

Cold Stress Toolbox Talk

Use this toolbox talk to teach your crews about the different types of cold stress (including trench foot, hypothermia, and frostbite) and how to prepare for working in cold weather on the construction site.

Cold Stress Safety Talk

Construction workers who work in cold weather or cold environments are at risk of suffering from cold stress.

What is considered “cold” is relative depending on the region of the country where you work and the tolerance of each individual worker. In regions unaccustomed to winter weather, near-freezing temperatures can lead to cold stress, even without snow and ice.

Each working environment should be analyzed individually so the proper steps can be taken to keep workers warm and safe.

What is cold stress?

Cold stress is a condition that occurs when the body can no longer maintain a normal, healthy temperature. When left untreated, cold stress can result in injuries leading to permanent tissue damage or even death.

Types of cold stress

When exposed to cold temperatures without proper protection, a number of serious cold-related illnesses may occur. The common types of cold stress include trench foot, hypothermia, and frostbite.

The following sections cover the symptoms, prevention, and treatment of these serious conditions.

1. Trench foot

Trench foot-also known as immersion foot-is an injury of the feet resulting from prolonged exposure to wet and cold conditions.

To prevent heat loss, the body will constrict blood vessels to shut down circulation in the feet, depriving them of vital oxygen and nutrients. This can result in skin irritation, tissue loss, and nerve damage.

It doesn't even need to be that cold for trench foot to develop. Trench foot can occur in individuals who work in up to 60 degrees F weather conditions as long as their feet are wet. That's because wet feet lose heat 25 times faster than dry feet.

Colder temperatures will increase the risk of trench foot and speed up the process of developing it.

Trench foot prevention

To prevent trench foot, it's important to have extra socks and footwear available when working in wet or snowy conditions. Frequently change your socks and footwear to maintain dry feet as much as possible. Waterproof footwear is also recommended.

You should also air dry and elevate your feet after you take off your wet socks and shoes at the end of the day.

Trench foot symptoms

Symptoms of trench foot include blisters, blotchy skin, and redness. You may feel a tingling or itching sensation in your feet, in addition to a numbness or heaviness.

Once your feet become warm, you may experience pain along with redness and dryness of the skin. Trench foot can appear in just a portion of the foot, or the whole foot in severe cases.

Trench foot treatment

To treat trench foot, rest and elevate your feet to improve circulation. Check your feet at least once a day for any signs of infection (especially if you have a foot wound) or worsening symptoms. If symptoms of trench foot fail to improve, you should see a medical professional.

When caught and treated early enough, trench foot is treatable without causing any major complications. If left untreated, trench foot can develop into

several severe symptoms, including ulcers, gangrene, permanent nerve damage, an inability to walk, and even amputation.

2. Hypothermia

Hypothermia is a condition that develops when an individual experiences dangerously low body temperature, below 95 degrees F. Normal body temperature is 98.6 degrees F.

When outside in cold weather, your body begins to lose heat faster than it can be produced. Hypothermia occurs after prolonged exposure, when your body's stored energy is used up. When your body temperature is too low, it can affect your brain, heart, and other organs, affecting your ability to think clearly or function normally.

Hypothermia prevention

To prevent hypothermia, it's important to dress warm when you know you will be in a cold environment. Dress in layers and make sure you wear gloves and a warm hat, because 30% of heat is lost through the head.

If possible, change into dry clothes whenever your clothing becomes wet.

Hypothermia symptoms

Symptoms of hypothermia include shivering, exhaustion, slurred speech, clumsiness, confusion, memory loss, and even unconsciousness.

Someone suffering from hypothermia often isn't aware they have it, because symptoms often begin gradually. So if you notice any of these symptoms in you or your coworkers, act quickly and seek medical attention.

Hypothermia treatment

To treat hypothermia, move the individual out of the cold and place them in a warm area. Remove any wet clothing and wrap them with blankets. Use a heater electric blanket or heating pad if you have access.

Drinking warm beverages or taking a warm bath can also help raise body temperatures. If at any point you notice slow breathing or a loss of consciousness, call 911 immediately. If left untreated, hypothermia can result in cardiac arrest, liver damage, kidney failure, and even death.

3. Frostbite

Frostbite is a condition that occurs when an area of your body gets so cold that it loses circulation. The most common areas to be affected by frostbite are the ears, chin, cheeks, fingertips, toes, and nose, though frostbite can occur pretty much anywhere on the body.

Frostbite can still occur at temperatures above freezing, due to [wind chill](#).

Frostbite prevention

To prevent frostbite, dress warmly in several loose layers. Tight clothing actually increases your risk of frostbite by constricting your body heat to a confined area. By wearing loose layers of clothing, you allow your body heat to spread.

Wear a hat that covers your head as well as your ears. In extreme cold you may also need a ski mask. For hands and feet, insulated gloves/mittens and moisture-resistant socks and waterproof boots are a must.

Frostbite symptoms

Symptoms of frostbite include numbness, a "pins and needles" feeling in affected areas, reddened skin that changes color, hardened or waxy skin, and blisters.

Frostbite treatment

Frostbite treatment is similar to the treatment for hypothermia. First, remove the individual out of the cold and place them in a warm area.

If the individual has frostbitten feet or toes, they should not walk on them unless absolutely necessary. Once inside, remove wet clothing and cover the person's body with blankets. Do not rub/massage the frostbitten area, or you may cause more damage. Warm the affected area using body heat or warm, not hot, water.

Seek medical attention if the individual experiences extreme pain as skin thaws, skin blisters appear, skin color changes or becomes hard, or numbness persists. When left untreated, frostbite can lead to permanent damage or amputation of the affected areas.

Safety tips for working in cold weather

When working in a cold environment or [winter weather conditions](#), there are potential risks for cold stress and certain protocols you should always follow fully. Some safe work practices for preventing cold stress include:

1. Supervisors should eliminate or limit outside work as much as possible in extremely cold temperatures.
2. Gradually introduce workers to the cold. For example, if it's the first cold day of the season or extremely cold for the area, your body will not be used to the temperature and is more likely to succumb to a cold-related illness.
3. Dress in layers and have a backup change of clothing you can change into if you get wet.
4. Drink warm beverages to help maintain a warm core temperature.
5. Schedule regular breaks from the cold in warm areas, such as indoors or in a vehicle. This will help you to avoid getting overly cold for a prolonged amount of time.
6. Know the symptoms of cold stress and monitor the condition of yourself and those around you. If you notice something wrong, move to a warm area and notify a supervisor immediately.