Electrolyte Replacement: Take it or Leave it

by Eve Pearson, RD, CSSD, LD, CPT

So you've heard the word electrolytes your whole life participating sports, and you know that you need electrolytes to perform, but what exactly are they and where do you get them? Electrolytes are simply ions that are concentrated in your bodily fluids: blood, plasma, and fluid between the cells, as well as sweat and urine. To the athlete, they are very important in muscle contraction, nerve impulses, and water balance. The major electrolytes you hear most often are sodium, potassium, chloride, calcium and magnesium. Sweat is mainly composed of sodium with a little potassium, which is why most sports drinks contain these two. Your body stores enough of the others for long bouts of intense exercise if your daily nutrition is good. Potassium is even stored in large amounts and shouldn't need supplementation until planned exercise is beyond 3-4 hours.

There are many different ways to increase your sodium levels to ensure that the balance of electrolytes is ideal for strenuous exercise. Simply enough, salting foods several days prior to an event or strenuous workout will suffice. Again, when the training session or race will be longer than 3-4 hours, you should have planned to consume extra sodium (500-900 mg depending on the person) with some potassium as well during the event. This can be accomplished through drinks, gels, bars, or food. For this newsletter, the focus will be drinks. Please see the comparison chart below and details to follow.

Product	Sodium (mg)	Potassium (mg)	Primary Energy Source	Concentration	Carbs (g)
Gookinaid Hydrolyte	69.3	99.7	Glucose	4.85%	??
Accelerade	190	64	Sucrose, Fructose, Maltodextrin	7.75%	26
G2O	189	30	Maltodextrin, fructose	5.70%	30
Cytomax Energy Drink	60	112	High Fructose Corn Syrup, maltodextrin	6%	20
PowerBar endurance	480	25	Maltodextrin, fructose	4.70%	42
Ultima Replenisher	75	150	Stevia Extract	1.70%	9
Nuun	260	100	none	N/A	N/A
Hydro-Boom	160	50	maltodextrin, sucrose	8.50%	17
Amino Vital	200	100	Fructose	6.20%	32
Enervit	46.5	45	Fructose, Maltodextrin	7.60%	28.5
Gatorade Endurance	200	90	Sucrose, Glucose, Fructose	6%	14
Powerade	79	49	High Fructose Corn Syrup, glucose polymers	8%	29
Allsport	100	75	High Fructose Corn Syrup	9%	30
e Load	370	96.5	Dextrose, Sucrose	5.90%	27

Note: Product information was gathered from product labels

Electrolyte Replacement Drinks

There are many points to keep in mind when choosing an electrolyte replacement drink: the amount of electrolytes it contains, the primary source of sugar, and the concentration of carbohydrate/sugar. For example, fructose has been known to delay gastric emptying leaving some athletes with bloating or stomach discomfort. Having said that, it would be wise to make

sure the first ingredient on the product you're using is not fructose. The concentration of carbohydrate is also important in the decision. The ideal concentration is between 6-8%. From the discussion of electrolytes at the beginning of the article, potassium isn't near as important as sodium considering the body's ability to store it. Therefore, a higher sodium content is ideal when choosing a product. With these guidelines, and from the comparison chart, the athlete should first choose Accelerade, Nuun, Gatorade Endurance, or e Load. However, note that because Nuun contains no source of carbohydrate that there should be another source of carbohydrate available in addition to the drink. Hydro-Boom and Gu2O would follow up as a secondary choice if the others are not available. If you are currently using Cytomax, Amino Vital, Enervit, PowerAde, or Allsport, consider making another choice next time you're at the store.

Remember that the amount of calories in each product should be accounted for in your hourly calorie needs while training. If you don't have a plan or don't know how many fluids and/or calories, as well as grams of carbohydrate you should be consuming during training, give Eve Pearson, RD, CSSD, LD a call at 817-371-7262 for your free consultation!