



Staying Safe on the Water

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According to oceanologists, the average worldwide ocean temperature ranges between fifty and sixty degrees Fahrenheit. Water below sixty degrees is designated as “cold water.” When humans are immersed in these temperatures their survival time is not measured in hours or even minutes, but often in seconds. Preparation and mastery of some simple skills can greatly increase your odds of survival in any water emergency.

In technical terms very few people involved in water emergencies actually die from hypothermia. That sounds counterintuitive, but it is a much researched fact of exposure.

Hypothermia is an actual drop in the body core temperature, and that is a function of temperature and time. Most drowning victims, in cold or cool water are dead long before hypothermia sets in or can be clinically diagnosed. Cool and or cold water may be the single greatest water danger.

This phenomenon is referred to as cold shock and has only been recognized by researchers in the last few decades.

So what is actually occurs when someone enters cold water?

There are two distinct hazards of cold water that will affect both physical and mental function in humans. The first is instantaneous. It is called cold water immersion and the symptoms rapidly lead to drowning. A significant percentage of people, even those with swimming skills and water experience, can begin actively drowning due to cold-water immersion in a matter of moments. The impairment of mental and physiological functions is so intense that it is critical to be prepared and act quickly in water emergencies.

Cold-Water Immersion

The first and most critical stage of cold-water immersion is called the **Cold-Water Gasp Reflex**. When thrust into cold water a human will gasp uncontrollably, leading to airway compromise and the aspiration of water. This is an involuntary physiological phenomenon. This condition is extremely hazardous and is a major contributor of drownings in cooler water. Keeping control of your breath is vital. Victims also can begin to hyperventilate at this stage in an attempt to catch their breath, which can increase panic and compound their inability to breathe. People have drowned at the surface of the water with a life vest on due to the gasp reflex. Even a small wave state or sea spray can cause people to aspirate water and drown.

What to Do

In the midst of the gasp reflex, hold your breath and try to keep from gasping for as long an interval as you can. This is difficult to accomplish and only can be managed for a few

seconds as the symptoms will continue to recur. However, if you maintain hold your breath for these short durations, the effects of the gasp reflex will slowly begin to ebb. Do not try and perform any other skills or maneuvers until your breathing is under control. This can take a minute or longer.

The Mammalian Dive Reflex

The second stage of cold-water immersion is called the Mammalian Dive Reflex, and it also has a rapid onset. When the body cools, capillaries are constricted as blood is drawn from the extremities and shunted to the core. This restricted blood

flow makes the ability to use one’s hands and feet progressively more difficult. If the gasp reflex is occurring, even an experienced physically fit individual can lose muscle control quickly and drown. Fine dexterity falters rapidly, and simple tasks like pulling the toggle of a life vest or grasping a lifeline becomes impossible.

The next stage of cold-water immersion is **swimming failure**. This is also a function of time and heat loss, but swim failure can develop quickly. This can occur before or during clinical hypothermia. The restriction in blood flow from the dive reflex starves the larger muscle groups, weakening the victim. The inability to swim or manipulate appendages leads to drowning, in some recorded cases, very quickly.

So what do you do?

The HELP Position

Always wear a life vest and know how to use it.

A vest will save your life in several different ways. It will help to stave off hypothermia because its flotation will minimize movement and save body energy. Know how to use the manual inflation system of your vest. If you are unsure of how your vest works, open it up and read any directions and the manual. The opportunity to understand how your vest works is when you are high and dry, not in the midst of an emergency.

There are also a few simple techniques, which can assist in individual and group hypothermia mitigation. The technique that works best for individual hypothermia mitigation is the **Heat Escape Lessening Posture/Position (HELP)**. The HELP position may be the single most important survival skill to master if you find yourself in a water emergency.

The technique is characterized by adopting the fetal position to lessen heat loss. Grab the front or back of your knees and keep tight. (This cannot be accomplished effectively without a life vest or flotation aid.) Don’t squeeze too strongly-this is exhausting and will waste precious calories-a moderate grip is sufficient. Once you have a grasp, simply lean your head back and go with the flow. The HELP position minimizes water flow across the body, which lessens heat loss to the environment and provides a valuable extension of survival time. **(to page 39)**