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*Ohio AgrAbility Fact Sheet Series*

# Injury Prevention: Types of Cold Stress

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Long exposure to cold, wet, and windy conditions can be dangerous even at temperatures above freezing. Since many tasks on the farm must be completed regardless of the weather conditions, farmers should know how to detect and respond to cold stress injuries.

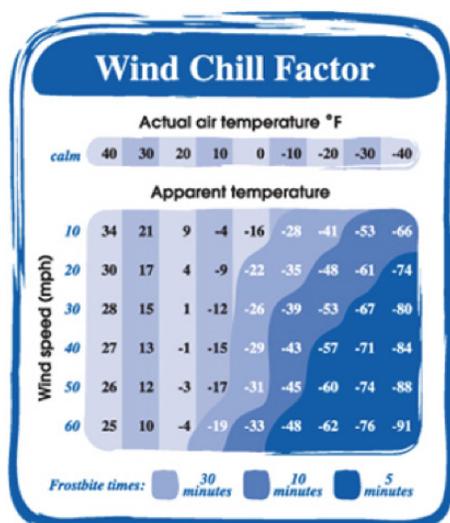
Older adults and people with a pre-existing condition are at a higher risk. Examples of high-risk conditions are the common cold, diabetes, atherosclerosis, hypothyroidism, arthritis, or using a prosthesis. Certain medicines limit the amount of heat a body

makes, making their users more susceptible to cold stress. Medications like anti-depressants, sedatives, and heart medicine are examples. Alcoholic and caffeinated beverage consumption also lowers the amount of heat a body can produce.

It is important to remember it takes even the healthiest person longer to complete simple tasks in the winter. However, people with arthritis or any form of limited mobility may be at higher risk of cold stress because of an added length of time to complete tasks, slower reaction time, or decreased balance.

Contributing factors of developing a cold stress condition are cold temperatures, high/cold winds, dampness, and exposure to cold water. Cold air, water, and snow draw heat from the body. Four specific conditions that can result from cold stress are hypothermia, frostbite, trench foot, and chilblains.

**Hypothermia:** The body is unable to produce heat because it used all its stored energy. Occurs more in spring and fall than winter.



Wind chill chart with relationship to frostbite

**Early Symptoms**

- Shivering
- Fatigue
- Loss of coordination

**Late Symptoms**

- Dilated pupils
- Slowed pulse and breathing
- Loss of consciousness

### **First Aid**

- Call 911
- Seek a warm room or shelter
- Remove any wet clothing
- Warm the chest, neck, head, and groin first with an electric blanket
- If able, give, consume warm beverages (not alcohol or caffeine)
- Keep dry and wrapped in a warm blanket
- Administer CPR if pulse is lost

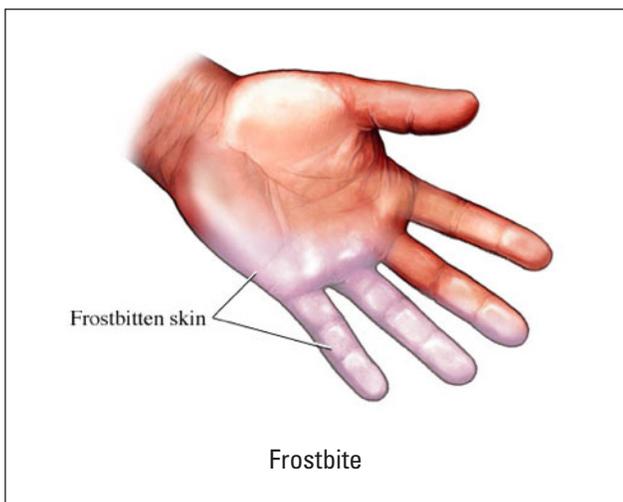
**Frostbite:** The skin freezes and loses water.

### **Symptoms**

- Reduced blood flow to hands and feet
- Numbness
- Aching
- Tingling/stinging
- Bluish or pale, waxy skin

### **First Aid**

- Seek a warm room as soon as possible
- Avoid walking on frostbitten feet or toes
- Soak affected area in warm (not hot) water
- Do not use heating pad, fireplace, or radiator for warming
- Rubbing the area may cause more tissue damage
- Wrap in a soft cloth



**Trench foot:** Caused by prolonged exposure to wet and cold conditions. It can occur at 60 degrees if feet are constantly wet. It is similar to frostbite, but less severe.

### **Symptoms**

- Reddening of the skin
- Numbness
- Leg cramps
- Swelling
- Tingling pain
- Blisters/ulcers
- Bleeding under the skin
- Gangrene

### **First Aid**

- Remove shoes/boots and wet socks
- Dry feet
- Avoid walking on feet to avoid more tissue damage



Trench foot

**Chilblains:** Ulcers formed by damaged blood vessels in the skin from repeated exposure of skin to temperatures below 60 degrees.

### **Symptoms**

- Redness
- Possible blistering
- Inflammation
- Possible ulceration in severe cases



Chilblains

### First Aid

- Do not scratch
- Slowly warm the skin
- Use corticosteroid creams to relieve itching and swelling
- Keep blisters and ulcers clean and covered

### Acknowledgments

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These fact sheets were developed to promote success in agriculture for Ohio’s farmers and farm families coping with a disability or long-term health condition. AgrAbility offers information and referral materials such as this fact sheet, along with on-site assessment, technical assistance, and awareness in preventing secondary injuries. Fact sheets were developed with funding from NIFA, project number OHON0006.

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