Frostbite

What is frostbite?

Frostbite is an injury caused by freezing of the skin and underlying body tissues. The most common body parts to get frostbite are toes, feet, fingers, hands, nose, and ears.

How does it occur?

Frostbite occurs when part of your body is exposed to temperatures or wind chills below freezing, causing the temperature of the body part to drop below freezing. The skin and body tissues just below the skin become frozen and the blood flow decreases.

What are the symptoms?

Frostbitten skin may:

- be hard, pale (white or blue), and cold
- tingle
- feel numb
- blister or turn black in severe cases.

How is it diagnosed?

Your health care provider examines the injured part and looks for signs of frostbite.

What is the treatment?

If medical help is not available, find shelter and begin rewarming the frostbitten skin right away. If your gloves or socks are wet, remove them. You can warm and thaw the frostbitten skin with one of these methods:

- Place your hands under your armpits or your feet against a warm person's belly.
- Dry and cover the area with warm clothes and then layers of blankets.
- Immerse the area in warm water (about 105 degrees F, or 40 degrees C).

Rewarming takes up to an hour and can be painful. You may take acetaminophen, ibuprofen, or aspirin for the pain. Cover the thawed area, which may become blistered, with a clean bandage or cloth.

Drink hot fluids such as coffee or tea. Never drink alcohol or smoke during the rewarming. Never rub or put snow or intense, direct heat on the frostbitten areas. If your feet or toes are frozen, do not walk on them. Once frostbitten areas are rewarmed and thawed, it is important that they not get frozen again because worse tissue injury will occur.

If the frostbitten areas do not look normal after thawing, go to an emergency medical facility at once. Treatment may include:

- a shot of a strong pain reliever
- hyperbaric oxygen (oxygen at greater than normal atmospheric pressure) given in a special chamber to deliver high levels of oxygen to frostbitten tissues.

Sometimes body parts that have had severe frostbite may need to be amputated.

How long will the effects of frostbite last?

Full recovery from frostbite is likely if just the skin and uppermost tissue layers were affected. However, it may take some time for frostbitten areas to get full sensation and strength back. Sometimes, numbness at the tips of fingers or toes does not improve. A body part that has been frostbitten will get colder faster than other parts in the future.

You may not know the full extent of damage to frostbitten areas for about 6 weeks. Permanent damage may result when blood vessels are injured. Tissues then die because of the lack of oxygen, and the dead tissue can become infected. If you have gangrene, which can be fatal, the dead area may have to be amputated. However, amputation does not have to be done in every case. Often the blackened areas of severe frostbite heal if they are cared for properly under medical supervision.

What can I do to help prevent frostbite?

You can best prevent frostbite by being prepared and dressing appropriately. Be sure your clothing provides protection for your head, ears, nose, hands, and

feet. Wear several layers of clothing rather than a single, thick layer. The best materials for layers provide good insulation and keep moisture away from the skin. Materials that do this include polypropylene, polyesters, and wool. Wear an outer garment that is waterproof but will also "breathe," such as Gore-Tex.