DECEMBER 2016

PRESS RELEASE

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FOR IMMEDIATE RELEASE

SERIOUSLY COLD

Don't let frostbite catch you off guard. Dress warmly to prevent it and know how to recognize frostbite symptoms.

When outdoor activities keep us outside for significant periods of time during extremely cold temperatures, danger of frostbite is a very real threat. Agricultural workers may be so busy with chores they don't realize how cold they are. That's because when body tissues freeze, numbness occurs, masking the seriousness of frostbite conditions.

"Frostbite often affects exposed skin, such as your nose, ears, cheeks, fingers and toes," Julie Garden-Robinson, North Dakota State University Professor and Extension Specialist, says. "When we first become cold, our skin turns pink or red. With prolonged exposure to cold temperatures our skin might turn white to yellowish. It may look or feel 'waxy.' Others who are looking at us may notice that our skin is white or a grayish yellow. That is a sign of frostbite."

The definition of extreme cold varies from one area of the United States to the other. In regions where winter weather is infrequent, temperatures around 32 degrees Fahrenheit can be considered extremely cold. A good measure of extreme cold is the point at which temperatures drop below normal and when wind speed is increased. In these conditions, heat can leave the body rapidly.

"Frostbite can be very dangerous, leading to infections and even amputations," Garden-Robinson says. "Cold temperatures can lead to hypothermia, an abnormally low body temperature, which is a medical emergency and requires care at a medical facility."

Hypothermia is usually caused by prolonged exposure to cold temperatures. Normal body temperature averages 98.6 degrees. With hypothermia, core body temperature drops below 95

degrees. In cases of severe hypothermia, core body temperature can drop to 82 degrees or even lower.

In cold temperatures, the balance between the body's heat production and heat loss becomes unbalanced, with heat loss exceeding heat production. If the imbalance is prolonged, hypothermia can occur. Lack of adequate warm, dry clothing can lead to accidental hypothermia. Depending on a person's age, body mass, body fat and overall health, hypothermia may occur in conditions some would recognize as mild.

"Hypothermia can occur when temperatures reach 40 degrees or lower, especially if a person becomes wet from falling into cold water, from rain or even sweating," Garden-Robinson says. "Age affects our susceptibility to cold. Older people and very young people are especially vulnerable to extreme cold. That would include a child helping a parent or a grandparent who works on the farm."

A frail, older adult in a 60-degree house after a power outage may develop mild hypothermia overnight. Infants and babies sleeping in cold bedrooms are also at risk. Health conditions such as diabetes and thyroid conditions, some medications, severe trauma or using drugs and alcohol all increase the risk of hypothermia.

Up to 90% of body heat escapes through our skin. The rest of the heat is exhaled through the lungs. Heat loss through the skin accelerates when skin is exposed to wind or moisture. When immersed in cold water, heat loss can occur 25 times faster than it would when exposed to the same air temperature.

The first symptoms of frostbite include redness and a stinging, burning, throbbing or prickling sensation which is followed by numbness. If these symptoms occur, go indoors immediately.

Shivering is a protective response to help produce body heat through muscle activity and is triggered by the brain's temperature control center, the hypothalamus. Vasoconstriction, temporary narrowing of blood vessels, is also a heat-preserving response.

Because the activity of the heart and liver produce most of our body heat and these organs produce less heat as core body temperatures cool, low body temperature can slow brain activity, breathing and heart rate. Confusion and fatigue can set in, hindering ability to understand what's happening and making the choice to get to safety.

"It's very important to get in a warm area to gradually warm up," Garden-Robinson says. "If your feet are affected, avoid walking. Don't rub affected areas because you could further damage your skin. If your feet have gotten wet and cold, remove your socks. In any case, be gentle with your skin."

If toes and/or hands are affected by frostbite, they should be soaked in warm (not hot) water because the numbness induced by frostbite reduces the ability to sense the water temperature,

which could result in burning the skin. Frostbitten fingers and toes should not be placed on direct heat, such as a radiator. If sensation doesn't return to the affected area or the skin begins turning gray, immediately seek emergency treatment.

"You can also warm up with a broth-based soup or warm beverage such as cocoa," Garden-Robinson says. "Avoid caffeinated beverages and alcohol-containing beverages because they may have the opposite effect in warming you."

Awareness of weather forecast and wind chill readings is important to frostbite preventions. During very cold, windy weather exposed skin can develop frostbite in just minutes.

Garden-Robinson recommends tracking the amount of time spent outside during cold temperatures. Dressing appropriately – in loose, light layers helps trap warm air. Warm socks, boots, stocking hats and scarves that cover exposed skin reduce the chance of frostbite. Wool and fleece are good insulators, holding in more heat than cotton. Top clothing layers should be windproof and water proof.

On a bitterly cold day, covering your face with a scarf or face mask warms the air you breathe and helps prevent frostbite on your nose and face. Making sure snow cannot easily get inside boots or clothing aids in staying dry and warm. If you start to sweat while outdoors, cut back on physical activity or unzip your jacket.

Heavy woolen or windproof materials make the best cold weather headwear. Hats or headbands should fully cover your ears. Mittens provide better protection from cold than gloves. A thin pair of glove liners made of a wicking material (such as polypropylene) under a pair of heavier gloves or mittens provides extra protection.

Socks and sock liners should fit well, wick moisture and provide insulation. Hand and foot warmers help, but foot warmers shouldn't make boots so tight that they restrict blood flow.

Eating well-balanced meals and staying hydrated also helps you stay warm. Even if you're not thirsty, drink at least one glass of water before heading outdoors. Exercise that gets blood flowing aids in retaining body warmth, but shouldn't be done to the point of exhaustion.

"Be sure you carry a winter survival kit in your vehicle in case you're snowed in somewhere if you're traveling," Garden-Robinson says. "The kit should include blankets, booster cables, tow rope, shovel, high calorie dried or canned food (and a can opener), a container of water, a can and matches (to melt snow for additional water), a flashlight and batteries."