

FROSTBITE TREATMENT

Begin treatment by getting away from the cold. Do not rub the frozen area with snow.

- Move to a warm area to prevent further heat loss.
- Keep the affected part elevated in order to reduce swelling.
- Remove wet clothing. Treat frozen parts gently—don't rub them.
- Remove all constrictive jewelry and clothes because they may further block blood flow.
- Drink nonalcoholic, non-caffeinated fluids.
- Make sure to warm the entire body—not just the frostbitten parts. Wrap the rest of the body in blankets.
- Do not use dry heat—such as a fireplace, oven, or heating pad—to thaw frostbite.
- Place clean cotton balls between frostbitten fingers and toes to prevent rubbing.
- Do not break any blisters.
- Loosely wrap rewarmed areas with clean bandages to prevent refreezing.
- You may take *ibuprofen* for pain according to the package directions **if you are not allergic** to the medication.
- Seek health care for frostbite symptoms as soon as possible. A health-care provider must be able to see and feel the affected area.

THINK PREVENTION

Avoid serious conditions such as frostbite and hypothermia by keeping warm. What you wear can help you prevent cold-related health problems. You should wear:

- Loose-fitting, layered warm clothing
- A hat or hood as most heat is lost through the head
- A scarf or knit mask to cover face and mouth
- Sleeves that are snug at the wrist
- Mittens (they are warmer than gloves)
- Thick socks
- Water-resistant coat and boots
- Choose tightly woven clothing for your outer layer, preferably wind resistant, to reduce body heat loss caused by the wind.
- Wool, silk, or polypropylene inner layers of clothing will hold more body heat than cotton.
- Most important, **stay dry** as wet clothing chills the body rapidly.
- Excess perspiration will increase heat loss, so remove extra layers of clothing whenever you feel too warm.

Do not ignore shivering as it is an important first sign that the body is losing heat. Persistent shivering is a signal to return indoors.

Adapted from:

Health Tips for Cold Weather Safety, Indiana State Department of Health, 2009; *Frostbite*, eMedicine Health, WebMD, LLC. 2009; KidsHealth, Nemours Foundation.

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FROSTBITE



FAST FACTS:

- Often occurs on hands, feet, and face
- Causes an aching pain or numbness
- Causes skin to feel hard, with a white, waxy, or purplish appearance
- Tobacco smokers and people with diseases of the blood vessels are at increased risk



Hypothermia, Frostnip and Frostbite

Serious health problems can result from prolonged exposure to the cold. The most common cold related problems are hypothermia and frostbite.

HYPOTHERMIA occurs when people are exposed to cold temperatures. Your body begins to lose heat faster than it can be produced. Prolonged exposure to the cold will ultimately use up the body's stored energy. This results in *hypothermia* which is abnormally low body temperature. When your body temperature is too low, it affects the brain, making you unable to think clearly or move well. Hypothermia is particularly dangerous because you may be unaware it is happening and you won't be able to take protective measures.

FROSTNIP usually affects areas that are exposed to the cold, such as your cheeks, nose, ears, fingers, and toes. This is an irritation of your skin. You may experience burning, numbness, tingling, itching or cold sensations in the affected areas. It can be treated at home.

- Go indoors immediately.
- Remove all wet clothing. (Wet clothing draws heat from the body.)
- Immerse chilled body parts in warm (not hot) water for 20-30 minutes until all sensation returns.
- Have someone help you to keep the water temperature warm, not hot, as your numb hands/or feet won't feel the heat and you could be severely burned by water that is too hot.
- If sensation does not return or there are signs of frostbite, call or go to a health care provider.

FROSTBITE is an injury to the body that is caused by freezing. It is literally, frozen body tissue—usually skin but sometimes deeper. Your body works to stay alive first and to stay functioning second. In conditions of prolonged cold exposure, your body sends signals to the blood vessels in your arms and legs telling them to constrict (narrow). By slowing the blood flow to the skin, your body is able to send more blood to the vital organs, supplying them with critical nutrients, while also preventing a further decrease in internal body temperature by exposing less blood to the outside cold. The risk of frostbite is increased in people with reduced blood circulation and among people who are not dressed properly for extremely cold temperatures.

SIGNS AND SYMPTOMS:

- Numbness
- Waxy-feeling skin
- White or gray colored area of skin
- Skin feels hard
- Swelling and blood-filled blisters

If you experience the symptoms of frostbite, do not rub the area. Instead, get into a warm room as soon as possible. Gently warm the affected part of your body with comfortably warm (not hot) water, or place the affected area next to a warm part of your body, for example your armpit.



Never use a heating pad or other source of heat to warm frostbitten body parts as these areas are numb and can be easily burned. Seek care from a health care professional immediately.

There are a variety of frostbite classification systems. The easiest to understand and perhaps the one that gives the best clues to outcome, divides frostbite into 2 main divisions: superficial and deep.

Superficial frostbite is the same as *frostnip*. You may experience burning, numbness, tingling, itching, or cold sensations in parts of your body, exposed to the cold. The regions may appear white and frozen, but if you press on them, they retain some resistance.

In deep frostbite, there is an initial decrease in sensation that is eventually completely lost. Swelling and blood-filled blisters are noted over white or yellowish skin that looks waxy and turns a purplish blue as it re-warms. The area is hard, has no resistance when pressed on, and may even appear blackened and dead.

You will experience significant pain as the areas are re-warmed and blood flow is re-established. A dull continuous ache transforms into a throbbing sensation in 2-3 days. This may last weeks to months until final tissue separation is complete.

At first the areas may appear deceptively healthy. Most people do not arrive at the doctor with frozen, dead tissue. Only time can reveal the final amount of tissue damage.