

Hyponatremia -- what is it?

Hyponatremia means a low concentration of sodium in the blood. When it occurs in triathletes, it usually happens during long or ultra-distance races in the heat but may occur anytime. It is estimated that approximately 30% of the finishers of the Hawaii Ironman are both hyponatremic and dehydrated. The longer the race, the greater the risk of hyponatremia.

What causes it?

The exact mechanisms are not fully understood and I won't go into the complex physiologic pathways of sodium and water balance. The simplest answer is that lost sweat (salt and water) is replaced by ingested water (no salt). This dilutes the sodium in the bloodstream, and hyponatremia results. Longer races carry a greater risk of hyponatremia because of the total amount of sweat lost. During exercise in the heat, more salt is lost in sweat per hour than is usually replaced by food and fluids, including sports drinks. Your body can tolerate a degree of imbalance for a short period of time, but it may decompensate if this continues for too long.

Sweat contains between 2.25 - 3.4 grams of salt per litre, and the rate of perspiration in a long, hot race can easily average 1 litre per hour. So, for a 12 hour race, one could lose approximately 27 to 41 grams of salt. If the athlete replaces only the lost water and has minimal salt intake, hyponatremia can result.