

# How Would You Treat Hands Like These?



**Would you know what to do if a co-worker had frozen hands like these?**

**Step 1: Diagnose:** Frozen, stiff and blackened fingers are a sure sign of frostbite.

**Step 2: Treat:** The best way to treat frostbite is to get the victim to a warm room and loosely cover the affected area until it warms up. Do NOT warm the affected area by rubbing it or directly exposing it to fire, a heat lamp or other heat source.

**The Moral:** There are different forms of cold stress and you need to be able to recognize the signs and symptoms of each so you know how to properly treat it.

## COLD STRESS CAN KILL

## WHAT'S AT STAKE

Being cold isn't just uncomfortable; it can cause serious injury and, in extreme cases, even kill you. In the U.S., approximately 700 people die of cold-related injuries each year—that's higher than the number of fatalities caused by floods and tornadoes.

These cold-related injuries, which are known as “cold stress” can happen at work.

## **WHO'S AT RISK**

You're at risk of cold stress if you work outdoors, in/near/above water or inside freezers or refrigerated facilities, including:

- Construction;
- Utilities;
- Mining;
- Oil and gas extraction;
- Transportation and truck driving;
- Agriculture;
- Lumber;
- Fishing;
- Mortuaries; and
- Food production and warehousing.

## **HOW COLD STRESS HAPPENS**

Normal body temperature is 98.6° F. Minor and short-term decreases in body temperature are uncomfortable but generally not dangerous; but when core body temperature drops below 95.0° F, the body has trouble circulating blood. Result: The body becomes susceptible to cold stress. The longer the exposure to sub-95.0° F temperatures, the greater the danger.

## **HOW TO RECOGNIZE & TREAT COLD STRESS**

If you work in cold conditions, you and your co-workers may be at risk of 4 kinds of cold stress. Make sure you know the signs and symptoms of each one so you can recognize and properly treat the condition:

### **1. Frostbite**



Freezing of the extremities (fingers, toes, nose, earlobes, etc.) caused by loss of blood flow, which can cause tissue damage and amputation

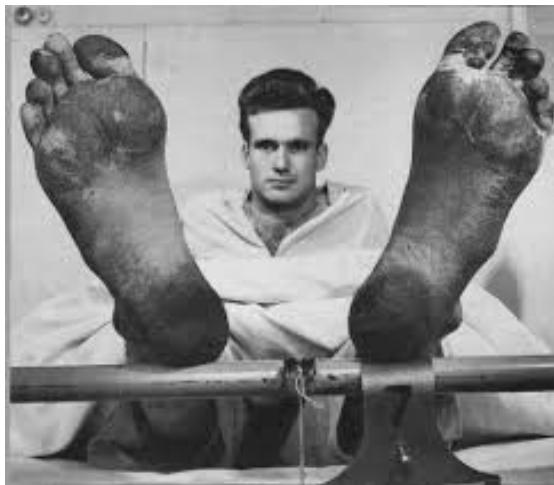
### **Frostbite Signs & Symptoms**

- Bluish or pale, waxy skin
- Blackened skin (extreme cases)
- Blistering
- Numbness, tingling, stinging sensation

### **Frostbite First Aid Treatment**

- Get into warm room ASAP
- Loosely cover affected area
- Give victim warm, sweetened (nonalcoholic) drinks
- Allow victim and affected area to warm up
- DO NOT rub affected area
- DO NOT directly expose the affected area to fire, heat lamp or other heat source that can cause burns
- DO NOT break blisters

## **2. Trench Foot (aka Immersion Foot)**



Injury to the feet caused by prolonged exposure to cold and/or wet conditions which causes blood flow to the feet to shut down, potentially resulting in tissue damage and amputation

### **Trench Foot Signs & Symptoms**

- Reddening
- Foot turns dark purple, blue or gray (extreme cases)
- Swelling
- Blistering
- Bleeding under the skin
- Numbness
- Tingling pain
- Leg cramps

### **Trench Foot First Aid Treatment**

- Remove wet shoes, boots and socks
- Dry the feet
- DO NOT let the victim walk because it can cause tissue damage to the feet

### **3. Chilblains**



Tissue damage, typically to the feet or hands that occurs when exposure to cold damages beds of capillary or small blood vessels in the skin

