

## In-Water Survival

### What to Do if You Find Yourself Overboard

#### Water Temperature

One of the most important factors in water survival is temperature.

All things being equal, your chances of surviving are much better in warm water than cold water. But just how cold is cold water?

For the body to maintain a temperature of 98.6° F, and survive an extended period of immersion, the water must be above

91° F. The relatively thin layer of fat in the average human is not sufficient to protect the body from heat loss due to contact with colder and moving water. So by this definition, cold water is any water below 91° F.

However, muscle movement, such as swimming, generates heat. Thus, through exercise we can maintain our body temperature in water temperatures down to 72° F. The catch, however, is that rest and food are needed for heat production. Immersion in water below 70° F can profoundly affect the body's metabolism and lead to drowning.

#### Body Type

Certain rare individuals are able to maintain their body temperature in even colder water due to their body type, such as people with insulating layers of fat who are also superb athletes. But just because you're skinny, it does not mean you are going to die if you find yourself in water for extended periods of time. A positive mental attitude can make all the difference!

#### General Physical Condition/Injuries

Generally, people who are in good physical condition and have fewer injuries are more likely to survive extended times in the water. But never underestimate an injured person's will to live, even if they are not in top condition.

#### Type of Clothes

Think wool, polypropylene, or other fabrics that keep you warm even when wet. Cotton will not. Immersion suits or deck coveralls can also greatly extend your in-water survival time.

#### In-Water Activity

Should you try to swim to shore? The decision to swim, or to remain still to conserve energy and reduce heat loss, is a judgment call in all situations and depends on the factors mentioned above. When swimming is appropriate, try your most proficient swim stroke. Unless the crawl stroke is easy and natural for you, you will probably find that a back or breast stroke will be less tiring. In either case, you need to take into account the nearness of rescue as well as the temperature of the water, the tides, currents, distance to shore, and your swimming ability before you decide to swim your way out of a problem situation.

#### Will to Survive

You've read it repeatedly: your will to survive can make the difference between life and death. It is well documented that depression lowers your body core temperature and reduces your will to live. So think positive thoughts about people, pets, or possessions that you want to see again.

#### How to Extend Your In-Water Survival Time

You can extend your in-water survival time by getting yourself out of the water as soon as possible and reducing your body's heat loss by following the Stay Rules.

Signal for help as soon as possible. This is where the whistle, flare, or other signals you put on your PFD will come in handy. (You did do that, didn't you?) Yell and wave your arms. Put the hood up on your float coat, coveralls, or foul weather gear; they are often bright and some have reflective tape on them. Make yourself as visible as possible. The people on the boat need to know you are overboard before they can help you.

Stay with the boat. Make sure you do not abandon your vessel until being on board is more dangerous than being in the water. If your boat does capsize, beware of entrapment, anything that could snag you, and hazardous floating debris.

Once capsized, many vessels float due to air trapped inside their hulls. Plus, all commercially made monohull recreational vessels under 20 feet (except canoes, kayaks, inflatables, and sailboats) built after July 31, 1978 are constructed so that some portion of the vessel will float above water when it is swamped or capsized. The amount of flotation put into the boat is determined by whether it is built for an inboard/outboard engine, the engine size, and the passenger and weight carrying capacity. Do not remove this flotation! Staying with your vessel also makes you a bigger target for rescuers, and keeps you closer to your last reported position.

Stay afloat. Staying afloat is critical, but how do you stay afloat when your vessel has been lost? With your PFD! Your body has only a few air spaces - your lungs and stomach - to aid in buoyancy, so anything that floats you higher will help you avoid swallowing or inhaling water. Wearing a PFD also greatly reduces your risk of panic and helps you control the involuntary gasping that can occur in cold water.

Whether or not to remove clothing and boots when you are in the water is controversial. Leaving clothes on traps air and keeps you warmer, but movement will allow the air to escape. Boots and waders can be buoyant if they are sealed well by clothing and bent knees.

In colder waters it might be advantageous to leave on clothes and boots as long as possible and remain still to minimize loss of air between layers. In warmer waters, clothes may be removed and filled with air to serve as a flotation aid, but this should only be used as a warm water technique.

Sinking boats leave much debris in their wake that can also help you stay afloat and get higher out of the water: ice chests, fenders, buoys, jerry jugs, and other buoyant items. In one case, people from a sunken vessel in the Pacific tied all of the vessel's buoys together and made a raft that floated them for days!

Stay dry. Water robs heat from your body 25 times faster than air of the same temperature, so do anything you can to stay dry. Immersion suits are the only type of

flotation device that is designed to keep you dry, and they should be seriously considered by all boaters on cold waters.

If you have to enter the water, do it slowly. This will keep you drier and help you control your breathing. Sudden immersion in cold water can sometimes lead to what is called the Sudden Drowning Syndrome, where cold water gets into your ear, causing you to lose your sense of direction. This partially explains why even strong swimmers sometimes drown in cold water.

Since 50% of your body's heat loss is from your head, keep your head as dry as possible. Especially avoid using the "drown proofing" technique of holding your breath and submerging your head under water when you are in cold water. This is one of the quickest ways to cool off. Instead, get as much of your body as possible out of the water. Stay still. Body movement increases heat production, but this can either help or hurt you depending on the temperature of the water. In cooler water, less exercise is better. If you stay still you lose less heat - by as much as 30% - than if you are swimming or treading water.

Prolong your survival time by protecting your high heat loss areas: head, neck, armpits, sides of the chest and groin. If you have a PFD, assume the Heat Escape Lessening Position (HELP) if you are alone or the Huddle position if you are in a group. (Put very young, injured, and elderly people in the middle if you can.) This will double your in-water survival time.

In rough waters, you will need to drop your legs straight down to maintain stability in the HELP position. Keep your thighs together, ankles crossed, and arms next to your sides. Cross your arms on your chest; grasping your knees will tend to put your face in the water. If you have a PFD with an inflatable bladder, inflate it as soon as you are in the water!

Some survivors have complained of being too hot in their immersion suits. The excitement and activity of abandoning ship can make you feel hot, especially if you have several layers of clothes on under your suit. Even if you are tempted to open the suit to cool off, don't! It is important to stay as dry as possible. Getting soaked from sweat is not good, but it is better than having a lot of water in your suit.

Stay together. Staying together has several benefits. It allows you to share body heat if you are in a Huddle, to boost each other's morale, to check on each other's condition, and it makes you a bigger target for rescuers. The will to survive can be much stronger when your friends and loved ones are at hand, as opposed to wondering where they have drifted off to and if they are still okay. Help each other. It's harder to give up when you are part of a team.

From *Water Wise: Safety for the Recreational Boater*, by J. Dzugan and S.C. Jensen, published by University of Alaska Sea Grant and U.S. Marine Safety Association.