

## TEST ANSWERS: COLD STRESS

The *BSO Plus Safety Topic* is a review designed from the BSO Plus agenda. This safety topic is your way to stay current on the safety information over the 3 years between BSO Plus and BSR.

1. When exposed to the cold, your body expends much of its energy in keeping your internal temperature warm. Which body parts are at the greatest risk for exposure?

- a. Feet and hands
- b. Toes, fingers, ears, and nose
- c. Torso, ears, and nose
- d. Torso and legs

**RATIONALE:** When the body reacts to cold environments it automatically protects your internal organs. Frostbite occurs when the skin tissue becomes damaged due to lack of blood flow. After prolonged exposure, your core loses heat faster than it can be generated, resulting in hypothermia. The toes, fingers, ears, and nose are at the greatest risk for exposure because they do not have a major muscle group for heat production.

2. Which of the following options are effective methods for protecting yourself from cold stress? (Circle all that apply)

- a. Wearing a warm hat
- b. Wearing several layers of clothing
- c. Consuming caffeinated beverages to boost your energy
- d. Assessing the air temperature, the wind speed, and the humidity level

**RATIONALE:** A hat can help prevent up to 50% of the body's heat loss while clothing layers trap heat close to the body. Caffeine contributes to dehydration, which affects the body's ability to function properly, and should be avoided. When exposed to cold temperatures you should avoid drinking alcohol. Alcohol increases blood flow to the outer layer of skin which leads to faster loss of body heat. Certain medications may prevent the body from generating heat normally.

3. Signs of frostbite include: (Circle all that apply)

- a. Reduced blood flow to hands and feet
- b. Numbness
- c. Tingling or stinging
- d. Loss of consciousness

**RATIONALE:** Frostbite is an injury that occurs when body tissue temperature falls below the freezing mark, either from lack of blood flow or from exposure to cold temperatures or contact with extremely cold objects (especially metal). The body tissues may be severely, even permanently, damaged from frostbite injuries.

4. If you are not shivering, then you can assume that your body has warmed up and you may continue working.

a. True

b. False

**RATIONALE:** Prolonged exposure to cold can lead to hypothermia, which can lead to symptoms of confusion and disorientation. A person in this state is unable to recognize what is happening to them, and they won't be able to take steps to protect themselves.

5. Workers do not need to consider “wind chill” when planning for work.

a. True

b. False

**RATIONALE:** Three conditions affect a person's response to cold: air temperature, wind speed, and humidity. When planning for work in cold environments all three factors must be assessed in order to limit exposure to extreme cold. “Wind Chill” is a still-air temperature that would have the same cooling effect on exposed human skin as a given combination of temperature and wind speed. It can be used as a general guideline for deciding clothing requirements and the possible health effects of cold.