

Think Twice Before Going Near Cold Water or Ice



KEY TERMS

- **Dexterity** – A person's skill in physical movement.
- **HELP position** – Heat Escape Lessening Posture. A position for floating in cold water while awaiting rescue in which you draw up your knees, hold your arms at your sides and fold your lower arms against your chest.
- **Huddle position** – A position for two or more people floating in cold water while awaiting rescue, in which you put your arms over each other's shoulders so that the sides of your chests are together; children and elderly persons are placed in the middle of the huddle.
- **Hypothermia** – A life-threatening condition in which the body is unable to maintain warmth and the entire body cools.

OBJECTIVES

After completing the following activities, students will be able to–

Topic 1: Cold Water Can Kill You Faster Than You Think

- Define hypothermia.
- Recognize the potential hazards of being immersed in cold water.
- Identify the signals of hypothermia.
- Explain how to prevent hypothermia.

Topic 2: Cold Hand Luke

- Summarize what to do if you find yourself in a cold water situation.
- Recognize the importance of wearing a life jacket when around cold water.
- Name two methods of conserving body heat when in a cold water situation.

Topic 3: Breakthrough

- Describe how to rescue yourself if you fall through the ice.

Topic 4: How to Perform the HELP and Huddle Positions

- Learn safe ways to respond in a cold water emergency.
- Understand the HELP and huddle positions.

Topic 5: Ice Myths and Cold Realities

- Describe the difference between safe ice and unsafe ice.

MATERIALS, EQUIPMENT AND SUPPLIES

All Topics

- Think Twice Before Going Near Cold Water or Ice poster
- Optional:
 - Steer Clear of Cold Water or Ice stickers (one for each student)

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Topic 1: Cold Water Can Kill Faster Than You Think

- [Fact Sheet: Longfellow's Information on Hypothermia](#)
- [Activity Sheet 7-1: Think Twice Before Going Near Cold Water or Ice](#) (one for each student)

Topic 2: Cold Hand Luke

- Bucket or cooler
- Water
- Ice
- 50 pennies
- Towels
- Aquarium thermometer
- [Activity Sheet 7-2: Why?](#) (one for each student)

Topic 3: Breakthrough

- Mats
- Shepherd's crook or pole
- Rope or line
- Clothing or towels
- [Activity Sheet 7-3: Ice Self-Rescue](#) (one for each student)

Topic 4: How to Perform the HELP and Huddle Positions

- Life jackets

Topic 5: Ice Myths and Cold Realities

- None



LEADER'S NOTE

Display the Think Twice Before Going Near Cold Water or Ice poster at the front of the class. To begin a discussion about the poster, ask students questions, such as "What is the problem facing the people in this picture? Should they go on the ice to get the sled? Why or why not?" Refer to the poster throughout the activities on this topic. As an option, you may use an LCD projector to display the electronic version of the poster from the CD-ROM.

INTRODUCTION

Key Points:

- **Preventing hypothermia could save your life.**
- **We are going to learn the potential hazards of being immersed in cold water and how to safely respond to a cold water emergency.**

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TOPIC 1: COLD WATER CAN KILL FASTER THAN YOU THINK

Recommended Grade Levels: 3–6



LEADER'S NOTE

See *Fact Sheet: Longfellow's Information on Hypothermia* for information on hypothermia and how to prevent it.

Key Points and Discussion:

■ What is hypothermia?

Answer: A life-threatening condition in which the body is unable to maintain warmth and the entire body cools.

■ What are some causes of hypothermia?

Answers: Responses should include the following:

- Exposure to cold
- Exposure to chilling winds
- Getting wet

■ If you suddenly find yourself in cold water from a boat accident, should you try to swim to shore? If not, why not?

Answer: No. Swimming will increase the rate of heat loss from your body and you will fatigue quickly in cold water.

■ What should you do when your boat overturns and you fall into cold water?

Answer: If possible, hang onto the overturned boat.

■ Besides your clothes, what else could help keep you warm that you should be wearing?

Answer: A life jacket.

■ If you are swimming and the water is really cold, could that be dangerous? If so, why?

