



Alaska Sea Kayaking Symposium

# Alaska Sea Kayaking Symposium

AKSKS • 200 W. 34<sup>th</sup> Ave. Suite 557, Anchorage Alaska 99503 • (907) 275-PADL (7235) • info@aksks.org

---

On the Internet: [www.aksks.org](http://www.aksks.org)

## AKSKS Core Lecture Cold Water Immersion

Text from S.K.I.N. (NOLS Sea Kayaking Instructor Notebook)

- Drowning is the second to third leading cause of accidental death in the U.S. Nine thousand lives are lost to drowning each year.
- Almost all deaths had one thing in common: the victim never intended to be in the water.
- Many of the fatalities have been non-swimmers.
- Most victims were not wearing personal flotation devices.
- Some were white water paddlers not wearing helmets and hit their heads when they went upside down.
- One study estimates that more than half of the dead had alcohol or some other mind-altering substance “on board”.
- Immersion Hypothermia, the loss of core body temperature and the resulting loss of coordination from being immersed in cold water, was a factor in a large number of drownings.
- Males drown far more often than females. Males outnumber females 12 to 1 in boating related drownings.

From The Wilderness First Responder text  
By Buck Tilton, M.S. Director

### **How cold is cold water?**

Sources list that 25°C (77°F) is considered cold water. To folks who have dipped their toes into an alpine lake in mid-summer (54° F), or glaciated areas like Alaska or a northern part of Norway, 77°F water would feel warm.

### **When should we worry?**

We should be concerned about the sudden impact on physiology of immersion in water colder than 55°F and know that water approaching freezing is deadly.

### **What is cold Shock?**

Immersion in water exposes us to drowning, and immersion in cold water to hypothermia. The term “**cold shock**”

is commonly used to describe stress, surprise, panic, pain, and physical challenge we experience when we suddenly immerse ourselves in cold water.

### **What is Hyperventilation?**

Sudden immersion in cold water induces a reflex gasp, followed by hyperventilation. The gasp response is dangerous if we are submerged, since it can lead to aspiration of water, laryngospasm and drowning.

Hyperventilation can quickly lower blood levels of carbon dioxide and cause tingling, numbness and spasm in the extremities, as well as headache, and in extreme cases, changes in level of consciousness. Fear and panic exacerbates the hyperventilation.

A person can only hold their breath for about half as long in cold water as they can in warm.. This has implications for how long we can remain submerged while attempting to roll or extricate ourselves from a boat.

### **Sudden Death?**

People speak of sudden death from immersion in cold water. Possible mechanisms include immediate heart stoppage or ventricular fibrillation and sudden seizures. It has never been clear how common this might be, although it does strike, especially if the person has had a history of heart disease, seizures, or was under the influence of alcohol or drugs.

### **What is Hypothermia?**

Hypothermia is the state when your body loses heat to the environment faster than it can produce heat. Your body's core temperature starts to drop and the first signs are:

- Loss of fine motor skills
- Mild stupidity
- Lack of sound judgement
- Confusion
- Apathy
- Pale and cool skin

The signs and symptoms of moderate and severe hypothermia are:

- Uncontrolled shivering
- Slurred speech
- Increased confusion
- Increased stumbling
- Cold and pale skin
- Cessation of shivering
- Low level of consciousness
- Muscle rigidity
- Slow respiration and pulse
- Cold and cyanotic skin

### **Immersion Hypothermia?**

Immersion hypothermia is a risk, but most people drown before they are cool to the point of hypothermia. Practically for a sea kayaker the issue of cold shock is the ability, or inability to keep from drowning in the short term, and to defend against hypothermia in the long term.

### **How do I dress for Cold water paddling?**

Ideally we're always dressed for exposure to the cold water. Practically, we would have many cases of heat illness if we actually dressed for arctic water on a warm and sunny day on the sea. We balance our clothing for both the water and surface conditions. Our best protection from cold shock is to be off the water if capsizing is likely. If you cannot get to protected water or the shore, dressing for cold water immersion may help, with a focus on insulation and the head and neck.

Drysuits and neoprene wetsuits will prolong your time to stay alert in cold water, but are usually too warm and uncomfortable to paddle in. A Farmer John "shortie" is an option used by many. Breathable Gore-tex drysuits are now available on the market but quite expensive. Wearing a wetsuit and other extreme cold water protective gear would be wise for an aggressive paddler who is likely to tip over or be slammed in the face by a cold wave, but for the more casual expeditionary paddle, this extreme is unnecessary.

### **Recommended layers for cold water paddling:**

Poly pro long johns

Wind pants, rain pants or paddle pants

Wool socks and sandals or Neoprene booties

Poly pro top

Expedition weight top or wool sweater

Wind Breaker, rain jacket or paddle jacket  
Pogies or paddling gloves  
Neckwarmer  
Woolhat or pile cap

### **What do I do if I capsize in Cold Water?**

Know your resources. The sooner you get out of the water the better. Call for Help! Blow your whistle!

If you are with a group you can just hang on to your boat and wait for an assisted rescue to take place. If your paddling friends are far away, crawl up on the deck so your main core is out of the cold water.

If you are on your own and have practiced and feel competent go ahead and perform a paddlefloat rescue or a self rescue quickly.

If you are really close to shore, let's say 25 yards or less, you can kick yourself and your boat to the beach. Bring your boat. That's where you have your sleeping bag, your thermos of hot tea, your pile jacket, your shelter, etc.

If you are further out and by yourself we recommend that you try to get up on top of the boat so your head, neck, chest and abdomen are out of the water. Allow the boat to be upside down. Swim over the stern. About a foot from the end you can throw/drape yourself over the kayak. With your belly on the keel line slide yourself towards the center of the boat where you will be more stable. From this position you can shoot off a flare, call for help or prepare your paddle rescue.

### **What if I can't get back into the kayak?**

Hang on to your boat. You and your kayak are more visible than just you in the water. Keep your PFD on, even if it feels cumbersome. Try to assume the **H.E.L.P.** position (Heat Escape Lessening Position) in order to minimize heat loss. Shoot off a flare, activate your EPIRB, use your VHF radio. Keep talking to yourself.

### **What do I do when I get back to shore?**

Seek shelter from wind and rain. Get out of your wet clothes. Put dry clothes on. Eat. Drink (avoid alcohol and caffeine). Move around. Put hot water bottles or heat packs wrapped in a towel, bandana or t-shirt to your neck, groin and/or armpits. Eat. Drink. Stay dry. Set up your tent or tarp. Plan ahead for the night. Keep moving.

### **Advise for cold water paddlers:**

1. Stay out of the water! If the conditions turn rough – land, and be prepared to wait out the weather. Bring shelter, warm clothes and food.
2. Practice, practice, practice...Fine-tune your rescue skills but more importantly your “stay-upright” skills. Learn how to brace and learn how to safely land through the surf.
3. Know your First Aid.
4. Use high quality equipment. A good paddle jacket can do wonders. Dry bags lined with a trash compactor bag will keep your clothes and food dry.
5. Know how to use your equipment. The paddle float, the stove, the radio. EPIRB, the tent, the tow rope....

Courtesy of Lena Conlan, Crossing Latitudes, Inc.