

Technology Transfer Brief



Precautions to avoid hypothermia

Prolonged exposure to freezing or cold temperatures can result in health problems such as trench foot, frostbite and hypothermia. Workers exposed to the cold need to be especially mindful of its effects on the body, proper prevention techniques and treatment of cold-related disorders.

Causes

Cold is the most common cause of hypothermia. Chilled air cools down the body. You also can become hypothermic at temperatures above freezing if you are exposed to a combination of factors such as a cold wind along with wet clothing.

If you work where there is a wind chill, your head, the sides of your chest and your groin are areas of your body that are especially vulnerable.

Clothing that is wet from sweat or precipitation speeds up the heat loss from the body.

Fatigue also will increase your vulnerability to the risk of hypothermia.

SYMPTOMS	
37° NORMAL BODY CORE TEMPERATURE	32° SEVERE HYPOTHERMIA Shivering stops. Collapse.
36° FEEL COLD Still alert and able to help oneself. Numbness in legs and arms.	31° Semi-conscious.
35° MILD HYPOTHERMIA Shivering.	30° CRITICAL HYPOTHERMIA Unconscious. No response to pain. Skin cold. May be blue/grey in colour.
34° Clumsy, irrational, confused. May appear drunk. Slurred speech. Denies problem.	29° Slow pulse and breathing. May be difficult to detect.
33° MODERATE HYPOTHERMIA Muscle stiffness.	28° CARDIAC ARREST No obvious pulse or breathing. Pupils dilated. May appear dead.

Graphic provided by: WaterSafety.org <http://www.watersafety.org.nz/goodadvice/hypothermia.asp>

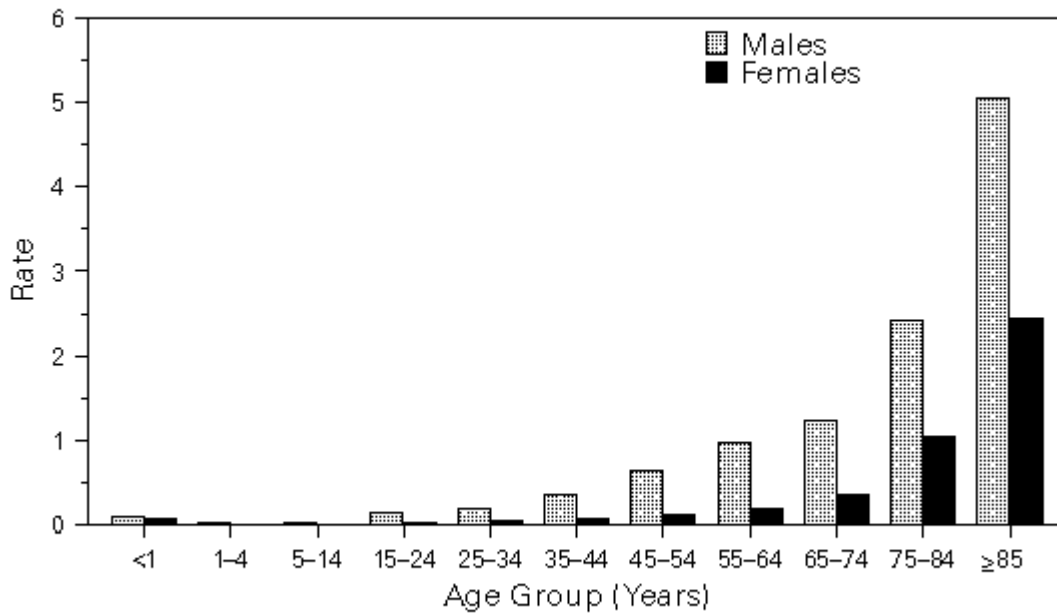
Care

Hypothermia can occur even on a mild winter's day or on a damp day in fall or spring. Proper clothing and adequate insulation work together to trap the warm air around the body.

Wear warm head covering. Up to 50 percent of your body heat is lost through the head.

Wear layered clothing. The first layer of clothing should allow the skin to breathe by permitting sweat to escape. Underwear, socks and glove liners made of polypropylene or knitted silk allow sweat to escape from next to the skin.

FIGURE 1. Average annual death rate* for hypothermia, by age group and sex — United States, 1979–1994



*Per 100,000 population.

The second layer of insulating clothing should be one that absorbs perspiration but does not allow heat to escape. Wool is an ideal fabric because it will stay warm even when wet. It also comes in many thicknesses. You may wear two light sweaters, one on top of the other.

The third layer of clothing also should trap body heat as well as keep water or dampness out. Lightweight micro fibers that trap heat are ideal, provided they are waterproof.

Protect your feet and hands. Wear waterproof boots. If possible, wear mittens, they warm the hands more effectively than gloves.

Drink plenty of non-alcoholic fluids. Doing this will help prevent dehydration and exhaustion, which can lead to hypothermia. Heated drinks can be helpful but limit your intake of coffee and tea.

Pace yourself during vigorous activity. Take regular breaks to get away from the cold. Don't let yourself become weakened through fatigue. People who are fit are less prone to hypothermia.

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