



SUSTAINED

Keep moving for longer. All the key electrolytes to keep you hydrated and more.◊

During Workout – Electrolyte Hydrator



Mixed Berry Flavor



Be Sustained is a unique endurance enhancing supplement that addresses key factors involved in increasing peak performance for the everyday athlete. Whether it is that long marathon, intra workout weight training or the need to sustain and increase peak performance, Be Sustained will take your effort to the next level.◊

One of the key factors of peak endurance enhancement in Be Sustained is based around creating optimal hydration with all the key electrolytes. Sodium, Potassium, Calcium, Magnesium, Chlorides and phosphorus are all included in the proper ratios that will help optimize cellular and intracellular fluids, thereby increasing hydration and prevent muscle cramping.◊

Be Sustained also includes branched chain amino acids to prevent these key nutrients being stripped from muscle to be used as an energy source during intense exercise. BCAA's are a critical part of decreasing muscle catabolism during intense exercise, improving recovery time and decreasing soreness.◊

Another key factor in optimizing peak performance is to sustain blood sugar during exercise. Be Sustained's low glycemic blood sugar support blend of Trehalose and Agave is critical to maintaining performance in the muscle cell, to maintain blood sugar and sustain adrenal function to increase performance.◊

Be Sustained also increases time to exhaustion with clinically proven Carnosyn® Beta Alanine which helps improve muscle carnosine levels, and creatine, which increases the muscle

reservoir of phosphorus, necessary to maintain a high production of Adenosine triphosphate (ATP) a critical factor in cellular energy optimization and muscle functioning.◊

Get through your toughest challenges by making sure you sustain your energy to help maintain your focus, push harder, and last longer with Be Sustained endurance formula.

Beta-alanine and Creatine

Be Sustained repeats the 1.6 gram serving of the amino acid beta-alanine, one of the key ingredients in our pre-workout formula Be Focused. You can read in more detail in the Be Focused Product Information sheet about the role of beta-alanine in the production of the crucial dipeptide called carnosine, in high energy tissues, such as skeletal muscles, heart, eyes, and brain. Dividing the intake of beta-alanine between the pre-workout formula Be Focused, and our endurance formula Be Sustained, reduces the frequency and intensity of a diffuse reaction of nerves in the skin, called 'parasthesias' (various described as 'tingling', 'numb', 'itchy', 'burning', among others), which is also described in more detail in the Be Focused Product Information sheet. For particularly

sensitive people who don't like the sensation, it may be necessary to divide Be Sustained into two 1 scoop servings about 20 minutes apart rather than 2 scoops together. However, the majority of people don't experience parasthesias after taking 1.6 grams of beta-alanine, and for those who do, this harmless side effect decreases over time for most people with continued supplementation of beta-alanine, while muscle, brain, heart, and eye tissues continue to increase their reserves of carnosine, a peptide with both athletic performance and healthy aging benefits.◊

Be Sustained also adds another 500 mg of creatine monohydrate, which Be Focused provides at a level of 3 grams. This adds a bit more to the muscle 'pool' of creatine, which functions in muscle as an intermediate carrier of phosphorus (creatine phosphate), which, during physical exertion, must be constantly re-supplied to adenosine monophosphate (AMP) and adenosine diphosphate (ADP) to produce more adenosine triphosphate (ATP), which is the major fuel for muscle function.◊ The breaking of the high energy phosphorus bonds in the ATP molecule is analogous to lighting a match (a process which also depends on phosphorus). When ATP supplies are depleted and

◊These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

there is not enough phosphorus available in the tissues to re-make ATP from AMP and ADP, the muscle, heart, or brain is no longer able to continue performing at a high level, and rest becomes imperative. Supplementation of creatine increases the amount of this key compound in muscles, and facilitates a greater ability of muscle tissue to maintain high energy phosphorus for restoring ATP, the fundamental energy currency of all body cells and tissues.⁵ Creatine is synthesized by the human liver, from the 3 amino acids arginine, methionine, and glycine, and can also be obtained both through diet and supplementation. A pound of meat supplies about 1 gram of creatine. This versatile compound has also been shown to have diverse positive effects over the past decade, including:

