

Why ELECTRO DELYTES?

For sustained and prolonged activities, particularly in the hot weather, we were looking for an alternative to gels, bars, and other drinks. We were most interested in finding something that would be easy on the stomach (low fiber, high carbohydrate) that would also taste great. My own experience in the *Ironman triathlon* reinforced this concept. For example, the only thing my stomach could tolerate on the marathon portion of the *Ironman* was flat Coke and pretzels. The gels and energy drinks were fine early on in the race, but after time, my gut just couldn't handle this stuff.

Why carbohydrates?

Its all about carbohydrates (CHO) when it comes to nutrition for events like the *Ironman*. Your body stores are simply inadequate to maintain energy output for more than the 10 hours or so to complete this event. So, you must consume CHO during activity. In other words you have to eat or drink something with CHO to survive an event like this.

What are some of the important factors that determine the ability of the gut to absorb CHOs during exercise?

The three most important factors that influence CHO absorption are the following: 1) the intensity of exercise; 2) your body's hydration status; and 3) the concentration of CHO in the stomach. It turns out that as you increase the intensity of exercise, you decrease the ability of the gut to absorb CHO energy. Further, if you become dehydrated, you progressively lose the ability to absorb energy from CHO in the stomach. Finally, the higher the concentration of CHO in the stomach, the lower the absorption rate of CHO. SO the bottom line is this to maximize your CHO absorption: Slow down, stay well hydrated, and take in small quantities of CHO during exercise.

What are some of the common nutrition mistakes that athletes make during racing in prolonged events (like the Ironman)?

There are three common mistakes: 1) taking in too much CHOs during the race, 2) eating fuel sources with high fat and/or high protein (like a cheeseburger), and 3) changing your fuel intake during the race from what you have practiced during training.

What are some nutrition suggestions for prolonged races?

Consume most CHO as simple sugars. This may sound like it goes against some of the current advice about taking in protein, but that's not the point. You probably should take in some protein, but most of the energy intake should be taken in the form of simple sugars. Many elite athletes have found out this secret. Frankly, we all do this – we're eating Pop Tarts, jelly beans and cookies in addition to the protein drinks and bars. Another common mistake is taking in too much during a race. Ideally, you want to consume the bare minimum during the race. Remember, if the CHO concentration is too high in the stomach, it will inhibit the absorption of CHO during racing.

What about electrolytes?

Given the assumption that a normal 70kg athlete will lose about 40 mmol/L of sodium (Na) loss for each liter of water loss, a rough estimate would be something like 1 gram of Na (and other electrolytes) will be required each hour of exercise. In other words, **it is essential to consume one gram of Na plus other electrolytes** in the form of sports drinks, supplements or food during an Ironman race or similar event. To put this into perspective, over a 12 hour race, you would need to consume something like 12 L water, 11 grams of sodium PLUS ~ 720 grams of CHO. **The challenge is to do this all without stomach upset (gastric emptying problems).**

What are some good sources of electrolytes?

Most sports drinks contain varying concentrations of electrolytes, and are considered to be some of the best sources for obtaining electrolytes during prolonged physical activity. However, during extreme heat, very long events, or for the athlete that sweats excessively, it will be critical to consume additional electrolytes. Therefore, electrolyte capsules, food supplements that contain electrolytes will be needed. The problem in doing this usually revolves around the ability for the gut to absorb or the athletes taste. For example, drinking a single sports drink for several hours sometimes brings on "taste fatigue" and the athlete will begin to dislike the taste.

How might ELECTRO DELYTES fit into an athlete's nutritional plan?

ELECTRO DELYTES were designed to do two things: provide simple CHO in a great tasting "sports candy" PLUS provide additional electrolytes in every serving. ELECTRO DELYTES are prepared from a very traditional – perhaps ancient recipe for "Turkish delights" – and we have added the best source that we could find of a combination of electrolytes, including sodium, potassium and magnesium. So for the athlete, ELECTRO DELYTES can make a good supplemental source of CHOs and electrolytes.

How might electrolytes (like magnesium) work to prevent muscle cramps?

Muscle cramps are caused by a number of factors, including dehydration, fatigue and tissue damage. While much is unknown about how muscle cramps occur, there is considerable basic science research that suggests one important factor in muscle

cramping is from free radical damage. Magnesium salts are known to inhibit certain types of free radical cellular damage, and therefore may be a good treatment or preventative measure for muscle cramping. **ELECTRO DELYTES contain magnesium**, and may thus be a reasonable source of magnesium supplementation during prolonged exercise. We suspect that by slowly chewing or sucking on ELECTRO DELYTES, you absorb some magnesium through the moist membranes in the mouth directly into the circulation. Magnesium is not well absorbed in the stomach – in fact it is the source of many laxatives used for constipation, like “Milk of Magnesia”.

What are some suggestions for using ELECTRO DELYTES during exercise?

My personal suggestion is to use Electro Delytes as supplements in your nutrition program, particularly later on during sustained activity when stomach upset and taste fatigue sets in. You should consume small amounts of plain water after taking each 45 calorie ELECTRO DELYTES cube to maximize your hydration status and ease the stomach. **Eating three cubes each hour will provide about 135 additional calories and electrolytes.** Electro Delytes should not be your only source of calories or electrolyte intake, but will **provide a delicious supplemental boost of quick energy.**

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