### **Chilblains Signs & Symptoms**

- Reddening
- Inflammation
- Blistering
- Ulceration, i.e., formation of open sores (extreme cases)
- Itchiness

### **Chilblains First Aid Treatment**

- Slowly warm skin
- Keep blisters/ulcers clean and covered
- Treat with corticosteroid creams
- DO NOT scratch the itch
- DO NOT break blisters

## **4. Hypothermia**



The most dangerous form of cold stress that occurs when body temperature drops so low that the body can no longer replace lost body heat and uses up its stored energy. Possible result: Body

systems and functions shut down and the victim essentially freezes to death

## **Hypothermia Signs & Symptoms**

### Early Symptoms

- Shivering
- Fatigue
- Loss of coordination
- Confusion/Disorientation

### Late Symptoms

- Shivering stops
- Blue skin
- Dilated pupils
- Slowed pulse & breathing
- Loss of consciousness

## **Hypothermia First Aid Treatment**

- Call for immediate medical help
- Move victim to warm area or room
- Remove wet clothing
- Warm center of body—chest, neck, head, groin
- Have victim drink warm beverages without alcohol
- When body temperature increases, keep victim dry and wrapped in a warm blanket—including the head and neck
- Begin CPR if victim has no pulse

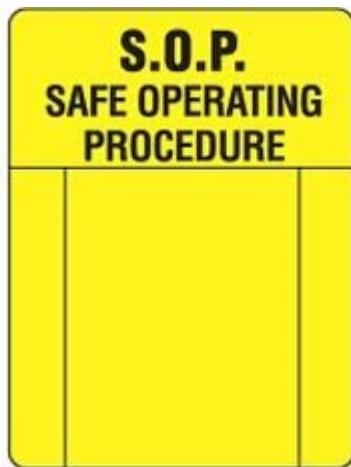
## **HOW COLD STRESS CAN BE AVOIDED**

The key to protecting yourself against cold stress is being aware of the danger and taking steps to keep your core body temperature at or above the critical 95.0° F threshold.

- The company will do its part in achieving this goal by implementing appropriate engineering and work controls to minimize your exposure to work conditions that can lead to cold stress;
- By you also have to do your part and protect yourself.

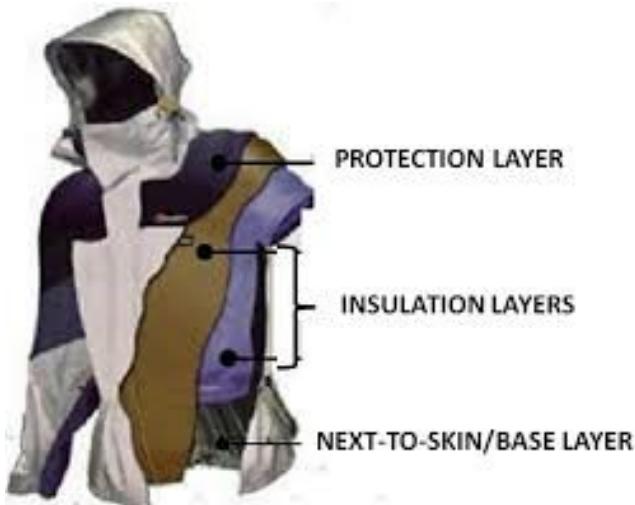
## 10 Ways to Protect Yourself When Working in the Cold:

1. Be aware of and follow all safe work procedures



2. Wear at least 3 layers of protective clothing:

- An inner layer of wool, silk or synthetics to insulate your body against moisture
- A middle layer of wool or synthetics for insulation in case the outer layer gets wet
- An outer layer to protect against wind and moisture and that's ventilated to prevent overheating



3. Wear a hat or hood to keep from escaping from your head



4. If necessary, wear a mask to protect your face and mouth



5. Wear insulated and water-proof gloves



6. Wear warm, insulated and, if necessary, water-proof boots or footwear



7. Take rest breaks to warm-up



8. Keep yourself hydrated by drinking water and warm beverages—but not alcohol



9. Keep an eye on your co-workers and how they're faring in the cold



10. Make sure you know how to recognize and treat the 4 kinds of cold stress

