



Cold and Inclement Weather



WE ARE THE ARMY'S HOME



Garrison Safety Office (GSO)
U.S. Army Installation Management Command

WARM-UP QUESTIONS

True or False?

- Frostbite damages blood vessels.
 - True ____ False ____
- You should rub frostbitten skin.
 - True ____ False ____
- It is better to dress in layers than to wear one warm sweater.
 - True ____ False ____
- If someone who has been shivering in the cold falls asleep, you should wake him/her.
 - True ____ False ____
- If you experience cold risks in your job, you may be able to make a complaint to OSHA.
 - True ____ False ____



Overview

- What are the dangers of working in cold weather?
- What should you watch for?
- What can happen if you don't take precautions?
- How can these conditions be treated?
- What is the best prevention?



Working in the Cold

- What is the body's response to cold?

Brrrrr!!



ENVIRONMENTAL HAZARDS

COLD WEATHER

Dress in layers & Limit exposed skin

Frostbite:

- Localized frozen tissue
- Do not rub area
- Limit motion
- Warm slowly

Hypothermia:

- Lowered body temperature
- Remove wet clothing
- Use dry blankets

Seek medical attention

How long will it take to get frostbite on exposed skin? "Wind Chill Factor"									
Wind Speed (mph)	Actual Air Temperature in Fahrenheit								
	40	30	20	10	0	-10	-20	-30	-40
10	34	21	9	-4	-16	-28	-41	-53	-66
20	30	17	4	-9	-22	-35	-48	-61	-74
30	28	15	1	-12	-26	-39	-53	-67	-80
40	27	13	-1	-15	-29	-43	-57	-71	-84
50	26	12	-3	-17	-31	-45	-60	-74	-88
60	25	10	-4	-19	-33	-48	-62	-76	-91
Frostbite Times									
30 Minutes				10 Minutes			5 Minutes		

Working in the Cold

Wind Chill



When the temperature is low and the wind is blowing, you need greater protection for your skin and body because wind increases the risk that your flesh will freeze

Hypothermia

- The body is unable to retain its core temperature

Frostbite

- Skin tissue freezes, blood vessels are damaged

Hypothermia

- When body temperature drops, the first symptoms are:
 - Shivering
 - Blue lips and fingers
 - Poor coordination



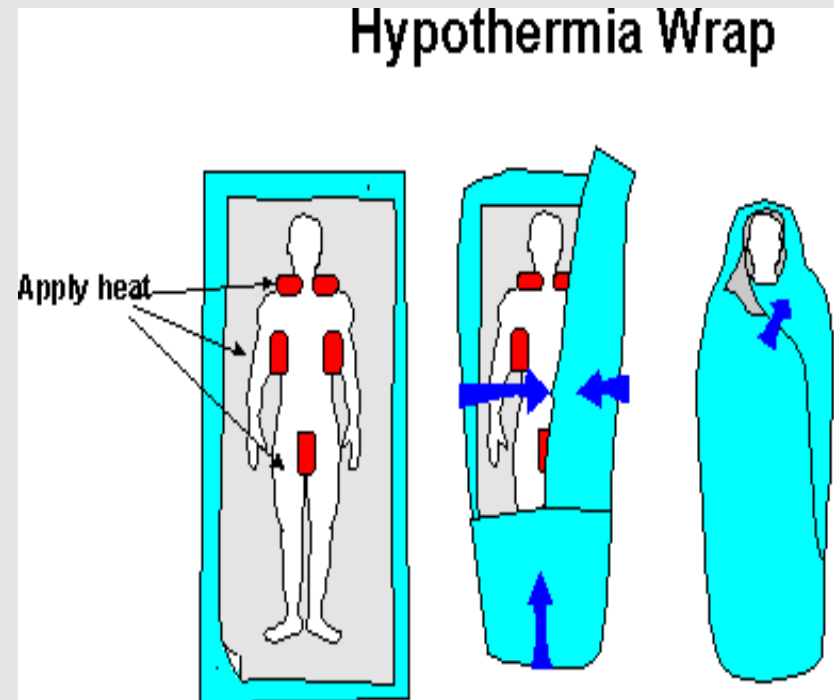
Hypothermia

- As body temperature continues to drop, symptoms worsen:
 - Confusion
 - Faulty thinking
 - Slower heartbeat
 - Shallow breathing
- In the worst cases, hypothermia causes:
 - Unconsciousness
 - Heartbeat may not be heard
 - No shivering
 - No detectable breathing
 - **Ultimately, death**