Answer: Yes. In cold water the body loses heat faster than it can produce it.

■ Have any of you ever been really cold when swimming? What did you feel like?

Answer: Allow time for responses.

■ What are some signals that you are getting too cold?

Answers: Responses should include the following:

- Shivering
- Numbness
- Glassy stare
- Apathy

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- Weakness
- Impaired judgment
- Loss of consciousness (in late stage of hypothermia)

■ How can we prevent hypothermia?

Answers: Responses should include the following:

- Always wear a life jacket when around cold water.
- Wear layers of insulated clothes that keep you warm even when wet.
- Wear a hat.

Activity:

Have the students complete Activity Sheet 7-1: Think Twice Before Going Near Cold Water or Ice.

TOPIC 2: COLD HAND LUKE

Recommended Grade Levels: 3–6

Key Points:

- Cold water conducts heat away faster than air at the same temperature.
- Movement, such as swimming, will cause your body to cool faster. Movement causes the heart to work faster in order to pump blood into the extremities. This causes the internal organs to cool down, which speeds up the effects of hypothermia.

Activity:

- Fill a large bucket or cooler with water and ice. Place the bucket or cooler on a table covered by towels.
- Explain to students that the HELP (Heat Escape Lessening Posture) and huddle positions can be used to conserve body heat. (See Fact Sheet: Longfellow's Information on Hypothermia for illustrations of the HELP and huddle positions.)
- Drop the 50 pennies into the bucket of water.
- Place the thermometer in the water and note the temperature.
- Either select a student to participate in this activity or you do it yourself.
- If applicable, ask the student to remove any jewelry from his or her hands or wrists.
- Have the student place one of his or her hands in the water. Ask the student to pick up one penny at a time and place it on the table. The student should try to get out as many coins as possible in 1 minute. Ask the student what his or her hand feels like at 15, 30, 45 and 60 seconds. Explain that the student can stop at any time that he or she chooses before the minute is up. Note the water temperature again.
- Point out the decreased movement, skin color and numbness of the exposed hand and arm caused by only a short time in the cold water.

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- Ask students, “**What do you think it would feel like if your entire body were in the cold water?**”

Answer: Allow time for responses.

- Tell students, “**It would be very difficult to try to put on a life jacket if your entire body were immersed in water this cold. It would be nearly impossible because of the loss of hand movement, among other things.**”
- If you have time, have other students try this activity.



LEADER'S NOTE

As an option, try the same activity using warm water. Compare the results.

Activity:

Have students complete Activity Sheet 7-2: Why?

TOPIC 3: BREAKTHROUGH

Recommended Grade Levels: 2–6

Activity:

- Set up mats on the floor to simulate pieces of ice.
- Have students “fall through” the cracks in between the ice.
- Allow students to experiment with different ways to get back onto the ice.
- After they are back on the ice, experiment with different ways of traveling across the ice, such as crawling or rolling.
- Have students complete Activity Sheet 7-3: Ice Self-Rescue.

TOPIC 4: HOW TO PERFORM THE HELP AND HUDDLE POSITIONS

Recommended Grade Levels: 3–6

Key Points and Discussion:

- **How could you stay warm if you fall into cold water and are wearing a life jacket?**

Answers: Responses should include the following:

- *Keep your face and head above the surface.*
- *Keep all your clothes on, even wet clothes help you retain body heat.*
- **If you can get to safety with a few strokes, do so. If not, float and wait to be rescued.**

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- **There are two positions for floating in cold water while wearing a life jacket:**
 - **HELP (Heat Escape Lessening Posture)**—Draw your knees up to your chest, keep your face forward and out of the water, hold your upper arms at your side and fold your lower arms against or across your chest.
 - **Huddle Position**—The huddle position is for two or more people in the water. Put your arms over each other's shoulders so that the sides of your chest are together.

Activity:

Have students put on life jackets and try the HELP and huddle positions on land.

TOPIC 5: ICE MYTHS AND COLD REALITIES

Recommended Grade Levels: 3–6

Activity:

Read the following myths to the class. After reading the myths, explain to the class the truth or the “reality” of the situation.

