



The Drought is Over

Fueling up

Dehydration, electrolyte imbalances and glycogen depletion are all factors in fatigue.

Developing strategies for food and fluid intake before, during and after exercise is critical to the success of all sports and fitness participants.

Proper delivery of energy substrate and fluids can be the difference between first and last place for the competitor or a productive versus non-productive workout for the fitness buff.

Naturally hydrating

To put things in perspective, the typical sedentary human has no trouble accurately replacing the approximate loss of two to three liters of fluids they use daily. An athlete training in hot temperatures can use the same amount in one hour and must strategically plan the hydration process because the training environment disrupts the innate thirst triggers and the ability to consume fluids.

Unnaturally dehydrating

Most of you have heard me say that there is nothing natural about competitive sports. The physiological and psychological boundaries are constantly being pushed and hydration is no exception.

If you are not properly hydrated, you will not perform to potential, even if exercise is only a few minutes. So obviously, the longer the task the greater decrease one will experience in performance when fluid levels are inadequate.

The sensation of thirst occurs when the water deficit is approximately two percent of body mass. Performance can start being impaired at a water loss of one percent, suggesting our natural mechanisms cannot keep up with exercise-induced fluid losses in order to maximize training outcomes. In other words, performance is affected before we trigger thirst.

In case you are wondering how performance is impaired by small fluid deficits – part of it is probably the decrease in plasma volume. Since that's how we deliver oxygen to the working muscles any reduction would hamper performance. However, there is more.

Strategically re-hydrating

In the perfect world, fuel (glucose), water and electrolytes would stay constant during training. Fortunately, that doesn't happen because it would mean something else would have to signal us to stop at some point and I don't even want to guess what that might be. But trust me, it would be bad.

When we lose fluids, especially during exercise, we also lose electrolytes and use glycogen. Therefore, proper intake of all three is the formula for hydration.

Electrolytes (especially potassium, sodium, chloride and magnesium) play key roles in muscle and nerve function and also help regulate water distribution in various body water compartments. Glucose is the body's primary fuel and helps regulate heat and should always be included in the rehydration strategy to improve performance.

To be sure, rehydration during prolonged exercise is better accomplished with a mixture of carbohydrates, electrolytes and water than by H₂O alone. In other words, simply replacing the water portion of your losses is less effective than replacing the complete contents of losses because each component has its own contribution to regulating hydration, energy and thus performance.

Bottom line – Bottoms up!

In order to maximize performance, hydration plays a key role. Our natural thirst triggers are not adequate to keep pace with fluid needs during prolonged exercise, especially in hot climates, making it necessary to plan our hydration process.

And I don't need to tell you we have done our homework on hydration formulas and customized one for workouts and events that last 60-90 minutes. That, of course, is the Apex Energy RTD spiked with caffeine.

If a body-fat-loss goal is combined with your performance goal, just make sure you count the calories. But the extra energy output from remaining properly hydrated should certainly burn those calories and more.

So, make sure you hydrate *before*, during and immediately following exercise in order to maximize training outcomes.

One last reminder – oh, never mind – you know it by now.

Until next month, *Neal*

Other Fluid Recommendations

- Athletes should consume 500ml (16 oz) 2 hours prior to exercise.
- On warmer days, drink an additional 8-16 oz 30-60 minutes prior.
- Drink 20-40 oz of fluid for every hour during exercise.
- Post exercise fluid intake should be approximately 20 ounces for every pound of weight loss.
- If exercise is greater than 60 minutes, a sports drink with 6-8% CHO solution is recommended.
- Beverage should be cold, palatable, may contain CHO and sodium chloride.