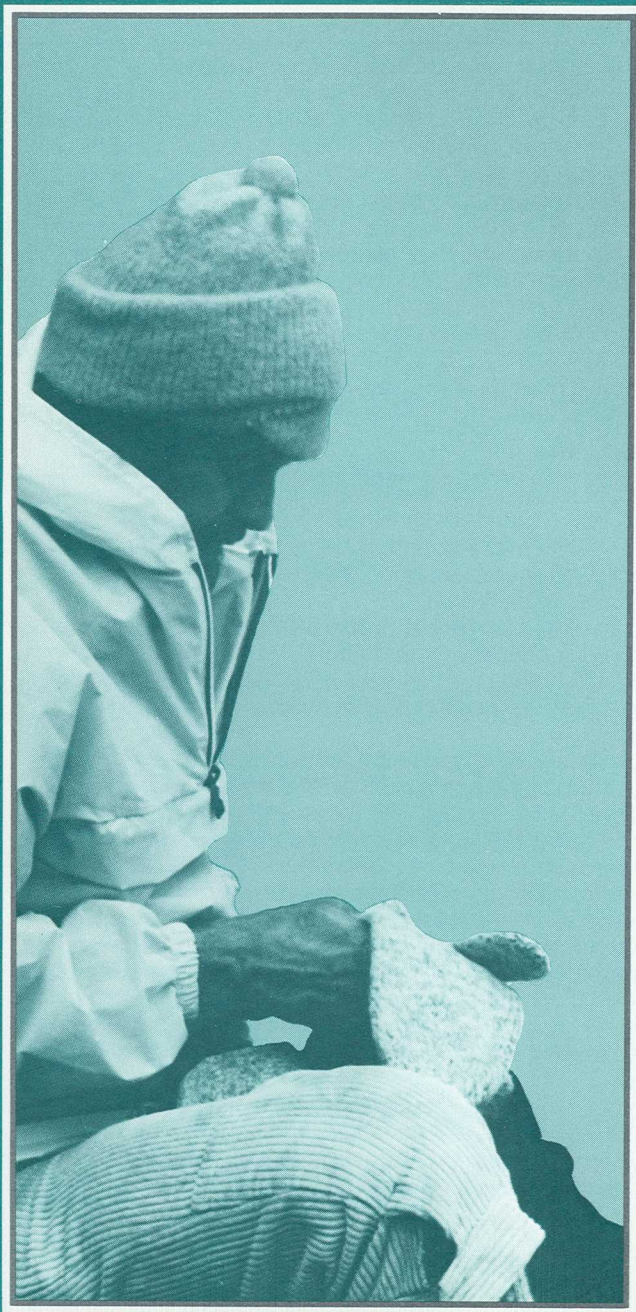


A Study Guide for the Film

# Winter Survival



National  
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## Introduction

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While outdoor recreation in winter offers fresh air, healthy exercise, and enjoyment of the natural environment, it also involves certain risks. One of the most serious of these is hypothermia, a condition in which unwary and unprepared people get too cold to function normally, and, unless treated promptly, may eventually die.

This film illustrates emergency treatment of a hypothermia victim, and indicates how hypothermia can be avoided. The study guide complements the film by outlining the basic facts about hypothermia, information applicable not only to skiers, mountaineers, snowshoers and snowmobilers, but also to backpackers, hikers, hunters, fishermen, and campers.

## Synopsis

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The film focusses on two incidents: a solitary snowmobiler loses the drive track of his machine and is stranded in the bush; a lone cross-country skier, hot and tired after several hours of strenuous exertion, becomes exhausted and collapses in the snow.

The snowmobiler is prepared for emergencies. He has previously notified a friend about this trip. He is warmly dressed and has a small pack of extra gear. He builds a shelter and lights a fire. Warm and dry, he calmly awaits rescue.

