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Frostbite is a treatable but potentially serious condition that affects the **skin**. It happens when a body part isn't properly covered when you're outside in freezing temperatures.

Just like water turns to ice when the temperature drops, your fingers, hands, toes, feet - even your nose and ears -- can freeze. Being further away from your core, they are the first organs affected by decreased blood flow in response to cold. How soon this happens depends on how cold and windy it is outside. It can happen faster than you may think. In severely frigid weather, **frostbite** can happen in just 5 minutes.

Get to know how to avoid it, the warning signs, and what to do if frostbite sets in.

What Are the Symptoms?

When it's cold out, exposed skin may get red or sore. This is called frostnip, and it's an early warning sign of frostbite. If this happens, find warm shelter quickly.

Symptoms of frostbite depend on how deep it goes into the body. There are three stages. Early frostbite affects the top layers of the skin. More advanced cases can go all the way through to the muscles and bones.

Early stage

- Skin turns a pale yellow or white
- It may itch, sting, burn, or feel like "pins and needles."

Intermediate stage

- Skin becomes hard
- It looks shiny or waxy
- When the skin thaws, **blisters** filled with fluid or **blood** form

Advanced stage

- Skin is very hard and cold to the touch
- Skin darkens quickly. It may look blue and later turn black

Some people don't know they have frostbite because as it gets worse, you can't feel the area anymore. That's why it's important to watch for changes in skin color.

How Can I Avoid Getting Frostbite?

Layer your clothing, loosely. Tight clothing raises your risk of frostbite. Instead, choose loose layers that allow body heat to get around.

You want three layers:

- The first should be of a material that helps keep you dry.
- The second goes over the first and should be made of an insulator like wool or fleece.
- The third should be worn on top and should be wind- and waterproof.

Make sure your hat covers your head and ears. Get yourself a wool or fleece one with ear flaps. This will keep your ears warm and protected.

Choose insulating mittens or gloves. Don't take them off to use your smartphone. If texting is a must, look for a pair with textured fingertips that allow you to swipe.

Don't skimp on socks or shoes. Feet are very vulnerable to frostbite. Layer a pair of wool socks over some that resist moisture. Wear warm, waterproof boots that cover your [ankles](#).

If you sweat, unzip, at least for a few minutes. Wet clothing -- either from snow or [sweating](#) -- makes you more likely to get frostbite. Make sure snow can't sneak inside your winter outfits.

First, get to a warm place. Don't rub your skin. That can damage it if it's frozen.

Resist the urge to place cold hands or feet in a tub of hot water. If your skin is numb, you may not be able to feel if the water is too hot. That could cause further damage. Instead, soak the affected hands and feet in warm water (104 F to 107 F), or place a washcloth with warm water on the affected areas that can't be submerged, like nose and ears, for at least 30 minutes.

Your skin should start to heal quickly. As it thaws, it may get red. You may also feel painful stinging or prickling sensations, like "pins and needles."

Go to the emergency room right away if you suspect frostbite. Some warning signs may include:

- Your skin color changes color or becomes hard.
- Your skin stays numb (you can't feel anything).
- You have severe pain as your skin thaws.
- Skin [blisters](#) start.

The hospital staff will try to warm you up, restore [blood](#) flow to the affected area, and prevent further damage. You may have:

- Warm sponges placed on your nose, ears, or other frozen body areas
- Pain medicine for [nerve pain](#) that may flare as the skin warms up
- Imaging tests, like an [MRI](#), to see how many layers of skin are damaged
- Dead skin scraped off

In extreme cases -- like if you have blackened skin tissue and blood flow won't come back -- you may need surgery to remove that area, so that other skin doesn't die. But there are treatments that may help you avoid that step.

Some studies suggest that [aspirin](#) or other [blood thinner](#) meds may help restore blood flow in body parts with severe frostbite if your doctor gives you them within 24 hours of rewarming. A treatment called hyperbaric oxygen therapy, in which you get 100% oxygen in a controlled setting, is also being studied as a possible treatment. So far, the results are mixed.

Frostbite occurs when the body's skin and internal tissues freeze due to exposure to extremely cold temperatures. Ice crystals form in the tissues as a result of continued exposure to cold temperature, and these ice crystals cause damage to the body's cells. Frostbite is most likely to occur in body parts that are located far away from the heart, such as the hands or the feet, as it takes the longest for blood to pump to these body parts.

If frostbite does occur, it is extremely important not to try to rewarm or treat the frostbitten area until absolutely certain that the tissues will not refreeze after being warmed. It is typically best to thaw frostbitten tissue no later than 24 hours after the initial injury.

Symptoms

Frostbitten tissue, such as skin, can be a variety of colors. It may look blue, red, white or even very pale. It often looks just like a burn from a fire. To the touch, frostbitten skin may feel waxy or especially hard. Victims of frostbite might not be able to feel the frostbitten tissue or properly move affected areas.

Many times, victims will not recognize the [symptoms of frostbite](#) until it is too late. Frostbite can result in the loss of limbs, ears, noses, and other body parts, and in some extreme situations, even death.

Below are several steps to dealing with and helping a frostbite victim. It is important not to subject yourself to potential frostbite while helping another individual.

1. Most importantly, stay safe! It's important to make sure that no one else is injured by the cold. Only help a victim of frostbite if you can do so safely. Follow [universal precautions](#) and wear personal protective equipment if you have it.
2. Remove the victim from the cold as soon as possible. *DO NOT* attempt to thaw frostbitten tissues if there is a possibility they could freeze again.
3. Fill a shallow container with enough water to cover the frostbitten body part. The water should be about 98 to 105 degrees (normal body temperature or a little warmer).
4. Continue to refresh the water in the container as it cools. Keep the water at the same temperature as consistently as possible, as it must remain warm. It should take about half an hour to thaw the frostbitten tissue this way.
5. As soon as feasible, get the victim to medical assistance, even after thawing frostbite.

1. *DO NOT* allow thawed tissue to freeze again. The more often tissue freezes and thaws, the deeper the damage. If the victim will soon be exposed to freezing temperatures again, wait to treat frostbite.
2. *NEVER* rub or massage frostbitten tissue. Rubbing frostbitten tissue will result in more severe damage.
3. *DO NOT* use any heating devices, stoves, or fires to treat frostbite. Victims cannot feel the frostbitten tissue and can thus be burned easily.
4. In a pinch, body heat can be used to thaw mild frostbite or frostnip (tissues that are not quite frozen yet). For example, you can place mildly frostbitten fingers under the arm to keep warm.