



## Sudden Immersion and Cold Water Shock

### California State Parks, Division of Boating and Waterways

[www.BoatCalifornia.com](http://www.BoatCalifornia.com)

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While California generally experiences mild winters, when storm clouds roll in, many waterways become dangerous for boating enthusiasts. Cold, swift water can be treacherous for boaters accustomed to hot weather and low or slow water. Reservoir releases can fluctuate bringing sudden, cold water from the bottom of snow-fed streams. Even on a hot day, sudden immersion in cold water can bring on shock and paralysis. Learn about cold water and prevention:

### Stages of Cold Water Shock (Immersion)

**Cold water shock.** A person has one minute to adjust to the cold shock response – don't panic, get control of breathing, don't gasp.

**Swimming failure.** A person has about 10-minutes of meaningful movement to get help and get out of the water. A person has about one hour before they become unconscious from cold-water immersion.

**Post-rescue collapse.** A person "gives up" and collapses after or right at the time of rescue.

### Do's and Don'ts of Cold Water Boating

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- Do make sure everyone is wearing a life jacket. Even experienced swimmers will experience cold water shock within one minute in frigid water and lose muscle control within 10 minutes.
  - Do file a float plan with someone trusted that includes details about the trip, launch area, marina, boat, passengers, towing or trailer vehicle, communication equipment, and emergency contacts. Download a free float plan template at [floatplancentral.org](http://floatplancentral.org).
  - Do dress properly for the weather, always wearing layers, and bring an extra set of clothes. Remember, dress for the water temperature, not the air temperature.
  - Do control breathing, don't gasp. A sudden unexpected fall into cold water causes an involuntary gasp (or torso) reflex. It takes less than ½ cup of water in a person's lungs to drown. When someone remains calm, they have a greater chance of self-rescue.
  - Don't panic if fallen into the water. Stay afloat with the help of a life jacket, regain control of breathing, and keep head above water in view of rescuers. If possible, remove heavy boots if in the water. Look for ways to increase buoyancy. If in the water with others, huddle together facing towards each other to help everyone stay afloat and keep warm.
  - Don't apply heat to extremities like arms and legs of a rescued victim. This sudden change in temperature could cause cardiac arrest.
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