

# COLD HURTS

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Frostbite, Frostnip, and Immersion Foot



Published by Literacy Council of Alaska and  
University of Alaska Sea Grant College Program

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**Frostbite, Frostnip, and Immersion Foot**

Written by Christine Betz Hall

Illustrated by Jean Trainor

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## **About This Book**

This book has some do's and don'ts for frostbite, frostnip, and immersion foot. If you need more help, ask your doctor. The author and publishers are not responsible if someone is hurt after you follow guidelines in this book.

## **Author Biography**

Christine Betz Hall is Library Literacy Project coordinator for the Fairbanks North Star Borough, a former middle school English teacher, and a tutor of English as a second language. She works with the Literacy Council of Alaska training volunteer tutors to help adults improve reading, writing, and spoken English skills.

## Cold hurts

Everyone goes outside in the cold. You drive a car or snowmachine. You walk, sled, and ski. You get cold—cold toes, cold fingers, cold nose or ears.

Cold can hurt skin and under the skin.

It can happen in minutes, hours, or days.

If you feel pain, you may be getting a cold injury.



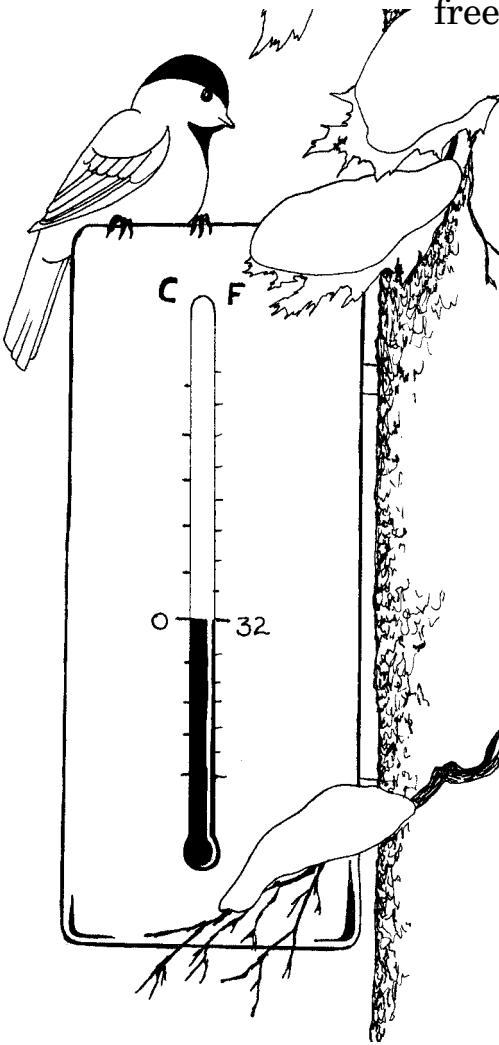
This book is about three cold injuries—frostbite, frostnip, and immersion foot (ee-MER-shun foot).

Read more to learn:

1. Causes of cold injuries.
2. How to know if you have a cold injury.
3. Help for cold injuries.
4. How to prevent cold injuries.