Myth 1: Ice forms at the same thickness everywhere on a body of water.

Reality: Ice is rarely uniform in thickness. It can be a foot thick in one place and only an inch thick just 10 feet away.

Myth 2: Thick ice is strong.

Reality: Even thick ice may be weak, especially if it contains layers of snow or water, if it has frozen and thawed repeatedly or if it is spring ice.

Myth 3: Snow on top of ice makes it stronger and freezes faster.

Reality: Snow acts like an insulating blanket. The ice under the snow will be thinner and weaker. A snowfall can also insulate, warm up and melt existing ice.

Myth 4: For the same thickness, all ice has the same strength.

Reality: Different types of ice have different strengths for the same thickness. Clear blue, black or green ice is the strongest. Four inches of this type of ice should safely support 1 or 2 people. White opaque ice should be at least twice as thick (8 inches) to safely support the same people. Ice with layers of snow or spring ice cannot be expected to support anyone.

Myth 5: Extreme cold means safe, thick ice.

Reality: A cold snap with very cold temperatures quickly weakens ice and can cause large cracks within half a day. A warm spell will take several days to weaken the ice.

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Myth 6: Alcohol helps keep you warm on cold winter nights, especially when snowmobiling or ice fishing.

Reality: Alcohol actually stimulates blood vessel dilation at the surface of the skin, creating a feeling of warmth. This process speeds up heat loss and makes it harder to stay warm. Alcohol also impairs judgment and increases the risk of becoming involved in a serious ice-related incident.

Myth 7: If you know where you are going and what the ice is like, it is safe to travel across the ice at night.

Reality: It is particularly dangerous to travel on ice at night. Ice conditions change daily, and you will generally not be able to see hazards or warning signs at night.

Myth 8: The better you swim, the better your chances are of rescuing yourself if you fall through ice.

Reality: Swimming skill plays only a small part in ice-related rescues. After as little as 5 minutes, cold water begins to rob you of your ability to move your limbs. This makes it very difficult for you to get out of the water, no matter how well you can swim.

WRAP-UP



LEADER'S NOTE

Refer back to the *Think Twice Before Going Near Cold Water or Ice* poster as you review the lesson.

Key Points and Discussion:

- **What can happen if a person gets too cold?**
Answers: A person could get hypothermia.
- **How can you prevent hypothermia?**
Answers: Responses should include the following:
 - *Always wear a life jacket when around cold water.*
 - *Wear layers of insulated clothes that keep you warm even when wet.*
 - *Wear a hat.*
- **Preventing hypothermia can save your life.**

Longfellow's Information on Hypothermia



What Is Hypothermia?

Hypothermia is the dangerous lowering of the body's internal temperature to below normal. Hypothermia occurs when the body loses heat faster than it produces heat. When this happens, the heart and lungs can no longer work properly. The brain's ability to think and make rational decisions is also affected. Hypothermia can develop very quickly and is a life-threatening condition.

What Causes Hypothermia?

Hypothermia is brought on by exposure to cold, chilling winds and by getting wet. It progresses quickly in a person whose body does not have enough energy-producing food to act as fuel for warmth and in a person who does not have on adequate clothing. It can happen on land or in the water.

Signals of Hypothermia

Signals of hypothermia include—

- Shivering.
- Numbness.
- Glassy stare.
- Apathy.
- Weakness.
- Impaired judgment.
- Loss of consciousness (in late-stage hypothermia).

How to Prevent Hypothermia

Protect yourself from hypothermia by—

- Always wearing a U.S. Coast Guard-approved life jacket when around cold water.
- Wearing layers of insulated clothes that keep you warm even when wet, such as clothing made of insulating synthetic materials.
- Wearing a hat. Body heat is quickly lost through the head.

