



# SHIFT BRIEFING



## COLD WEATHER INJURIES RECOGNIZING SIGNS & SYMPTOMS

Working in cold temperatures can lead to two types of injuries; frostbite and hypothermia. It is an important safety practice to watch for the signs and symptoms of cold injuries in yourself and each other. Let's review each.

### Frostbite

Frostbite is an injury to localized body parts when ice crystals or blood clots form in, most typically fingers, toes, and noses. As a protective response, when your body is exposed to extreme cold, blood vessels narrow (constrict) so that blood (and oxygen) are diverted away from your extremities to your vital organs to keep your body alive. After some time, this lack of blood supply and oxygen to the skin can start to cause damage to the cells.

Cold temperature is the primary cause of frostbite, but high winds increase the risk. Also, medical conditions such as peripheral arterial disease (PAD) or diabetes can increase the risk of frostbite. Certain prescription medications that constrict blood vessels, such as beta-blockers, also increase the risk. Smoking or the use of alcohol and recreational drugs can also add to the risk for workers who are outside for extended periods.

There are two levels of frostbite: Superficial and Deep. Superficial frostbite affects the epidermis or even the top of the dermis; the first two layers of skin. There is usually little or no tissue loss. In superficial frostbite, the affected area of skin usually becomes white or may turn red, or even blue. There may be a loss of feeling in the affected body part. It may also feel hard or stiff (like it is frozen). In later stages, there can also be swelling of the affected area, or blisters filled with clear or milky fluid may appear on the skin.

Deep frostbite includes tissue damage to the full thickness of the skin and even into the fat layer and muscles. Treatment is to remove the person from the cold such as in a warm vehicle. Let the area warm naturally. Blankets can be added, but not electric blankets. Do not rub the area as this can further damage the already damaged skin.

### Hypothermia

Hypothermia occurs when the body's core temperature drops below 95° F (normal body temperature is 98.6° F). As with frostbite, several medical conditions, medications, and habits can increase the risk for hypothermia. Low body temperature can cause a self-protective slow-down of breathing, heart rate, and brain functioning. Signs and symptoms include:

- Shivering - which may stop as hypothermia progresses. Shivering is a sign that the body is working properly to try and generate heat. When shivering ceases, it is a sign of complete shutdown of normal body function.
- Loss of coordination, fumbling hands, or stumbling
- Confusion, drowsiness or exhaustion, or memory loss. Unconsciousness is possible in severe hypothermia.

Care for a victim is to remove the person from the cold and place them in a warm environment, such as a running vehicle. Warm the person with blankets. If the person is fully alert, offer them warm, un-caffeinated drinks.

For both frostbite and hypothermia, seek medical attention if conditions do not improve with initial treatments.