## How does cold hurt you?

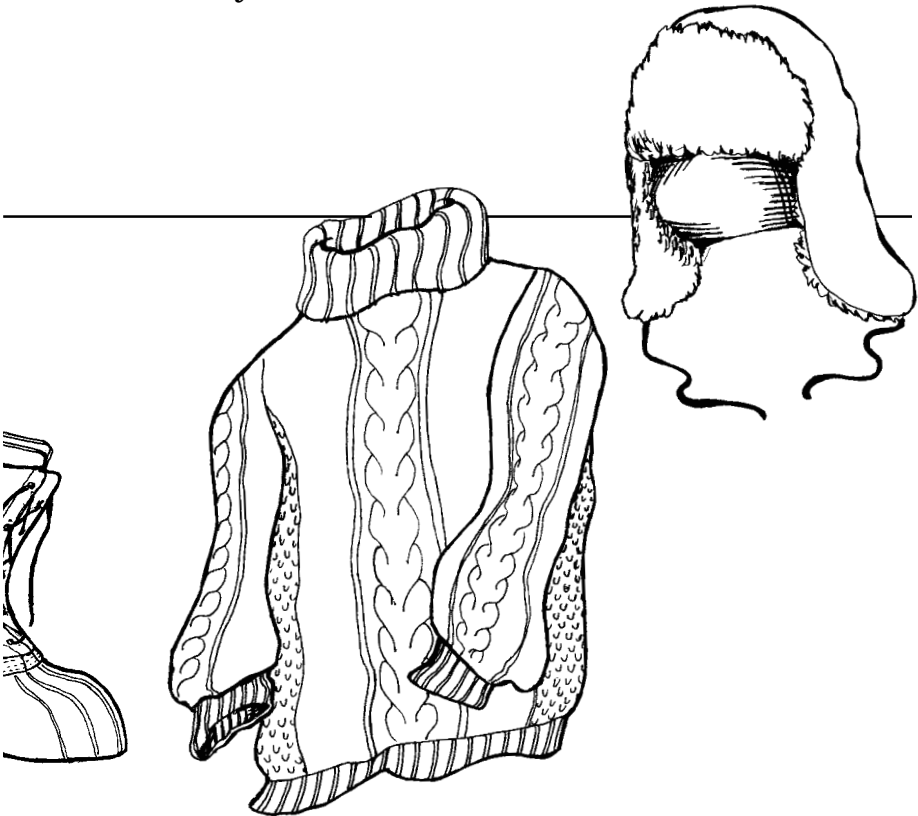
Maybe the weather is below freezing. If part of your body gets too cold, it can freeze. That is frostbite or frostnip. Cold injuries happen when the weather is above freezing too. Maybe your feet are wet and cold for many hours or days. You may have immersion foot. Your foot is not frozen. But you have a cold injury.



Your body loses heat in cold weather. Your blood moves more slowly. It stays warmest near your heart. Your feet and legs, hands, and arms are farthest from your heart. They get less warm blood. So they get cold first. They can freeze.



Your whole body can get too cold. Then you have hypothermia. Hypothermia can lead to frostbite, frostnip, and immersion foot. Prevent hypothermia to help prevent cold injuries. You must keep your whole body warm. You need to wear layers of warm clothes. Keep your clothes dry. Wear a hat, scarf, and mittens or gloves. Warm clothes keep your body heat close to you.