1. Acting as an antioxidant. Research has shown that creatine and creatine phosphate in muscles is an effective scavenger of superoxide and peroxynitrite free radicals, but not of hydrogen peroxide, nitric oxide, or lipid peroxides—all of which are important signaling molecules for many of the beneficial adaptive responses of the body to exercise—so it's good that creatine does not neutralize hydrogen peroxide, lipid peroxides, or nitric oxide.¹
2. Improving glucose tolerance.²
3. Improving peripheral blood flow and increasing resting energy expenditure.³
4. Diminishing myostatin activity. Myostatin is a regulatory protein that inhibits muscle growth.⁴
5. Improving cognitive performance—in healthy 45 year olds, 6 weeks of creatine supplementation significantly improved tests of working memory and intelligence (both tasks which require significant processing speed) above each person's presupplementation baseline, suggesting that such tasks are related to brain energy capacity.^{6,5}

Branched Chain Amino Acids and Glutamine to support high sustained athletic performance

Equally crucial to endurance, is a ready supply of a specific class of amino acids referred to as 'branched chain amino acids' These 3 amino acids are known as leucine, isoleucine, and valine. They are 3 of the 9 'essential amino acids', meaning that the body cannot make them, so they

must be supplied in the diet. Leucine is the single amino acid with the greatest impact on stimulating muscle protein synthesis in response to exercise—it is 10 times more active in this regard than any other amino acid. Hence, Be Sustained supplies leucine in a 2:1 ratio to the other 2 branched chain amino acids (isoleucine and valine), as does our Lifeplus post-workout product, Be Recharged.⁹

Different forms of exercise affect muscle protein turnover in different ways. Cardiovascular training (endurance exercise) decreases the rate of skeletal muscle protein synthesis and increases the rate of muscle protein breakdown⁶ (Resistance exercise, on the other hand (such as weight training) both stimulates muscle protein synthesis and also increases the rate of muscle protein breakdown, which is referred to as a 'net negative protein (or nitrogen) balance'. It has been shown that for protein balance to become positive (protein building greater than protein degradation), dietary protein, and specifically the amino acid leucine must be consumed, and that protein balance will remain negative until leucine levels increase—either from consuming dietary protein post workout, or consuming the free amino acid leucine (which raises blood levels of leucine much faster than eating protein).⁷ It has also been shown that adding free leucine to a protein rich meal further increases muscle protein synthesis even more than does the protein rich meal alone.⁸

Supplementing with Be Sustained during exercise thus shifts muscle protein turnover from negative (breaking down) to positive (building up), even while you are exercising.⁹ Providing your body with a serving of Be Recharged after completing exercise, whether it be training or competition, continues to support this anabolic (building up process) of muscle protein, which over time results in bigger and stronger muscles which, due to their enhanced levels of carnosine and creatine, are also able to function at peak efficiency for substantially longer than they were prior to supplementation and training.⁹

In addition to dramatically supporting muscle protein synthesis, these 3 branched chain amino acids (BCAAs) appear to play an important role in mitochondrial biogenesis (the production of new mitochondria, which are the tiny organelles in every cell which produce

ATP, the fundamental energy currency for all cells).⁹ It has been reported that oral supplementation with BCAAs stimulated mitochondrial biogenesis and increased the average life span of middle aged mice.⁹

Increasing muscle protein synthesis in response to exercise, and increasing production of mitochondria is an ideal strategy, both for elite athletic training and performance, as well as for healthy aging, since loss of muscle mass with normal aging (known as 'sarcopenia'), and the fatigue associated with reduced mitochondrial numbers and function are both major contributors to frailty, falls, injury, and death in the elderly population. Clearly continuing healthy nutritional and exercise habits throughout the human lifespan, will increase the human healthspan, and keep us active, functional, and fit even into extreme old age. Even for the elderly who have lost much of their muscle mass and become frail, using these same tools (nutritional support and exercise) can often reverse frailty, and restore muscle mass, bone mass, and energy so that our elders can again become active partners in life with their children, grandchildren, and great-grandchildren, as well as with their community.

There is one more important amino acid partner in Be Sustained, which is called Glutamine. Because the body can synthesize glutamine, it was originally considered a non-essential amino acid (not essential to be provided in the diet). However, during times of stress, such as intensive athletic training and competition, such as for marathons and triathlons, the body's need for glutamine increases beyond the ability of the liver, muscles, lungs, and brain to produce it, and in such situations, dietary glutamine (including glutamine supplementation) becomes essential. Hence, glutamine is now considered one of the 'conditionally essential' amino acids—under conditions of high physical stress, it becomes an essential amino acid, meaning it MUST be supplied in the diet, or overall metabolism, ability to perform, recover, and heal will be seriously compromised. Inadequate supplies of glutamine can reduce performance, immune function, and mood.

