

## Cold Weather Injuries



### Preventing cold weather injuries

Cold weather injuries can be life or limb threatening. The best way to avoid these injuries is to:

- Be aware of the current and forecasted weather before going outside in the cold.
- Take note of the 'wind chill factor'. This measures how much colder the body feels and how much faster the body loses heat depending on how much the wind is blowing.
- Dress properly for the outside temperature and for the activities you will be doing. For tips on staying warm this winter, visit our page on dressing for the cold.

Supervise children in the cold. Frostbite, hypothermia and other cold-weather injuries can come on in minutes. If children are excited about playing outside, it is easy for them not to notice minor discomforts and the first signs of cold-weather injury. If a child is shivering, it is time to head back inside. Older children, teens

and others participating in outdoor winter activities should be encouraged to use a "buddy system" to look for early signs of frostbite in each other.

### Frostbite

Frostbite occurs when body tissues freeze causing cell death. First, the water around the cells freezes and then the cell is cut off from its oxygen supply. Exposed skin and extremities such as fingers and toes, nose, ears and cheeks are most commonly affected. Frostbite can be superficial, meaning it only affects the skin, or deep, meaning it affects body tissues below the skin. Frostbite can be an emergency; if not treated it can lead to severe injuries and even loss of digits or limbs.

### Signs of frostbite

At first, a child with superficial frostbite will feel burning, numbness, tingling, itching or cold sensations in the affected area. This area may appear white or more pale than usual.

If you press on the skin, it should depress more or less as usual. As frostbite gets worse and becomes deep, the sensations will decrease and may disappear. The area will swell and the skin will appear white and waxy. The affected area will also be hard and will not depress if you press on the skin. It may be difficult to move the affected area. For example, the person might feel like their fingers or feet are clumsy. In addition, blisters filled with blood or fluid may develop.

In very serious cases, the skin will go black. In mild or moderate cases of frostbite the skin may become quite painful after it rewarms and even peel. An area of skin that has been frostbitten is more likely to be affected again.

### Treating superficial frostbite

Get warm. Move indoors or somewhere warm to prevent further heat loss. If your child's feet are frostbitten, carry your child somewhere warm to prevent tissue damage. Elevate the affected area.

Give your child warm, non-caffeinated fluids to drink. If no warm drinks are available, have your child sip water.

Remove wet clothing and anything that may limit blood flow.

Do not rub the affected area. Do not heat the area with anything hot enough to burn the skin. Constant warming is best. Wrap your child in a blanket in a warm room. You can also use your own body heat to warm the area. For example you can tuck the child's affected body part under your arm pit for rewarming. Try rewarming the area by placing it in warm water. Make sure that the water is NOT hot.

As the affected area warms and the skin colour returns to normal, it may be a little painful.

### Treating deep frostbite

If your child has deep frostbite, call or go see a doctor right away. Use all the treatment measures described above.

Do not start warming the affected area if the warming cannot be continuous. Thawing and refreezing will increase tissue damage. Only thaw when you are sure that the area will no longer be exposed to the cold.

If the fingers or toes are affected, apply a dry bandage between them to avoid rubbing. Your child will be in pain as the affected area thaws and blood flow returns. It will begin with a dull ache and may turn into a throbbing pain. Depending on the severity of the frostbite, this may last for several days. The affected area may turn purple or blue as it rewarms.

The amount of tissue damage may not be known for some time.

## Hypothermia

Hypothermia happens when the body's core temperature drops below normal. It is a life-threatening medical emergency. Hypothermia is more common among small children and the elderly.

### Signs of hypothermia

Hypothermia means the body temperature has fallen below 35°C (95°F). When the body is this cold, the brain is affected and clear thinking becomes difficult. People with hypothermia are often confused and disoriented. This makes the condition even more dangerous because they may not notice that anything is wrong.

Symptoms include:

- shivering (until hypothermia becomes severe and then the shivering stops)
- clumsiness

- tiredness
- memory loss and confusion
- slurred speech
- pale skin; blue hands and feet
- breathing fast

## Treating hypothermia

Hypothermia needs immediate action. If your child shows any of the signs listed above, move to a warm place and call for help. If you can, take your child's temperature. If it is below 35°C (95°F), the situation is an emergency. Go see a doctor immediately or call 911 for help.

If medical care is not available, or if you are waiting for help to arrive, begin warming your child, as follows:

- Get your child into a warm room or shelter.
- Remove any wet clothing.
- Warm the centre of the body first — chest, neck, head and groin — using an electric blanket, if available. Or use skin-to-skin contact under loose, dry layers of blankets, clothing, towels, or sheets.
- Give your child sips of a warm beverage. This can help increase the body temperature.
- After their body temperature has increased, keep your child dry and wrapped in a warm blanket, including the head and neck.

A person with severe hypothermia may be unconscious and may seem not to have a pulse or to be breathing. In this case, handle the person gently, and call 911 immediately. Even if the person does not appear to be breathing, someone should give CPR. CPR should continue

while the person is being warmed, until they respond or medical aid arrives.



## Dehydration

Dehydration is a lack of water in the body. People tend to think of dehydration as a heat-related issue. However, dehydration occurs very quickly and easily in cold temperatures. People frequently do not notice dehydration and may not feel thirsty in the cold.

Always make sure children drink plenty of warm fluids to help the body maintain its temperature. If hot drinks are not available, drink plenty of plain water. Make children drink water before going out into the cold. Encourage children sip water even if they do not feel thirsty.

## Signs of dehydration

- restlessness, drowsiness and irritability
- cold or sweaty skin
- low energy levels, feeling weak or limp
- no tears when crying
- dry sticky mouth and/or tongue

- sunken eyes or sunken soft spot (fontanel) on baby's head
- smaller amounts of urine (pee), no urine over eight to 12 hours, or dark-coloured urine

### Treatment of dehydration

Begin with sips and gradually increase the amount of liquid. In addition to water, dehydration also includes a loss of salt and sugar. If possible, give your child an oral rehydration solution such as Pedialyte, Gastrolyte, Enfalyte or other brands containing a properly balanced amount of water, sugars, and salts. If you have an older child or a teenager, then you can give them a sports drink.

If your child is unresponsive, go see a doctor right away.

### Snow blindness

Snow blindness is an overexposure to ultraviolet (UV) rays to the eyes. In the winter, snow blindness is most often caused by exposure to the sun's rays reflected off snow. Even with no direct sunlight, snow blindness can still occur. You can easily prevent this condition by wearing a good pair of sunglasses.

### Symptoms of snow blindness

- pain and discomfort from bright light
- tears and eyelid twitching
- small constricted pupils

### Treatment of snow blindness

Remove your child from the light source. Take your child to the doctor if symptoms do not go away.