

# Circum-Rescue Collapse



## Jason's Cradle® Man Overboard Solutions

**Circum-Rescue Collapse** is something about which all of us should be extremely concerned. Understanding the principles of **Circum-Rescue Collapse** can, and will, save lives.

For as long as man has gone to sea in ships too many seamen have been mysteriously dying following rescue from immersion in water. Anecdotal accounts seemingly well survivors being rescued conscious only to die a short time afterwards aboard. It was commonly known as "dry-drowning", which includes other conditions. Over the years many conflicting theories have been put forward as to a cause. However, there is now a general consensus as to what triggers **Circum-Rescue Collapse**.

The following is an attempt to describe the set of circumstances, and the physiological changes that take place in the human body, both during the following immersion in water, that bring about **Circum-Rescue Collapse**.

- A body is immersed in water with the head above the surface.
- Blood in the vessels outside the chest is now surrounded by a medium of about the same density, causing it to become weightless.
- Hydrostatic pressure, greater in the lower parts of the body, reduces the volume of blood there, but **does** provide circulatory assistance to supplying the heart and brain with blood - rather similar to the benefits provided a fighter pilot by a 'G' suit.
- It is this redistribution of pressure over the surface of the body, on moving from air to water, that produces a number of physiological changes - the most significant of which is the redistribution of blood to the upper part of the body.
- This condition is exacerbated if the water is cold, since the cold-induced constriction of blood vessels at the lower extremities further increases the flow of blood to the central core of the body.
- THESE EFFECTS ARE GREATEST WHEN THE BODY FLOATS VERTICALLY AND LEAST WHEN IT FLOATS HORIZONTALLY.
- When the body is removed from the water in a typical rescue operation i.e., in a vertical attitude, the hydrostatic assistance to the circulatory function is lost at precisely the time the full effect of gravity is being re-imposed on the body.
- Furthermore, the body's blood volume may now be adequate for the air environment in which it suddenly finds itself. This is because the blood volume decreases during cold exposure due to (Cold-induced diuresis, causing dehydration) this takes place over a period of time.
- Pooling of the blood in the lower abdomen takes place.
- A cold heart plus reduced blood volume and increased blood viscosity may mean the heart cannot correct the fall in blood pressure caused by removal from water.
- There is an inevitable time delay before the heart can make the necessary adjustments to the circulation during which the brain may be starved of blood. (In cases of fatalities the body never makes this adjustment). This can have catastrophic results, especially if the survivor is climbing a ladder or perhaps is alone in some form of winching strap. A blackout could cause the would-be survivor to fall back into the sea and drown.
- In the worst-case scenario, during this same time delay. the coronary arteries may also be deprived of blood. This could result in a heart attack, or even death.
- THE LONGER THE DURATION OF THE LIFT (GREATER THE HEIGHT ABOVE WATER THE SURVIVOR IS BEING LIFT VERTICALLY), THE GREATER THE THREAT OF THIS COMPLICATION.

**Circum-Rescue Collapse** is a new name for a very old problem. The available evidence leads to the conclusion that the condition, although greatly aggravated by hypothermia, is primarily cardiovascular in nature. It also concerns heart and circulation.

IT CAN BE ALLEVIATED CONSIDERABLY BY RECOVERY IN A HORIZONTAL ATTITUDE. THIS REDUCES THE EFFECT OF GRAVITY.

\*Source of information  
Review of Rescue and Immediate Post Immersion Problems  
Written by: Mike Tipton, Frank Gold and G. David©

JASON'S CRADLE enables the rescuer to tackle this specific problem in a professional and timely manner  
-after all, it's ATTITUDE that counts!

## Jason's Cradle® MOB systems

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