
ALL ABOUT SPORTS BEVERAGES

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Just like all other grocery decisions, there are now dozens of “sports beverages” to choose from. When we think of sports beverages the first one that typically comes to mind is the “Gatorade”. Although they were not the original creator of the idea of performance enhancing beverages, they became the largest and made the idea into a multi-billion dollar industry. The original concept of a sports beverage was based on two things: replacing electrolytes to improve hydration and to replace glucose (sugar) to provide longer lasting energy during intense exercise. For this reason the basic formula for a proper sports beverage is water + salt (and other electrolytes) + sugar. With the emergence of newer formulations of sports beverages including; sugar free, “natural”, and low calorie, it can make what was once an easy decision, much more complex.

Before we dig further into how to choose the best sports beverage for your needs, there are a few things you should know about how the body works.

- Sweat is made up of a combination of water and electrolytes with the highest concentration of electrolytes coming from sodium and chloride (in the form of sodium chloride which is what your table salt is made of). This is the reason why if you ever accidentally tasted your sweat, it probably tasted salty. Sweat also contains much smaller amounts of electrolytes including magnesium, potassium, and calcium.
- Electrolytes simply defined are minerals that carry an electrical charge. This electrical charge allows water to cross cell membranes therefor rehydrating those cells. At a certain point, after you have lost a lot of fluid through sweat, rehydrating with water alone will not rehydrate you quickly enough to sustain high intensity activity.
- When we do physical activity, there are two main places that we derive stored energy from.
 - ◇ The most abundant source of energy in the body is our stored bodyfat. We rely on bodyfat more heavily when we do lower intensity activity like long distance running or walking.
 - ◇ The second main source of stored energy in the body is our “glycogen”, which is basically sugar that is stored in our muscles and liver that we can also use for energy. We rely more heavily on this form of energy during higher intensity exercise or stop and go sports-such as soccer, football, running bleachers, etc. It takes roughly 90 minutes of high intensity exercise to almost deplete muscle glycogen. When this happens, our ability to perform decreases-which translates into running slower, not being able to exert as much force, and generally being weaker. For this reason, sports beverages contain a certain amount of sugar. This sugar is meant to replace the sugar you are using for energy.

Now that we understand a little more about what is happening in the body during physical activity, let’s discuss some of the sports beverages that are available today and how to pick the right one!

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Gatorade and Powerade	Gatorade® and Powerade® currently dominate the sports beverage market. The basic recipe for success in both beverages is water + sugar + electrolytes. There are some slight differences, however both beverages are “6% carbohydrate solutions” which means they contain about 21 g of sugar per 12 fluid ounces. The proportion of sugar to fluid has an impact on the body’s ability to absorb it. Most research suggests that a concentration of 6%-7% of glucose has the most benefit on endurance and energy replacement.
Lower Calorie Alternatives	G2® hydrates with similar amounts of sodium and potassium as the original Gatorade, but has less than half the carbs and calories of the Original G. It is sweetened with a combination of sugar; and sucralose which is an artificial sweetener. G2 contains 30 Calories per 12 fluid ounces. Powerade Zero® contains no carbohydrates or sugar and is sweetened with sucralose only. Both G2 and Powerade Zero contain similar amounts of sodium and potassium. Powerade Zero® also is enhanced with B-vitamins (niacin, B-6, and B-12), whereas G2 is not. While B-vitamins do play a role in converting what we eat into energy, there is not any solid research to show that consuming B-vitamins during physical activity has a significant effect on performance. On the other hand, it would not hurt performance. Both beverages would be suitable for lower intensity exercise where replacing electrolytes is more important than replacing glycogen. This would be especially true if working in a hotter climate where you are sweating a lot but not necessarily do high intensity work. Another factor to consider is that both of these use an artificial sweetener which causes gas and bloating for some people as well as other side effects. Artificial sweeteners are also a hotly debated topic amongst the media and healthcare professionals which has led to inconclusive recommendations. However, this topic goes beyond the scope of this article.
“Natural” Alternatives	With the growing concern over food dyes and artificial ingredients, there is an increased demand for products with more natural ingredients. Organic Honest Sport® is a new sports beverage that uses organic cane sugar and does not use artificial dyes or ingredients. It has slightly less sugar and more electrolytes than Gatorade and Powerade. Gatorade launched Gatorade Organic® ; a sports beverage with similar nutritional characteristics to the original Gatorade but made with only seven ingredients including cane sugar and sea salt. The newest Coca-Cola product, Vitamin Water Active® is another more “natural” alternative sports beverage. It contains similar amounts of electrolytes and sugar to Gatorade and Powerade. Ingredients include cane sugar and coconut water; and is also enhanced with 100% DV of many B-vitamins. Body Armour® contains similar ingredients to Vitamin Water Active, however this beverage contains about 7 times more potassium than Gatorade® and Powerade® and very little sodium compared with traditional sports drinks. Body Armour® is more similar to coconut water than a true electrolyte beverage. Considering that sodium losses through sweat are considerably higher than potassium losses through sweat, Body Armour® and/or coconut water may not be the most suitable “sports” beverages; especially if working out at higher intensities or working in hotter climates. They may however make a nice alternative to other sweetened beverages for those who do not enjoy drinking plain water.

With all the options available for electrolyte beverages, keep in mind the two original problems that sports beverages were created to solve:

-Replace electrolytes– For this reason, if you are drinking a sports beverage to maintain performance level you want one that contains sodium.

-Replenish energy stores– Going sugar free is only a good idea if you are using this as an alternative to juice in the interest of weight management. If sports performance is a goal or if working at higher intensities for more than 60 minutes, you will want to try one that contains sugar. Remember that sugar is not always a bad thing if it is serving a purpose.

There are plenty of other products available that were not mentioned in this article. But now that you know what to look for, hopefully you will have an easier time navigating what is out there. My personal top three choices for sports beverages are Organic Honest Sport®, Gatorade Organic®, and Vitamin Water Active®. All three meet electrolyte needs for most athletes, contain an appropriate amount of sugar and avoid artificial sweeteners and dyes. At the end of the day, the most important factor in selecting a sports beverage is knowing what you need from the beverage and evaluating your personal preferences.

References:

American College of Sports Medicine. Position Paper: Nutrition and Athletic Performance. *Medicine and Science in Sports and Exercise*. 2009; 41(3): 709-731.

“Fluids and Electrolytes.” *Advanced Sports Nutrition*, by Dan Benardot, Human Kinetics, 2012