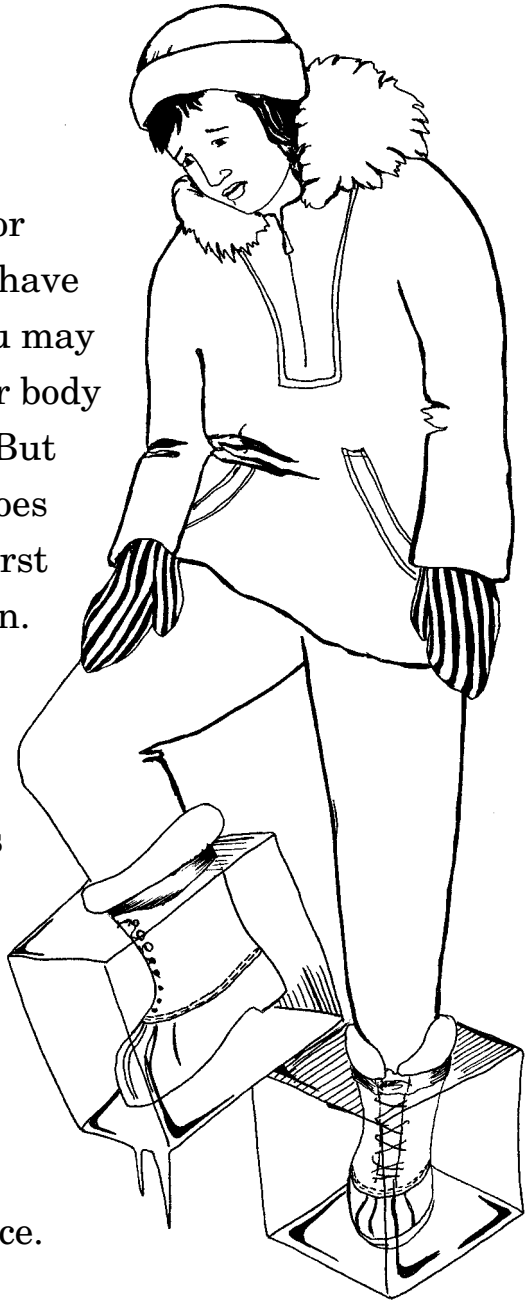


## **Warning**

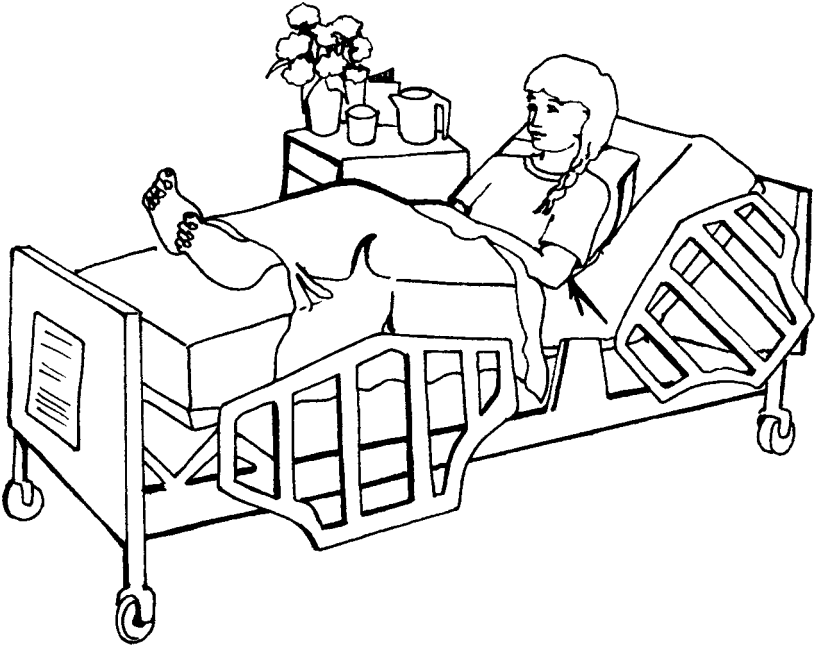
If you smoke, less warm blood goes to your arms and legs. If you drink alcohol, your body loses more heat. Also you cannot think well if you drink alcohol. You need to be able to think clearly if you have a cold injury.

## **This is frostbite**

Frostbite can happen quickly or slowly. You may have frostbite, but you may not know it. Your body may feel warm. But your fingers or toes can be frozen. First you may feel pain. Then you may feel nothing. The frozen part is numb. It looks white or pale. When you press, it is hard. The skin does not bounce back. It is like a rock or block of ice.



Frostbite causes deep damage. Healing is painful. Sometimes a doctor may have to cut off part of the body after frostbite. People can lose fingers or toes. Sometimes people lose a foot or leg.

