



State of Minnesota
The Office of Ombudsman for
Mental Health and Developmental Disabilities
FROSTBITE MEDICAL ALERT



This Medical Alert is based on the work of the Office of Ombudsman for Mental Health and Developmental Disabilities Medical Review Subcommittee and should be posted prominently. The Office of Ombudsman for Mental Health and Developmental Disabilities works to improve the services provided to people with disabilities by communicating important information found in the Medical Review Subcommittee's reviews of deaths and serious injuries. Thank you for promptly reporting deaths and serious injuries. You are helping us to meet our mission.

Prevention

Be aware of the temperature including the wind chill factor. (Refer to the accompanying Wind Chill Chart.) Wear several layers of warm clothing, as well as protection against dampness and wind.

Keep hands and feet dry

Wear clothing that protects you well against the cold. Cover exposed skin. In cold weather, wear mittens (not gloves); wind-proof, water-resistant, layered clothing; 2 pairs of socks; and a hat or scarf that covers the ears (to avoid heat loss through the scalp).

Make sure boots and mittens do not restrict circulation

Although anyone who is exposed to freezing cold for a prolonged period of time can get frostbite, people who are taking beta-blockers, which decrease the flow of blood to the skin, are at greater risk. So are people with peripheral vascular disease (a disorder of the arteries). Other things that may increase the risk of frostbite include: smoking, windy weather (which increases the rate of heat loss from skin), diabetes, peripheral neuropathy, and Raynaud's disease [<https://medlineplus.gov/raynauds-disease.html>].

If you expect to be exposed to the cold for a long period of time, do not drink alcohol or smoke. Make sure to get enough food and rest.

If caught in a severe snowstorm, find shelter early or increase physical activity to maintain body warmth.

What To Look For

- Pins and needles feeling, followed by numbness
- Hard, pale, and cold skin that has been exposed to the cold for too long
- Aching, throbbing or lack of feeling in the affected area
- Red and extremely painful skin and muscle as the area thaws

Very severe frostbite may cause:

- Blisters
- Gangrene (blackened, dead tissue)
- Damage to tendons, muscles, nerves, and bone

Frostbite may affect any part of the body. The hands, feet, nose, and ears are the places most prone to the problem.

- If the frostbite did not affect your blood vessels, a complete recovery is possible.
- If the frostbite affected the blood vessels, the damage is permanent. Gangrene may occur. This may require removal of the affected body part (amputation).

A person with frostbite on the extremities may also be subject to hypothermia (lowered body temperature). Check for hypothermia and treat those symptoms first. Please see the accompanying Hypothermia Alert and contact the client's health care provider or call 911.

What To Do

- Get the victim out of the cold and to a warm place.
- Remove tight jewelry and wet clothes.
- If you can get quick medical help, wrap the suspected frostbitten areas in sterile dressings. Separate affected fingers and toes. Transport the person to an emergency department for further care or call 911.
- If medical help is not nearby, you may give the person rewarming first aid. Soak the affected areas in warm (never hot) water -- for 20 to 30 minutes. For ears, nose, and cheeks, apply a warm cloth repeatedly. The recommended water temperature is 104°F to 108°F (40°C to 42.2°C). Keep circulating the water to aid the warming process. Severe burning pain, swelling, and color changes may occur during warming. Warming is complete when the skin is soft and feeling returns.
 - Apply dry, sterile dressings to the frostbitten areas. Put dressings between frostbitten fingers or toes to keep them separated.
 - Move thawed areas as little as possible.
 - Refreezing of thawed extremities can cause more severe damage. Prevent refreezing by wrapping the thawed areas and keeping the person warm. If protection from refreezing cannot be guaranteed, it may be better to delay the initial rewarming process until a warm, safe location is reached.
 - If the frostbite is severe, give the person warm drinks to replace lost fluids.

DO NOT rewarm if there is any chance of refreezing.

DO NOT use direct dry heat (such as a radiator, campfire, heating pad, or hair dryer) to thaw the frostbitten areas. Direct heat can burn the tissues that are already damaged.

DO NOT break any blisters.

DO NOT rub or massage the part since ice crystals can be pushed into body cells, rupturing them.

DO NOT rub with ice or snow.

DO NOT allow the victim to smoke since smoking constricts blood vessels impairing circulation.

Please report frostbite with blisters or the need for medical treatment to the Ombudsman Office as a Serious Injury.

Additional information is available at:

<https://medlineplus.gov/ency/article/000057.htm>