Hypothermia

- Treatment
 - Gently take the person to shelter – sudden movements may disturb heart rhythm
 - Keep the person awake
 - Remove wet clothing; wrap in warm blankets
 - Gradually warm neck, underarms, groin (NOT extremities)



Hypothermia

- Apply direct body heat
- If person is conscious, give warm, sweet drinks
- Monitor breathing; administer artificial respiration if necessary
- Get medical help as soon as possible (911)



Hypothermia

- Prevention

- Understand the dangers
- Take shivering people to shelter
- Avoid cold exposure if you have heart ailment, lung disorder, diabetes, prior cold injuries, etc.
- Eat high-calorie foods
- Drink soups and warm, sweet beverages
- Take regular breaks in a shelter
- Remove damp or wet clothing immediately



Prevention



- Clothing

- Workers showing any of these signs should immediately seek shelter:
 - Extreme shivering
 - Fatigue
 - Drowsiness
 - Irritability
 - Confusion
- Others should monitor their symptoms and get medical help if worker's condition worsens or fails to improve

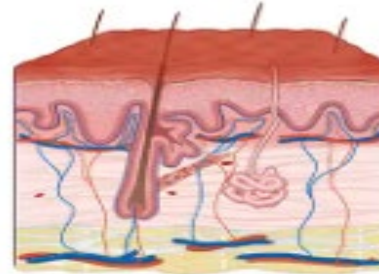


Frostbite

Frostbite

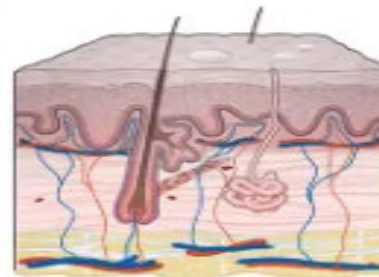
Stage 1: Frostnip

- Cold, sore and painful.
- Skin red and purple.



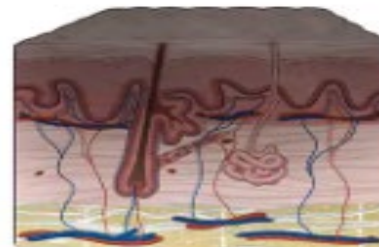
Stage 2: Superficial frostbite

- Pins and needles.
- Patches of peeling skin.



Stage 3: Deep frostbite

- Numbness.
- Hard, black skin forms.



Frostbite

- When skin is exposed to extreme cold, or is in contact with extremely cold items (especially metal), heat is lost or, in the latter case, transferred to the item
- Early symptoms include a prickling sensation, numbness, waxy appearance – not always pain



Frostbite



- Frostbite is most likely to affect your face, ears, fingers, and toes
- Left untreated, frostbite blackens and blisters the skin; may cause gangrene

Frostbite

- It's not pretty!



- You can lose your toes!



Frostbite

- Treatment



Frostbite

- People at Added Risk
 - Those who have had frostbite previously
 - Those with heart ailments
 - Those with asthma, bronchitis, or diabetes
 - Those with vibration/white finger disease
 - Those on certain medications (check with a health care practitioner)



Prevention

- Preventive Measures:

- Do not leave skin exposed



Prevention

- When possible:
 - Schedule outdoor work for warmer times of day
 - Reduce physical exertion in cold weather
 - Job-share to reduce length of time each worker is exposed
 - Have warm liquids available (not caffeine or alcohol)
 - Have a shelter nearby
 - Monitor co-workers' appearance & behavior
 - Keep blankets, matches, rain gear, extra clothes and emergency food supplies nearby
 - Share information about effects of cold exposure with co-workers



REVIEW

True or False?

- Frostbite damages blood vessels.
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ENVIRONMENTAL HAZARDS

COLD WEATHER

Icy driving

- Black Ice
- Other traffic
- **Slow Down!!**
- Be prepared
- Take your Time!!