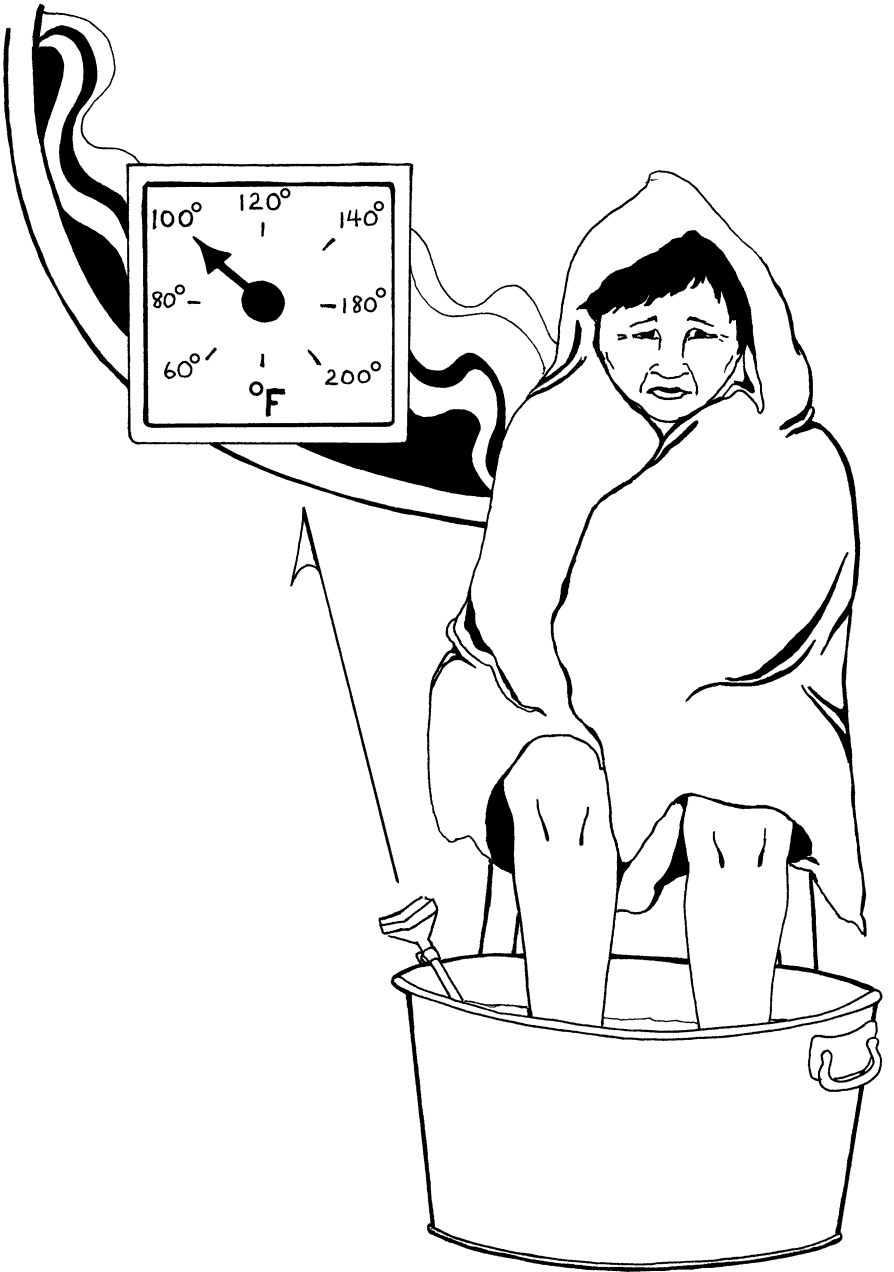


## Help for frostbite

Frostbite is serious. Go to a hospital or clinic as soon as you can. If you cannot get to a hospital, get to a warm shelter. You must thaw the frozen part in warm water when you are in a warm place.



Do not warm the frozen part if it will get cold again. You may have to walk or ride in a car, snowmachine, or helicopter. The trip may be cold. Freezing the part again will hurt more. You can walk on a frozen foot, but you cannot walk after your foot thaws.



## To thaw frostbite

1. **To thaw frostbite warm the whole body.** Wrap yourself in blankets or sleeping bags to help warm blood flow to the frozen part. Take off tight clothes, boots, socks, mittens, and gloves.
2. **Warm the frozen part quickly.** Put it in **warm** water (100°-105°F). Be careful. Test the water first with another part of your body. Hot water, fire, and dry heat will burn the hurt part. If the hurt part is numb, you will not feel the burn.
3. **Add more warm water.** The frozen part will make the water cold. Take out the frozen part to add more water. Be gentle. Do not bump the frozen part in the tub.