Dressed lightly, with no extra clothes for warmth or protection against the weather, the skier is a typical hypothermia victim — cold, wet, exhausted, and now unconscious. He is lucky to be found by a party of well-equipped skiers who recognize the symptoms of hypothermia and begin emergency treatment right away. To prevent further heat loss, the skier is moved into a tent and stripped of wet clothing. But dry clothes and sleeping bag are not enough to return the skier's temperature to normal. Covered by jackets and sleeping bags, two members of the rescue party huddle next to the skier in a sleeping bag, warming him through direct body-to-body contact.

Next morning, the snowmobiler emerges from his shelter to hail the arrival of his searching friend. After a long, slow re-warming process, the skier gradually returns to consciousness. In a short while he'll be able to travel, and will be taken to receive proper medical attention.

## Hypothermia

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Hypothermia occurs when a person's inner-body, or core temperature falls so far below normal (37°C, or 98.6°F) that vital organs can no longer function effectively.

At 33°C (91°F), shivering stops and the body cannot re-warm itself spontaneously. At 30°C (86°F), a person loses consciousness. At 27°C (81°F), signs of life are very difficult to detect, and a further drop of 2° or 3°C is usually fatal.

Hypothermia occurs most often in cold, wet, windy weather, but not exclusively in such conditions, and not necessarily in extremely cold or stormy conditions. In fact, most cases of hypothermia have occurred with the air temperature just above freezing.

The most common element in cases of hypothermia is a victim with unsuitable or inadequate clothing for changing weather conditions, or for emergencies. A light jacket and jeans may feel comfortable during vigorous exercise or on a sunny morning, but they provide little warmth and protection when the weather turns bad or when a person is immobilized by exhaustion or by an accident. Cold is intensified by wind and moisture. Wet clothes (apart from wool and some new synthetic materials) rapidly conduct heat away from the body, and the heat loss is accelerated by the chilling effect of even a moderate breeze. In these conditions the body cannot produce enough heat to keep warm and the core temperature begins to fall. The ability to produce heat is further diminished by physical exhaustion.

## Symptoms

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The onset of hypothermia is insidious. In bad weather, when people are cold, tired, and anxious, judgment is not as good as it is normally, and the early symptoms of hypothermia are not always obvious to oneself or to other members of a group.

In the first stage, people tend to become quiet and withdrawn, apathetic or unco-operative. They slow down, their movements are stiff and clumsy, and their speech is slurred. They may seem to be aware of what is going on, yet show little or no concern for the seriousness of the situation.

The amount of shivering varies from person to person, but when shivering stops, muscles become rigid, pupils are dilated, and the victim loses consciousness.

In the final stages, respiration is slow and shallow, pulse is slow and feeble, and it is hard to detect either.

## Treatment

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The immediate goal is to prevent further heat loss.

Shelter the victim from the cold and weather, e.g., move to the lee of trees or rocks; make a shelter with tree branches, poncho or tarp; dig a snow pit or cave; put up a tent.

Insulate the victim from the ground or snow with waterproof material, e.g., plastic sheet or tarp, garbage bags, tree boughs, spare gear and clothes, or a foam pad.

Once in shelter, replace wet clothes with dry ones. Concentrate on covering head, neck, and hands.

The next step is to provide warmth. Once a person has stopped shivering and is immobile, shelter and extra clothes are not enough to raise body temperature. An external source of heat is needed.

If possible, build a fire. A small stove can heat a tent (but handle the stove carefully!).

Arrange body-to-body heat donation as seen in the film. Concentrate on trunk area. The victim's arms and legs should not be rubbed, since this sends cold blood from the extremities to the inner body. Place warm water containers next to areas of high heat exchange, e.g., armpits, groin, and neck. If the victim is conscious, provide warm drinks (non-alcoholic) and food for energy and warmth.

In general, unconscious victims should be handled very gently. As long as shelter, warmth, and food are adequate, victims should not be moved until they are comfortably warm again.

