illness, its symptoms, and how to react to it:

Heatstroke is the most dangerous heat illness. Symptoms include hot and dry skin, convulsions, seizures, confusion, and loss of consciousness. Heatstroke can lead to death. Call an ambulance immediately when these symptoms are present. While waiting for the ambulance keep the victim cool and provide fluids if he or she is conscious.
5. Briefly describe the idea behind Acclimatization: People should not just begin working 8-hour days in high heat. Our bodies need several days, or up to a week, to adapt to working in high heat. Exposure should start around 20% for new employees and increase in phases each day over the first week.
6. Name two things to avoid before and while working in high heat? Caffeine and alcoholic beverages.
7. What's a good general rule for fluid intake in very high heat? 1 cup every 15-20 minutes, not to exceed 6 cups per hour.
8. During heavy perspiration it's good practice to incorporate some drinks containing _____ to replace lost salts. (electrolytes)
9. Name some mental health symptoms of heat-related illnesses: increased irritability, difficulty concentrating, agitation, changes in behavior, hallucinations