



# Aquatic Consulting Services

356 Sumner Ave. • P.O. Box 1418 • Avalon • California • 90704  
Santa Catalina Island • (619) 602-4435 • alison@alisonosinski.com

## Pool Tip #13: Floating in Fresh Water vs. Salt Water

Weight of water is what causes a person, or any other object to sink or float. Fresh water weighs approximately 62.4 pounds (28.3 kg) per cubic foot (0.028 cubic meters). There are 7.48 gallons (28.3 liters) per cubic foot, so one gallon (3.78 liters) of fresh water weighs approximately 8.33 pounds (3.77 kg). Weight of water varies depending on temperature and impurities such as salt and minerals dissolved in it. Therefore salt water is heavier than fresh water, so it can support more weight.

Again remembering Archimedes' Principle--you will sink if your weight is greater than the weight of the water you displace. You have to push away, move aside or displace water to get in it. If the weight of the water you displace is greater than or equal to your weight, you will float. For example, a 150 pound (68 kg) person who displaces three cubic feet (0.085 cubic meters) of water (or 192 pounds or 87 kg of water) will float. And, they will float better, the more dense the water.

Although as a generalization, women do float better than men, other categorizations such as age, height, and race have nothing to do with swimming ability. Anyone, regardless of physical abilities or limitations, can learn to swim. The main factor influencing buoyancy is body composition--percent of body fat in ratio to muscle density.

To increase buoyancy and ability to float, and reduce drag through water, relax. Tenseness inhibits buoyancy and forward movement. Muscles not being used to accomplish the desired movement should be relaxed. Don't thrash. Displace more water. Change your breathing pattern. Although rhythmic breathing will promote relaxation for distance swimming, explosive breathing will increase chest volume, spread weight over a greater area, displace more water, and therefore increase buoyancy. Move centers of buoyancy and gravity closer together. Arch your back, put your arms out or behind your head, bring up your legs. Use propulsive movements. Also, if you're moving forward, you will overcome the force of gravity which tends to cause denser body segments such as the legs to sink.