Clearly, a lone "rescuer" with little extra gear is faced with a dilemma: to stay with the victim or go for help? Once the victim has been sheltered and insulated as well as possible, the decision depends on what more can be done, on the weather, on the time of day, on the time needed to get help. Before going for help, the location of the victim should be marked and noted very carefully.

## How to Avoid Hypothermia

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Awareness, preparation, and common sense are the keys to avoiding hypothermia — not only on serious wilderness trips, but on easy one-day outings in the woods or mountains as well.

Awareness of the danger of hypothermia, combined with awareness of varying and fast-changing weather conditions, is the first element of protection.

Preparation for bad weather and emergencies is the

next element. The basic requirements — warmth and protection from wind and moisture — can be met by a number of light, compact items comfortably carried in a small day pack.

A sweater of wool or fibre pile, a wool tuque or balaclava, mitts or gloves, and extra wool socks provide a layer of warm clothing that can be varied according to the amount of heat generated by exercise. A light, wind- and waterproof jacket (with hood) and possibly wind- and rain-resistant pants provide a thin outer layer of weather protection.

Basic emergency gear need not be heavy nor bulky: a waterproof sheet or poncho, waterproof matches, perhaps a small tent and stove on longer or more rugged trips. Snack foods are always valuable for energy and strength.

A final element of preparation is telling a friend, neighbor, or Park Ranger the intended location or route of your trip and the estimated time of return.

Once the trip is under way, common sense comes into play: keeping an eye on the weather, putting on warm clothes before you're "freezing," raingear before you're wet. It means regular rests and frequent snacks; it involves looking for shelter before a storm breaks, stopping before exhaustion sets in.

Because of the wide array of activities and circumstances there are few hard and fast rules for all outdoor winter activities. But awareness of the risks, preparation for the unexpected, and a healthy amount of common sense provide a sound basis for safety and enjoyment in the out-of-doors, in winter and throughout the whole year.

## Before Screening the Film

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Because it is impossible to show every type of outdoor winter recreation and discuss every regional variation in climate, weather, and terrain, this film concentrates on the basic principles of winter survival. For viewers in different parts of Canada, it may be useful to review the outdoor activities they are most interested in, to discuss local weather patterns, and to consider situations where hypothermia could be a particular danger. For example, white-outs are a problem for many travellers in the north; high elevations are encountered in the western mountains; high winds and blowing snow may cause difficulties on the Prairies.

It would be useful to review one's knowledge of the subject by discussing real or hypothetical cases. What would be done for a person found unconscious in a

mountain storm? What is best done when someone has fallen through thin ice into a river or lake? What should one do if stranded in a car during a blizzard? Discuss the pros and cons of being alone in the wilderness. Discuss the appropriate preparations for outdoor winter recreation activities.

### **After the Screening**

For many viewers, group discussion of the film and the previous discussions (suggested above) may be useful ways to apply the lessons of the film to specific local situations and conditions. Not everyone carries a tent, sleeping bags, and stove; what do you do when you're not equipped for emergencies like those shown in the film? What are the necessary precautions and preparations for outdoor activities in the local region? Are there any innovative or ingenious ways of making a shelter, keeping warm, or providing heat that are not shown in the film? Review the pros and cons of solo activities.

### **For More Information**

Most modern, up-to-date, and comprehensive books on backpacking, cross-country skiing, mountaineering, and snowmobiling have a section dealing with hypothermia. More detailed information about clothing and equipment is likely to be found in early chapters and weather information may be found in a separate chapter also.

Most established stores carrying mountaineering and cross country ski gear can provide information about practical (not just fashionable) clothing, e.g., the particular qualities of different synthetic materials.

On a related topic, the film *Cold Water Survival* is available from the National Film Board (screening time: 11 minutes, 18 seconds; code no. 106C 0177 215).



*Minimum extra clothing kit for daily outing*

## **Winter Survival**

**Produced by National Film Board of Canada  
Pacific Regional Production**

**16 mm Color**

**Screening Time: 14 minutes 57 seconds**

**16 mm: 106C 0179 203**

**Videocassette: 116C 0179 203**

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