## **Do not**

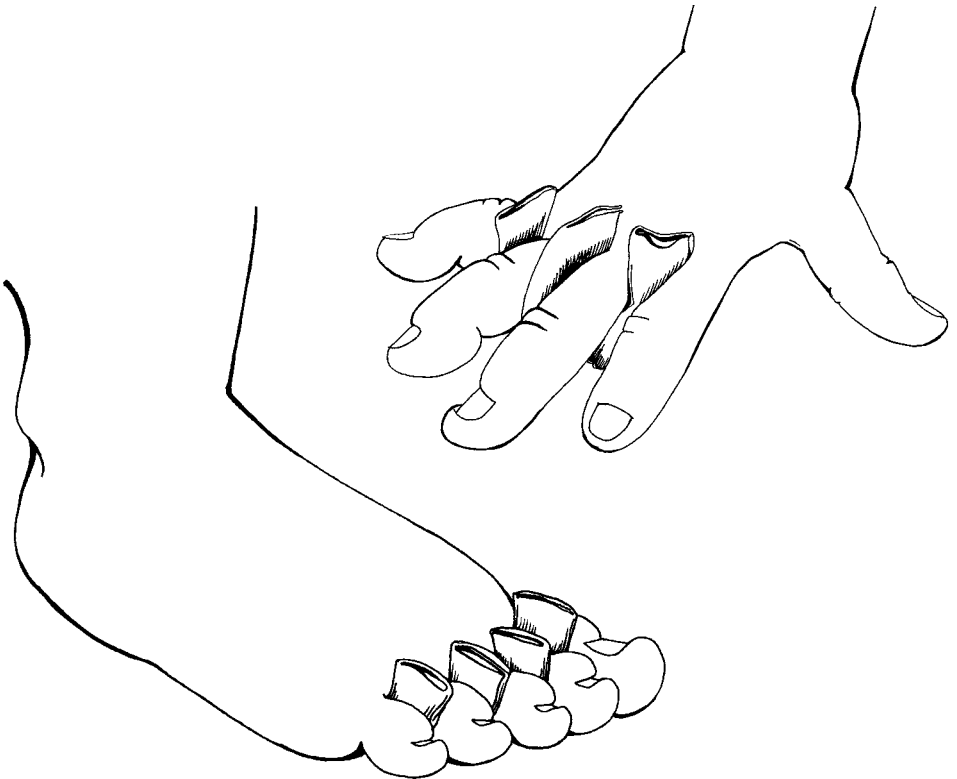
- **Do not** rub the frozen part with snow. Do not rub it at all. Be gentle.
- **Do not** warm the frozen part in front of an open fire, an oven, or any dry heat.
- **Do not** thaw the frozen part and let it freeze again! Wait to thaw it until you can stay warm.



## The thaw

Thawing can hurt. It will take 20 to 40 minutes. Stay warm after the thaw.

The hurt part must stay clean. It may have blisters later. Do not break the blisters. Put clean cotton between fingers or toes. Do not use the hurt part. Visit a doctor as soon as you can. The hurt part may be normal again in weeks or months.



## Frostnip

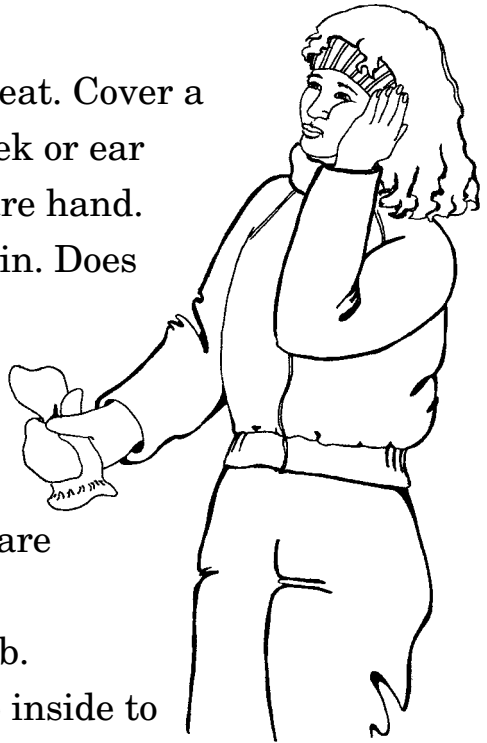
Frostnip is not as serious as frostbite. You have frostnip when only your skin freezes. Frostnip happens where your skin gets cold first. It happens on your cheeks, nose, ears, or fingers. The skin is red, then white. When you press, it is soft. The skin bounces back.

