

KSU Facilities Safety Bulletin

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Cold Stress

How cold is too cold?

When the body is unable to warm itself, cold related stress may result. This may include tissue damage and possibly death.

Four contributing factors:

- Cold Air Temperatures
- High Velocity Air Movement
- Dampness of the Air
- Contact with Cold Water or Surfaces

Wind chill is the combination of air temperature and wind speed. For example, when the air temperature is 40°F, and the wind speed is 35 mph, your exposed skin receives conditions equivalent to the air temperature being 11° F. While it is obvious that below freezing conditions combined with inadequate clothing could bring about cold stress, it is also important to understand that it can also be brought about by temperatures in the 50's coupled with some rain and wind.

What preventive measures should workers take?

Employers and employees must plan for work in cold weather. Keep the following recommendations in mind when working in cold environments:

November HSI/Vivid Course

All:

Cold Stress

Login with your KSU eid and Password:

<https://otis.osmanager4.com/KSU>

Protective clothing is the most important way to avoid cold stress. The type of fabric also makes a difference. Keep the following recommendations in mind when working in cold environments:

- Wear at least three layers of clothing. An inner layer of wool, silk or synthetic to wick moisture away from the body. A middle layer of wool or synthetic to provide insulation even when wet. An outer wind and rain protection layer that allows some ventilation to prevent overheating.
- Wear a hat or hood. Up to 40% of body heat can be lost when the head is left exposed.
- Wear insulated boots or other footwear.
- Keep a change of dry clothing available in case work clothes become wet.
- With the exception of the wicking layer, do not wear tight clothing. Loose clothing allows better ventilation of heat away from the body.
- Do not underestimate the wetting effects of perspiration. Oftentimes wicking and venting of the body's sweat and heat are more important than protecting from rain or snow.

Drink plenty of liquids. It is easy to become dehydrated in cold weather.

Control temperatures as much as possible.

Increase safety awareness with training. Disseminating vital information on cold stress recognition and treatment is important.

Source: [hsi.com](https://www.hsi.com)