What to Do if You Fall Into Cold Water and Are Waiting to Be Rescued

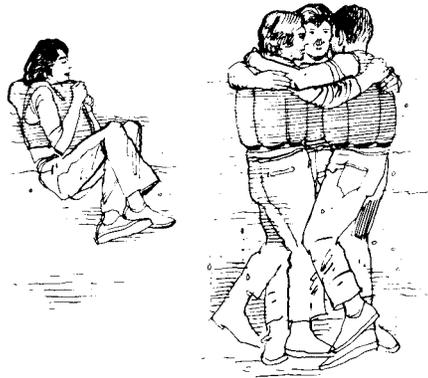
To protect yourself against hypothermia if you fall into cold water, you should—

- Keep your head out of the water.
- Keep your clothes on.
- Get into the HELP position (**H**eat **E**scape **L**essening **P**osture).
- Swim to shore only if it is a short distance or if a current is carrying you toward danger.

Longfellow's Information on Hypothermia



WEAR YOUR LIFE JACKET WHEN YOU ARE AROUND COLD WATER!



How Long Can You Survive in Cold Water?

The length of time you can survive in cold water depends on what you are wearing, your age, your body size and type, your fitness level, the length of exposure in the water and the temperature of the water.

You should remember that—

- Wearing a life jacket increases your survival time.
- Wearing a life jacket gives rescuers more time to find and help you.
- A life jacket helps conserve body heat.
- A life jacket helps keep your face out of the water.

How to Help Someone with Hypothermia

To care for hypothermia—

- CHECK the scene and the victim.
- Send someone to CALL 9-1-1 or the local emergency number.
- Gently move the victim to a warm place.
- Give rescue breathing or CPR if needed.
- Remove any wet clothing and dry the victim.
- Warm the victim SLOWLY by wrapping in blankets or by putting dry clothing on the victim. Hot water bottles and chemical hot packs may be used when first wrapped in a towel or blanket before applying.
- DO NOT WARM THE VICTIM TOO QUICKLY, such as immersing him or her in warm water. Rapid warming can cause dangerous heart rhythms.

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Find the hidden words listed below. They describe the signals of hypothermia.
The words can run up, down, backward, forward or diagonally.

N	U	M	B	N	E	S	S	K	D	V	Z	H	P	S	S	W	N
D	M	O	S	H	M	Y	J	N	D	F	C	G	M	E	C	I	O
I	A	T	E	I	W	I	N	Q	O	E	T	O	V	G	O	U	I
N	T	Z	A	F	G	D	M	G	E	H	B	E	G	F	N	E	T
B	O	K	Y	I	I	R	V	P	U	A	R	H	N	C	F	B	A
B	W	F	X	L	E	Y	S	F	T	E	M	D	O	C	U	B	N
U	U	U	V	J	E	S	O	K	S	I	J	N	L	O	S	A	I
V	H	V	O	Z	E	N	A	H	Y	Y	S	A	E	R	I	H	D
H	T	G	U	N	V	O	I	M	S	C	B	X	T	I	O	L	R
X	S	Q	K	G	P	V	M	Z	I	J	A	F	H	A	N	I	O
H	V	A	J	L	E	R	D	O	E	G	Z	V	A	R	M	B	O
X	E	O	M	R	N	Q	U	F	D	F	K	L	P	O	W	I	C
W	X	H	I	K	I	S	U	J	N	N	R	H	A	J	G	D	F
X	R	N	Q	B	N	J	B	X	X	M	C	T	T	S	S	P	O
U	G	S	W	E	I	T	E	L	D	W	V	A	H	H	R	K	K
B	T	L	S	O	O	Q	F	A	H	Y	Y	E	Y	I	L	C	
D	C	S	P	C	G	O	Z	B	T	Z	W	D	I	L	X	K	A
W	O	U	X	K	A	C	O	V	R	G	O	E	U	Z	T	M	L

Word List

SEVERE SHIVERING
UNCONSCIOUSNESS
CONFUSION
DEATH

WEAKNESS
NUMBNESS
APATHY

Ice Self-Rescue



Fill in the blanks using the words below.

roll panic throw
ice far extend
push stand breaststroke



If you break through ice, you can rescue yourself as long as you do not panic. Reach forward onto the broken ice, but do not push down on it.



Use a breaststroke kick or other kick to push farther onto the ice. Do not stand up on the ice.



From this position you can roll away from the hole. Do not stand up until you are far away from the hole. Have someone throw or extend something if needed.