Frostnip is a warning. Frostnip can lead to frostbite. After frostnip, that part of your body may feel cold faster.



## Help for frostnip

1. Tell your friends if you see white on their cheeks, nose, or ears. Have them watch you for frostnip too.
2. Stop to thaw frostnip outside. Do not wait. Frost**nip** can become frost**bite**.
3. Use your body heat. Cover a frozen nose, cheek or ear with a warm, bare hand. Touch skin to skin. Does your hand have frostnip? Take off your mittens and put cold hands on your bare stomach.
4. Press. Do not rub.
5. It will help to go inside to get warm.
6. After frostnip, protect that part from cold. Cover the part from the wind.



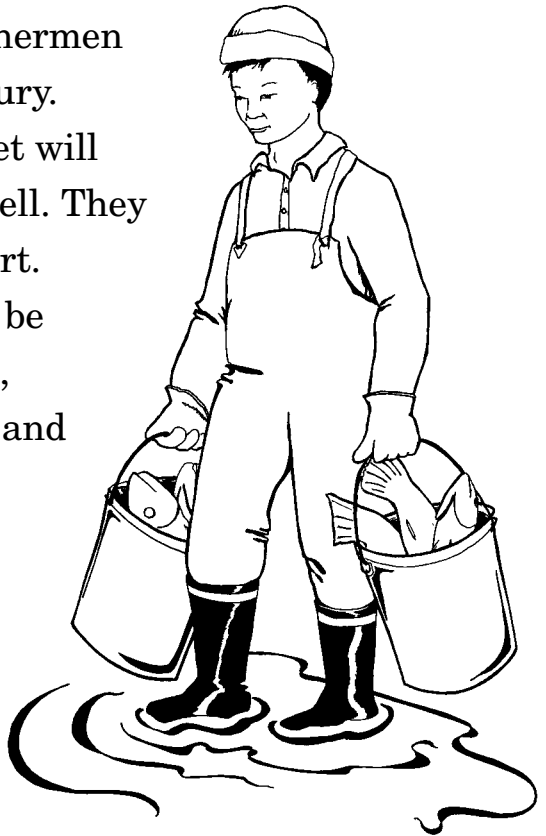
<b>Frostnip</b>	<b>Frostbite</b>
Often on face and ears.	Often on feet and hands.
Skin red, then white.	Skin white or pale—large areas may be purple.
Freezes skin—is soft when you press.	Freezes skin and under the skin—is hard when you press.
Little or no pain.	Pain, then no feeling.
Can cure yourself.	Need help from a doctor. Can lose fingers, toes, or more.

## Immersion foot

Maybe your feet have been wet and cold for hours or days. If the water is very cold, the injury happens quickly. The feet are not frozen. But they may be in danger. You may have immersion foot.

Immersion foot is also called trench foot. Some hunters and fishermen get this cold injury.

First your feet will look red and swell. They can tingle or hurt. Later they may be numb. The skin, under the skin, and the nerves are hurt. After immersion foot, your feet may feel cold sooner.





## Help for immersion foot

1. Stop walking and find a warm shelter.
2. Dry and warm your feet. And keep them clean.
3. Put them up high to reduce swelling.
4. Rest until you feel better.
5. If you need more help, talk with a doctor.



