



## **Causes of Cold Stress**

An individual gains body heat from food and muscular activity and loses it through convection, conduction, radiation and sweating to maintain a constant body temperature. When body temperature drops even a few degrees below its normal temperature of 98.6°F (37°C), the blood vessels constrict, decreasing peripheral blood flow to reduce heat loss from the surface of the skin. Shivering generates heat by increasing the body's metabolic rate.

The four environmental conditions that cause cold-related stress are low temperatures, high/cool winds, dampness and cold water. Wind chill, a combination of temperature and velocity, is a crucial factor to evaluate when working outside. For example, when the actual air temperature of the wind is 40°F (4°C) and its velocity is 35 mph, the exposed skin receives conditions equivalent to the still-air temperature being 11°F (-11°C)! A dangerous situation of rapid heat loss may arise for any individual exposed to high winds and cold temperatures.

### **Major Risk Factors for Cold Related Stresses**

- Wearing inadequate or wet clothing increases the effects of cold on the body.
- Taking certain drugs or medications such as alcohol, nicotine, caffeine, and medication that inhibits the body's response to the cold or impairs judgment.
- Having a cold or certain diseases, such as diabetes, heart, vascular, and thyroid problems, may make a person more susceptible to the winter elements.
- Being a male increases a person's risk to cold-related stresses. Sad, but true, men experience far greater death rates due to cold exposure than women, perhaps due to inherent risk-taking activities, body-fat composition or other physiological differences.
- Becoming exhausted or immobilized, especially due to injury or entrapment, may speed up the effects of cold weather.
- Aging -- the elderly are more vulnerable to the effects of harsh winter weather.









## Cold Stress & Related Illness-Assessment

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1) Check those that apply

The four environmental conditions that cause cold-related stress are

- \_\_\_\_\_ low temperatures
- \_\_\_\_\_ no personal protective equipment (PPE)
- \_\_\_\_\_ high/cool winds
- \_\_\_\_\_ Aging -- the elderly are more vulnerable to the effects of harsh winter weather.
- \_\_\_\_\_ dampness
- \_\_\_\_\_ cold water

Circle the appropriate answer

2) Wearing inadequate or wet clothing increases decreases the effects of cold on the body.

3) Medications such as alcohol, nicotine, caffeine, and medication that inhibits helps the body's response to the cold and improves impairs judgment.

4) Being a female male increases a person's risk to cold-related stresses.

5) \_\_\_\_\_ occurs when the skin tissue actually freezes, causing ice crystals to form between cells and draw water from them

6) \_\_\_\_\_ occurs when body temperature falls to a level where normal muscular and cerebral functions are impaired. While \_\_\_\_\_ is generally associated with freezing temperatures, it may occur in any climate where a person's body temperature falls below normal.

7) \_\_\_\_\_ is perhaps the most important step in fighting the elements is providing adequate layers of insulation from them. Wear at least three layers of clothing

8) **Safe** \_\_\_\_\_, such as changes in work schedules and practices, may be necessary to combat the effects of exceedingly cold weather.

9) Hypothermia commonly occurs in association with \_\_\_\_\_ abuse. In addition to its effects on judgment, \_\_\_\_\_ increases heat loss through vasodilatation and may impair shivering

10) Prevent chapped skin by the frequent application of protective \_\_\_\_\_.

## Key-Cold Stress & Related Illness-Assessment

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1) Check those that apply

The four environmental conditions that cause cold-related stress are

- \_\_\_\_\_ **low temperatures**
- \_\_\_\_\_ no personal protective equipment (PPE)
- \_\_\_\_\_ **high/cool winds**
- \_\_\_\_\_ Aging -- the elderly are more vulnerable to the effects of harsh winter weather.
- \_\_\_\_\_ **dampness**
- \_\_\_\_\_ **cold water**

Circle the appropriate answer

2) Wearing inadequate or wet clothing increases decreases the effects of cold on the body.

3) Medications such as alcohol, nicotine, caffeine, and medication that inhibits helps the body's response to the cold and improves impairs judgment.

4) Being a female male increases a person's risk to cold-related stresses.

5) Frostbite occurs when the skin tissue actually freezes, causing ice crystals to form between cells and draw water from them

6) Hypothermia occurs when body temperature falls to a level where normal muscular and cerebral functions are impaired. While hypothermia is generally associated with freezing temperatures, it may occur in any climate where a person's body temperature falls below normal.

7) Personal Protective Clothing is perhaps the most important step in fighting the elements is providing adequate layers of insulation from them. Wear at least three layers of clothing

8) Safe Work Practices, such as changes in work schedules and practices, may be necessary to combat the effects of exceedingly cold weather.

9) Hypothermia commonly occurs in association with **alcohol** abuse. In addition to its effects on judgment, **alcohol** increases heat loss through vasodilatation and may impair shivering

10) Prevent chapped skin by the frequent application of protective **lotions**.