Be Prepared...

Cold Water Can Kill You

Water pulls heat from your body 30 times faster than air. If your core body temperature drops just 3.5 degrees you will experience hypothermia which can be deadly. So, even water that is slightly below your core body temperature of 98.6 degrees Fahrenheit can be dangerous. Your survival time greatly depends on the temperature of the water, your physical condition and your personal preparation.

Cold Shock

is a dangerous, sometimes fatal, condition that can result when a person is suddenly immersed in cold water, such as would occur in a capsize. The sudden exposure of the head and chest to cold water typically causes an involuntary gasp for air, sudden increases in heart rate and blood pressure, disorientation and can possibly cause cardiac arrest.

Hypothermia

results when the body can no longer maintain its normal temperature. In an attempt to protect the core (heart, lungs and brain), the body systematically begins to shut down the body. Judgment and coordination are adversely affected. Eventually, death can result. One of the best indicators of when someone is becoming hypothermic is if they begin to shiver uncontrollably while at rest. Being at rest is important because the body heat produced by the exercise of paddling tends to temporarily mask the onset of hypothermia. Take frequent breaks where everyone stops exercising and use this time to check who begins to shiver.

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ACA
American Canoe Association
Kayak & Canoe Recreation

YOUR BOATING DOLLARS AT WORK

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Part of ACA's Paddle Safe, Paddle Smart Series

Cold Water Survival

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Prevent

Plan your Trip and "Think Smart"

- Be aware of air and water temperature before you set out.
- Always wear your lifejacket (PFD).
- Paddle near to shore and/or near others who can help you in the event of capsize.
- Paddle with others and ensure that all participants know the signs and symptoms of hypothermia.

Fuel your body

- Keep your body well fueled with high carbohydrate foods and lots of water.
- Remember, your body expends calories to maintain your core temperature as well as to provide energy to your muscles.

Insulate your body

- Avoid wearing cotton clothing when paddling in cool temperatures.
- Dress in layers using synthetic fabrics such as polyester fleece to prevent getting overheated or chilled from perspiration.
- Carry a waterproof jacket designed for splash and/or rain protection.
- Anytime the water temperature is less than 60 degrees Fahrenheit, wear specialized insulating clothing capable of protecting you while in the water.
- Always wear a wet suit or dry suit:
  - If both the air temperature and water temperature combined is less than 120 degrees,
  - If you will be far from shore in cold water, or
  - Anytime in cool or mild weather when you expect to be repeatedly exposed to cold water.

Keep in mind that the warmth and comfort range of a dry suit can be flexible based on the clothing worn underneath it.

Also, many people wear clothes underneath their wet suits but this defeats the insulating ability of the wet suit to create a microclimate of water next to the skin. Studies have shown that the number one criteria in determining the insulating capability of a wet suit is its ability to trap the water. Wearing clothes beneath your wetsuit allows for a lot of water movement and hence, heat loss.

Tips to stay Warm

- Wear a warm hat that will stay on your head in the water. A fleece-lined skullcap is ideal.
- Have spare, dry clothing and store in a sealed dry bag while on the water.
- Test your protective clothing in a controlled cold water environment to understand the level of protection provided.

Watch out for your Group

Know your emotional and physical limitations. Group members need to constantly assess the behavior of others in their group. Look for changes in behavior: withdrawal, sluggishness, talking less or a member not eating enough. These are all symptoms of fatigue and may suggest a problem that the group needs to address.

Assess

Typical symptoms of hypothermia in general order of onset:

1. Shivering
2. Impaired Judgment
3. Clumsiness
4. Loss of Dexterity
5. Slurred Speech
6. Inward/Withdrawn Behavior
7. Shivering Stops
8. Muscle Rigidity
9. Unconsciousness
10. Death

How Cold Water Affects the Body

Water Temperature	Exhaustion	Survival
32.5 degrees	Under 15 min	Under 15 to 45 min.
32.5 to 40	15 to 30 min	30 to 90 min.
40 to 50	30 to 60 min	1 to 3 hrs.
50 to 60	1 to 2 hrs	1 to 6 hrs.
60 to 70	2 to 7 hrs	2 to 40 hrs.
70 to 80	3 to 12 hrs	3 hrs. to indefinite
Over 80	Indefinite	Indefinite

Treat

Mild hypothermia
(victim shivering but coherent):

If possible, take action before this stage. You may still have time to either stop the trip or take out early. Planning for an early take out and/or shuttle half way pays dividends.
Move victim to place of warmth. Provide protection from wind. Replace wet clothing with dry, give warm, sweet drinks; no alcohol or caffeine. Keep victim warm for several hours. The "window of opportunity" is closing fast. By this time the victim is already well on the way to experiencing hypothermia.

Moderate hypothermia
(shivering may decrease or stop):

Victim may seem irrational with deteriorating coordination. Treat the same as above but give nothing by mouth. Victim should be kept lying down with torso, thighs, head and neck covered with dry clothes, coats or blankets to stop further heat loss. Seek medical attention immediately.

Severe hypothermia
(shivering may have stopped):

Victim may resist help or be semiconscious or unconscious. Remove from water, victim must be kept prone, on back and immobile. Victim must be handled gently. Cover torso, thighs, head and neck with dry clothes, coats or blankets to stop further heat loss. Arms and legs should not be stimulated in any manner. Seek medical attention immediately.

Victim appears dead
(little or no breathing, no pulse, body rigid):

Assume victim can still be revived. Look for faint pulse or breathing for 2 minutes. If any trace is found, do not give CPR. Medical help is imperative. If pulse and breathing are totally absent, trained medical personnel should start CPR. **SEEK MEDICAL ASSISTANCE IMMEDIATELY.**