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## Fact Sheet: Frostbite

Frostbite is the term for tissue death associated with prolonged exposure to cold temperatures. Severe frostbite can cause so much tissue damage that amputation of extremities may be necessary.

### Symptoms

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- Skin turning red
- Stinging
- Numbness
- White blotches on skin

### Severe Symptoms

- Loss of joint function
- Black hardened tissue
- Complete numbness
- Blood filled blisters

### Prevention

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- Frostbite is best avoided by maintaining appropriate clothing and shelter.
- Pay attention to weather forecasts, and limit time exposed to cold, wet, and/or windy weather.
- Avoid tight clothing.
  - Dress in several layers of loose, warm clothing.
- Wear insulating clothing. Remember the phrase “Cotton Kills!” as clothing made from cotton does not provide insulation when wet, and can exacerbate cooling.
- Replace wet clothing with dry as soon as possible.
- Pay special attention to protecting hands, feet, face, and ears.
  - Wear a hat that covers the ears.
  - Wear mittens rather than gloves.
  - Wear socks that fit correctly and wick away moisture.
- Stay well hydrated and well fed.
  - Alcoholic beverages cause the body to lose heat faster.
- Never ignore numbness in cold weather.
- Try to keep moving, as exercise gets the blood pumping and helps to keep you warm.

## First Aid Treatment

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- Treatment is to warm up, if and only if, re-freezing will not occur, as re-freezing can cause more damage.
- Do not massage or rub the affected area, as this may mobilize ice crystals and do more damage.
- Warm the patient by moving the person to a warm area and by wrapping in blankets.
- After thawing, moderate frostbite may produce fluid filled blisters. After thawing severe frostbite, tissue turns black and hardens.
- Seek medical attention for severe symptoms.

## References and Additional Resources

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- Mayo Clinic [Frostbite](#)
- Adapted from *Frostbite Fact Sheet*, by University of Maryland: Department of Environmental Safety, Sustainability & Risk (<https://essr.umd.edu/about/research-safety/field-research-safety/planning>) with permission.