

Dangers of Extreme Cold

Hypothermia:

When the body temperature drops below 96 °F. It can be fatal.

Warning Signs Include:

- Uncontrollable Shivering
- Memory Loss
- Incoherence
- Slurred speech
- Drowsiness

What To Do:

- Seek immediate medical attention!
- Warm the person slowly, starting with the body core, not the arms and legs.

Frostbite:

Damage to body tissue caused by extreme cold.

Warning Signs Include:

- Loss of feeling and a white or pale appearance in extremities such as fingers, toes, ear lobes, or the tip of the nose.

What To Do:

Seek medical attention!

Warm the person slowly. Use warm water (bath or moist towels). DO NOT use hot water or heater.

Did You Know?

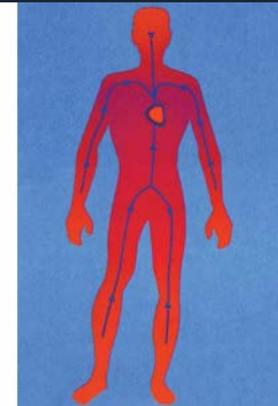
- 50% of injuries related to cold happen to people over 60.
- More than 75% happen to males.
- About 20% occur in the home.

For More Information:

- Visit <http://www.nws.noaa.gov/om/winter/cold.shtml>



Hypothermia occurs when the extremities are excessively cold (blue)



Improperly warming the body will drive cold blood from the extremities to the heart, leading to heart failure



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What is Wind Chill?

Wind Chill is how wind and cold feel on exposed skin. As wind increases, heat is carried away from the body at an accelerated rate, driving down body temperature.

Heat around our bodies with no wind



Heat escapes as wind speed increases



NWS Windchill Chart



| | | Temperature (°F) | | | | | | | | | | | | | | | | | | |
|------------|----|------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | Calm | 40 | 35 | 30 | 25 | 20 | 15 | 10 | 5 | 0 | -5 | -10 | -15 | -20 | -25 | -30 | -35 | -40 | -45 |
| Wind (mph) | 5 | 36 | 31 | 25 | 19 | 13 | 7 | 1 | -5 | -11 | -16 | -22 | -28 | -34 | -40 | -46 | -52 | -57 | -63 | |
| | 10 | 34 | 27 | 21 | 15 | 9 | 3 | -4 | -10 | -16 | -22 | -28 | -35 | -41 | -47 | -53 | -59 | -66 | -72 | |
| | 15 | 32 | 25 | 19 | 13 | 6 | 0 | -7 | -13 | -19 | -26 | -32 | -39 | -45 | -51 | -58 | -64 | -71 | -77 | |
| | 20 | 30 | 24 | 17 | 11 | 4 | -2 | -9 | -15 | -22 | -29 | -35 | -42 | -48 | -55 | -61 | -68 | -74 | -81 | |
| | 25 | 29 | 23 | 16 | 9 | 3 | -4 | -11 | -17 | -24 | -31 | -37 | -44 | -51 | -58 | -64 | -71 | -78 | -84 | |
| | 30 | 28 | 22 | 15 | 8 | 1 | -5 | -12 | -19 | -26 | -33 | -39 | -46 | -53 | -60 | -67 | -73 | -80 | -87 | |
| | 35 | 28 | 21 | 14 | 7 | 0 | -7 | -14 | -21 | -27 | -34 | -41 | -48 | -55 | -62 | -69 | -76 | -82 | -89 | |
| | 40 | 27 | 20 | 13 | 6 | -1 | -8 | -15 | -22 | -29 | -36 | -43 | -50 | -57 | -64 | -71 | -78 | -84 | -91 | |
| | 45 | 26 | 19 | 12 | 5 | -2 | -9 | -16 | -23 | -30 | -37 | -44 | -51 | -58 | -65 | -72 | -79 | -86 | -93 | |
| | 50 | 26 | 19 | 12 | 4 | -3 | -10 | -17 | -24 | -31 | -38 | -45 | -52 | -60 | -67 | -74 | -81 | -88 | -95 | |
| | 55 | 25 | 18 | 11 | 4 | -3 | -11 | -18 | -25 | -32 | -39 | -46 | -54 | -61 | -68 | -75 | -82 | -89 | -97 | |
| 60 | 25 | 17 | 10 | 3 | -4 | -11 | -19 | -26 | -33 | -40 | -48 | -55 | -62 | -69 | -76 | -84 | -91 | -98 | | |

Frostbite Times ■ 30 minutes ■ 10 minutes ■ 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph)

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- The colder the temperatures and stronger the wind, the quicker frostbite could set in on exposed skin.
- *Frostbite can occur within 30 minutes when the Wind Chill drops to 15 degrees below zero!*



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Cold Weather Preparedness Tips

In the Car

- ✓ Fully check your vehicle before traveling. Make sure your car battery has enough power and your car is filled with antifreeze.
- ✓ Keep your gas tank near full to prevent ice from forming in the fuel lines.
- ✓ If you are planning travel, carry a winter storm survival kit:
 - ✓ Blankets
 - ✓ Flashlight
 - ✓ High-calorie snack foods
 - ✓ Jumper cables
 - ✓ A water container.
 - ✓ Make sure your cell phone is fully charged.

At Home

- ✓ Let faucets drip to prevent freezing water from causing pipes to burst.
- ✓ Make sure pipes are properly insulated and leave cabinet doors open around pipes to ensure they receive warmth from the air flowing through your home.
- ✓ Provide shelter for pets and check on elderly.
- ✓ Have a flashlight and extra batteries available. Avoid using candles since these can become a fire hazard.
- ✓ If you have a fireplace or wood stove, make sure you have a good supply of firewood. Learn to use any emergency heating sources properly to prevent a fire.



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Dressing for the Cold

- ✓ Wear loose-fitting, lightweight clothing in several layers.
- ✓ Remove layers to avoid perspiration and subsequent chill.
- ✓ Outer garments should be tightly woven, water repellent, and hooded.
- ✓ Wear a hat. Half of your body heat loss can be from the head.
- ✓ Cover your mouth to protect your lungs from extreme cold.
- ✓ Mittens, snug at the wrist, are better than gloves.
- ✓ Try to stay dry.

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