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## **Surviving Hypothermia**

By Vincent Pica

When I wrote about skippering in heavy weather, I promised to come back to you about hypothermia – low body temperature. If you get too cold, long before you freeze to death, you will succumb to hypothermia. – the lowering of internal body temperature until death occurs. Remember this: water conducts heat away from your body 25 times faster than air of the same temperature. To prove it, try this experiment with the kids. Get a glass of water to room temperature and drop an ice cube in it; at the same time, lay an ice cube on a napkin next to the glass of water. When the ice cube in the glass has melted away, there will still only be a small amount of dampness around the ice cube sitting on the napkin.

### **Signs of Hypothermia**

When I teach seamanship courses, I tell the skippers that the easiest and surest sign of hypothermia in yourself or others is "getting drunk without the booze": reflexes slow, fine motor skills start to disappear (have the person tie a bowline), speech starts to slur, and it's hard to concentrate and, worse of all, their shivering stops.

When the shivering stops, the body is starting to shut down functions that are taking away from survival. It will just keep shutting down functions until you stabilize at some low and diminished capacity or you become unconscious. Death follows.

### **What Happens When?**

- 98.6F – all is well.
- <98, >96F – shivering starts and can't be stopped; the person can walk and talk but fine motor skills are diminishing.
- <96, >93F – stumbling and fumbling starts in earnest. Sometimes, the person can become violent; they are irritated by these same diminishments and, similarly, by your pointing it out!
- <93, >86F – the body begins to shut down as blood moves away from the outside and pools what heat it can on the inside; shivering starts to fade in and out; symptoms of drowsiness become overwhelming; the death spiral has begun in earnest.

### **What to Do?**



If you've capsized, climb up on top of the boat – get out of the water (remember the ice cube experiment). If someone has fallen in, throw them a PFD, a cushion, a fender – anything – to minimize their struggling. Increased heartbeat increases the rate of blood flow from the cold extremities to the warm interior and back again – driving core temperature down even faster. Unless you are absolutely sure you can make it to shore, don't try to swim to shore (remember that increased heart

beat conundrum!). Assume the "HELP" position (Heat Escape Lessening Position) which entails bringing your knees up against your chest. At a minimum, cross your legs (protect blood vessels around the groin) and cross your arms across your chest (protect blood vessels under your arms). If you're in the water with a group, huddle together for warmth and, most importantly, encouragement!

### Treating the Hypothermic Person

Believe it or not, if you apply heat directly to the arms and legs of a hypothermic person you just pulled from the sea, you can kill them. It is called the "after drop" – you force cold blood that has pooled in the arms and legs (constricted blood vessels) back toward the heart and brain and that lowers their body temperature. Apply heat (hot water bottle, towels that have been microwaved, heating pads, your warm, dry hands) to the head, neck, chest and groin. Be aware that their skin is now extremely sensitive to temperature and touch (think of those "pins and needles" you feel when your leg, that has "fallen asleep," starts to wake up).

Of course, you need to get them into a warm or at least dry environment as part of the rescue. Lay them on their back or side (not face down). This person is dying so there is no time to be squeamish or bashful. Lie on top of them and wrap a blanket around you both. There are two schools of thought on getting them out of the wet clothes. Some believe that the little bit of water than you can warm with your body can aid in their recovery. My own experiences lead me to believe that, if the alternative is wet clothes or just a blanket around a naked body, go with the wet clothes and cover them up with blankets and your warm body. If they are conscious, give them warm – not hot – liquids. Add sugar for energy. No alcohol and avoid caffeine if possible.

Remember the ice cube experiment. Get them out of the water...and call for help. The USCG can and will have an ambulance meet you at the dock as you come alongside.

**About the Author:** *Vincent Pica is a coxswain and the Commander of Flotilla 18-06 East Moriches. He was a navigator in a brown-water and blue-water sailboat racing crew for eight seasons. From the "iron sails" side, he is a licensed US Coast Guard Master of Steam and Diesel Powered Vessels, carries a Radar Observer endorsement, Unlimited, on his license and is certified in Marine Diesel Engine Operation and Maintenance.*

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