Howard County
Health Department

Frostbite

What is frostbite?
Frostbite is what happens when exposure to severe, cold temperatures reduces blood flow and causes ice crystals to form inside body tissues, leading to serious, even permanent, damage. Frostbite can result in permanent nerve injury — primarily numbness or pain — and tissue destruction, even the loss of fingers or toes. Frostnip is a milder, reversible, cold-related illness that causes only temporary numbness and pain.

How common is frostbite?
Frostbite is not terribly common in Maryland. Most people are able to avoid really frigid weather. Many of the cases of frostbite that hospitals treat in emergency departments involve people who are homeless, intoxicated, have psychological illness, exercise poor judgment or don't take typical precautions.

Who is most at risk for frostbite?
The single most important contributing factor to the development of frostbite is behavior. The people who are most prone to develop frostbite are those who make bad decisions about things like exposure to the elements, clothing, or alcohol and drug use. Children and adolescents, who may be responding to peer pressure, and people with psychiatric illness are especially vulnerable. Seniors are at marginally greater risk for frostbite because they often have conditions, such as diabetes, atherosclerosis, anemia and others, that compromise good blood flow. Certain medications, especially those taken for heart disease or high blood pressure, can also play a role. Alcohol not only interferes with sound judgment, but also dilates blood vessels, leading to heat loss, and reduces sensation, a triple threat when it comes to cold-related illness.

How do you know you have frostbite, rather than simply having really cold body parts?
If the symptoms — numbness, pain and changes to skin color — do not improve despite re-warming for 15 to 30 minutes, seek medical attention. Frostnip is quickly reversible. With frostbite, the skin looks pale, thick and inflexible, and may even blister. In addition, the skin usually feels numb, although there may be minimal sensation to touch.

Does frostbite affect more than hands and feet?
Yes. Those body parts that are furthest from the core (the abdomen and chest) of the body, including the fingers, toes, nose, ears and chin, are most susceptible to frostbite.

What's the first thing you should do if you are experiencing frostbite?
Re-warming is the key to treatment. If you are outside, get indoors. If you can't get indoors, use adequate, dry clothing or try to position the affected body parts in a warm place, like under your armpits or between your thighs. If you think you have frostbite, do not rub the skin, because friction can lead to more damage. Warm, never hot, water is useful for treating frostbite.

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Should people avoid running their cold hands under hot water?
Yes. Hot water burns, especially in patients with frostbite, can produce further tissue destruction. Also, since your skin may feel numb when you have frostbite or frostnip, you could have trouble sensing just how hot the water is, causing even worse burns.

Do you always need to seek medical help?
Not always. If you really think you have frostbite, seek medical attention. But if your symptoms — pain, numbness, color changes — resolve as you warm up, you should not need to see a doctor.

Are you more likely to get frostbite if you've had it before?
Yes. The damage to tissues and blood vessels caused by frostbite does make you more susceptible to recurrent frostbite. Also, the behavioral issues that led to the first episode of frostbite may still be present.

Are there long-term problems associated with frostbite?
Yes. You may develop numbness to the skin and sensitivity to the cold. Severe frostbite can cause loss of the involved body tissue, e.g., tips of the nose, ears, toes and fingers.

What's the best way to prevent frostbite?
Avoid exposure to extremely cold weather. Layer your clothing and keep it dry. Use mittens rather than gloves. Cover your head, including your ears, with a warm hat, preferably wool. Use a scarf. Cover your face (e.g., with a balaclava/ski mask). Tight-fitting clothing, especially shoes, can cut off circulation, interfering with your ability to stay warm. Wear warm, water-resistant shoes or boots. Stay well-hydrated. Limit alcohol use. Don't smoke cigarettes, because nicotine further constricts blood vessels.