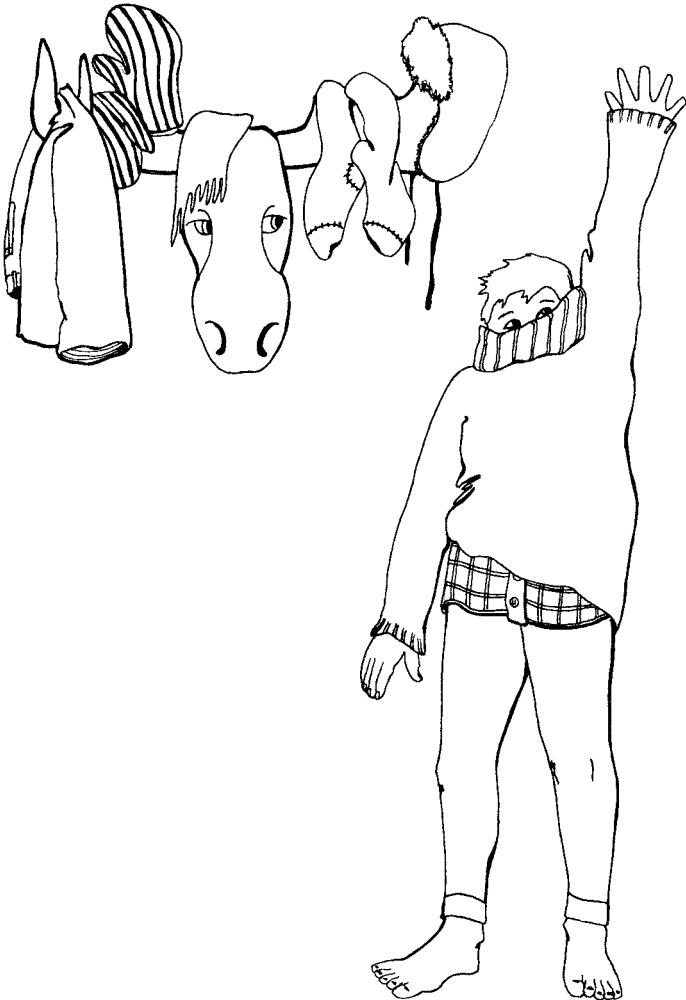
## Ready for cold!

Stop frostbite, frostnip, and immersion foot before they start!

1. **Keep your body warm.** Wear layers of clothes. Use wool, fur, or polypropylene (pol-ee-PRO-pi-leen).
2. **Wear loose fitting clothes and boots.** When clothes are tight, warm blood cannot go to feet and hands.
3. **Stay dry.** Take extra dry socks with you. Change socks or clothes if you get wet or sweaty.



- 4. Be dressed to walk when you ride—** in your car, on a snowmachine, in a plane, or on your dog sled. Wear good boots and socks. Or take them with you. You do not know when you may have to walk.



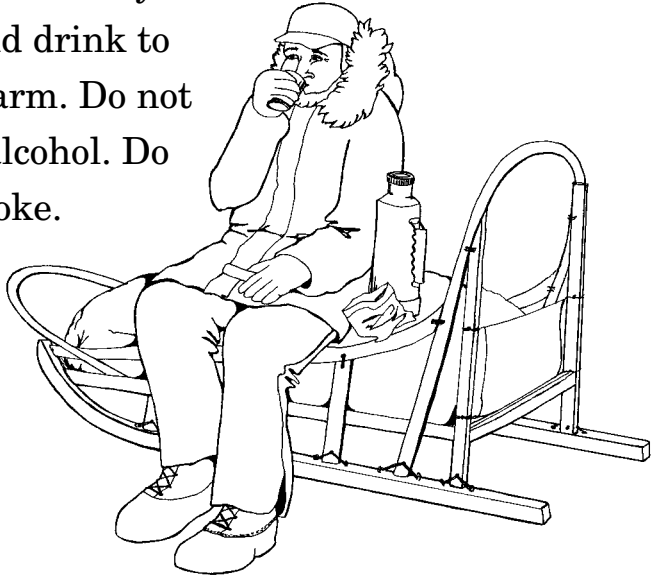
5. **In wind or on a fast ride wear a hat, mittens, and scarf or face mask.**

Wind makes you colder.

6. **Do not touch cold things with bare skin:** cold metal, cold gasoline, cold snow.

7. **Eat good food and drink water or juice.** Your body needs

food and drink to stay warm. Do not drink alcohol. Do not smoke.



8. **Do not be afraid to say you are too cold.** Go inside when you feel cold or if you feel pain.

## **Stay warm!**

You cannot stop the cold. But you can stop cold from hurting you. You can know what to do. Be safe and warm outside in the winter.



## Credits

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