



Sports Drinks: Comparison Chart[©]

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What nutrients are in sports drinks? Most sports drinks contain carbohydrates in the form of simple sugars and electrolytes. The carbohydrates provide calories or energy for the body, while the electrolytes help to maintain body-fluid balance, aid in muscle contraction, cardiac performance and nerve impulse transmission. The electrolytes that are lost in sweat include sodium, potassium, chloride and bicarbonate. **CeraSport** contains rice carbohydrate, electrolytes and a base (citrate). Citrate is an efficient way to replace bicarbonate losses and helps to neutralize acidosis. When evaluating sports drinks it is important to review the nutritional composition of each product. The chart below compares a variety of sports drinks that are currently on the market.

In addition to the electrolytes and fluid lost during activity, energy is also lost and must be replaced. Carbohydrates are a primary source of fuel for the body during activity. The ingestion of carbohydrates during prolonged physical activity has been shown to delay the onset of fatigue. Effective fluid absorption is also dependent on the simultaneous availability of carbohydrate and sodium. Some sport drink products on the market contain excessive amounts of sugars but minimal or negligible amounts of complex carbohydrates. This may result in nausea, bloating and cramps and are thus not as efficient or effective as they could be. Some products contain large amounts of protein or amino acids. Protein does repair muscle cell damage following activity, but adequate amounts of protein can be consumed by eating protein rich foods, such as meat, beans or peanut butter immediately (within an hour) following activity.

Rehydrating properly means replacing what has been lost through sweat in amount and composition. Fluid and electrolytes are lost in sweat. Carbohydrates provide fuel for energy during physical activity and aid in efficient water absorption.

Product Serving Size 8 FL OZ (240 mL)	Calories	Total Carbohydrates (g)	Sugars (g)	Sodium (mg)	Potassium (mg)	Fat (g)	Protein (g)
CeraSport[®] (all flavors)	40	10	2*	100	37	0	0
CeraSport EX1[®] (all flavors)	20	5	1*	200	100	0	0
Gatorade [®] (Frost)	50	14	14	110	30	0	0
Tiger Gatorade [®] (Red Drive)	50	14	14	135	40	0	0
G2 [®] (Grape)	25	7	7	110	30	0	0
Propel Fitness Water [®] (Berry)	10	3	2	35	n/a	0	0
POWERade [®] (Fruit Punch)	60	15	15	52	32	0	0
PowerAde Option [®] (Strawberry)	10	2	2	55	35	0	0
PowerAde Zero [®] (Strawberry)	3	0.1	0.1	55	33	0	0
Accelerade [®] (Fruit Punch)	80	15	14	120	15	0	4
Vitamin Water [®] (Power-C)	50	13	13	0	n/a	0	0
CamelBak Elixir [®]	<5	<1	0	136	23	0	0

CeraSport[®] is based on a patented rice-based carbohydrate with small, medium, long and extra long chains. Most other products on the market contain only molecules of simple sugars, such as glucose, sucrose, fructose and dextrose. The longer the carbohydrate chain, the longer it takes to digest. The mixed chain rice carbohydrate in **CeraSport[®]** is broken down and absorbed continuously. This provides both quick energy and enhanced water absorption, as well as sustained hydration.

**Sugars in CeraSport and CeraSport EX1 are derived from rice.*

Why Hydrate? And, with what?

Multiple factors can influence an athlete's sweat rate, such as temperature, intensity and duration of exercise, body size and composition, and gender. Fluid replacement is essential in minimizing dehydration since only a 2% loss of body weight via sweat can lead to a decline in performance. Rehydration is important to restore body-fluid balance. Dehydration leads to a decrease in blood volume. Low blood volume can cause headaches, weakness and muscular cramping (belly and legs).

Hydrating with water is not enough since it lacks the electrolytes (sodium, potassium, chloride, etc.) that your body needs. CeraSport contains mixed chain rice carbohydrates and electrolytes which help stimulate sodium and fluid absorption. Rice carbohydrates in CeraSport

Calorie/Osmolarity/Salts Comparisons					
Product	Sugar-Free Sports Drink (CeraSport®)	CeraSport EX1	Typical Sports Drink	Colas	Water
Calories	40	20	50-60	100	0
Electrolytes - Sodium (mEq/L)	20	35	16	2	0
- Potassium (mEq/L)	5	10	3	0	0
- Osmolality	<150	<200	365 or more	800	5

stimulate a timed response assisting the body in salt and water absorption and avoiding a short-lived sugar high, found in typical sports drinks.

Osmolarity: What Does It Mean to You?

Osmolarity is a scientific term that refers to the concentration of particles dissolved in a fluid. This is important because it impacts performance among athletes or anyone else who loses fluids through sweat. Anyone engaged in high sweat loss activities should

choose to drink fluids, such as CeraSport, with a low osmolarity and the right blend of electrolytes to optimize performance.

Your blood has an osmolarity of 300 milliosmoles per liter (mOsm/L). Any fluid with an osmolarity below 300 is absorbed quickly and effectively. Unfortunately, most popular Colas and Sports Drinks have an osmolarity above 300 due to their high sugar concentration. Fluids with an osmolarity higher than 300 mOsm/L (such as Colas and Gatorade) will not be well tolerated and may cause diarrhea or vomiting.

Proper rehydration requires replacement

of both water and electrolytes in proportion to what the body has lost. The problem with most sports drinks and soft drinks is that they are high in sugar, and thus osmolarity.

CeraSport has low osmolarity because it is formulated with a patented mixed-chain rice carbohydrate rather than simple sugar, and has the right amount of needed salts to replace losses due to sweat. CeraSport gives people what they need for quick recovery and for sustained performance. Try CeraSport during training and see for yourself. ■

Hydration Tips

Hydrating with water is good; however, only drinking water is not sufficient. Water lacks the electrolytes the body needs. CeraSport contains a mixed blend of rice carbohydrates and the needed electrolytes. The combination of the carbohydrates and the sodium stimulate the absorption of fluids by the sustained release of glucose in the gut.

- ▶ Replacing between 125 to 150% of fluid lost is recommended after exercise.
- ▶ Each pound lost during exercise should be replaced with 20-24oz of fluid.
- ▶ Two liters of fluid consumed in 500 ml amounts every 20 to 30 minutes is an effective rehydration strategy.
- ▶ Slowly drinking CeraSport overtime is more beneficial for rehydration than consuming a large volume of fluid immediately after activity.

Rice carbohydrates in CeraSport stimulate a timed response assisting the body in absorption and avoiding a short-lived sugar high as found in typical sports drinks. CeraSport provides sustained, prolonged, and thus superior hydration.

Recovery Tips

- ▶ Consuming low-fat protein rich foods, such as lean lunch meat or protein bars, help to stimulate protein synthesis and maintain blood glucose.
- ▶ Combining protein with carbohydrates nearly doubles the insulin response, resulting in more stored glycogen.
- ▶ Studies show that athletes who refuel with a carbohydrate/protein mix had 100% greater muscle glycogen stores than those who only had carbohydrates.

Quinn, Elizabeth. "What to eat after exercise to replenish muscle glycogen." *Sports Medicine*, 2006.