Glutamine supplementation also helps promote cell 'volumization', which refers to the process of drawing water into

muscle cells, thus increasing muscle hydration, and also increasing muscle protein synthesis (making muscle protein), while decreasing proteolysis (the breakdown of muscle proteins). Intensive endurance athletic training and competition can also rob the intestinal tract of its glutamine (to send it to the muscles). Glutamine is crucial to maintaining the integrity of the intestinal epithelial lining, and loss of glutamine contributes to the development of increased intestinal permeability, commonly known as 'leaky gut'. Glutamine has also been shown to aid in recovery and recuperation, to boosting immune function, and it is also crucial as one of the 3 amino acids required for synthesis of the body's most powerful antioxidant known as glutathione (glutamyl-cysteinyl-glycine). In addition, glutamine appears to play a role in speeding recovery of muscle glycogen stores.^{9,10}

Cellular energy substrate support with citrate and malate

Citric acid, along with magnesium citrate and potassium citrate is provided (along with natural citrus flavor) in the citrus flavored version of Be Sustained. In the berry flavored version, malic acid is substituted for citric acid (and combined with natural berry flavor), though the magnesium citrate and potassium citrate (as sources of both potassium, magnesium, and citrate) are the same in both flavors. The citric and malic acids used in Be Sustained are both products of microbial fermentation—produced with purified water and non-GMO microorganisms which produce the desired product (citric or malic acid) in large quantities as a metabolic end product. This is done in a large bioreactor (not unlike the way that beer and wine are made), and the process is therefore isolated from environmental pollution, which would be unavoidable when sourcing such compounds from even organically grown fruit. Both citric acid and malic acid are key substrates for the cellular biochemistry that takes place in mitochondria, the tiny 'energy factories' of every cell, responsible for producing ATP.⁹

Electrolytes

Many athletic hydration drinks provide little more than sugar with some sodium and potassium. Be Sustained, provides 160 mg of sodium and 130 mg of potassium (vs 250 mg sodium and

65 mg potassium in a top selling brand, which also contains 35 grams of high glycemic sugars and artificial colors). In addition, Be Sustained provides 240 mg of chlorides, 20 mg of calcium (as calcium ascorbate), 50 mg of phosphorus, and 40 mg of magnesium (along with 10 grams of very low glycemic carbohydrate sources). To this, all that need be added is water, to maintain excellent hydration and electrolyte content of cellular and intracellular fluids to prevent muscle cramping and optimize muscle endurance and performance.⁹

Vitamins

One serving of Be Sustained supplies 90 mg of vitamin C (as calcium ascorbate) which is 150% of the daily requirement for vitamin C, 12 mg of vitamin B-6 in its activated form (pyridoxal-5-phosphate), which is 600% of its daily requirement, and 36 mcg of vitamin B-12 (as methyl-B-12), which is 600% of its daily requirement. Vitamins B-6, B-12, and vitamin C are all utilized as catalysts in energy production, so Be Sustained was formulated to ensure that they are present and easily mobilized.⁹

Sustain blood sugar with low glycemic Trehalose and Blue Agave powder

Trehalose, found in mushrooms, honey, lobster and shrimp, as well as foods produced with baker's or brewer's yeast, is a naturally occurring sugar, which consists of 2 molecules of glucose bound together. It is the primary sugar used for energy by flying insects during flight, possibly due to the fact that the enzymatic cleavage of trehalose results in 2 molecules of glucose, as opposed to the enzymatic cleavage of starch, which yields only 1. Humans, with rare exceptions have an enzyme in their small intestine which cleaves trehalose to glucose, however, the rise in blood sugar experienced by people who take the same weight of trehalose as glucose is dramatically slower, and it has a very small insulin response, as compared with glucose and sucrose (table sugar). Trehalose also protects the structure of proteins, and enhances flavors, though it is only 45% as sweet as table sugar. It is also a 'non-reducing sugar', meaning that it does not contribute to advanced glycation end products (meaning it won't stick to proteins). The 5 grams of Trehalose included in Be Sustained, provides a slow and long burning energy source

for athletic activity.⁹ Be Sustained also includes 5 grams of Blue Agave powder. Blue Agave is the sap produced by the cactus from which Tequila is produced. When dried, rather than fermented, it produces a sweet powder which is very low glycemic (meaning it is transformed into glucose in the blood quite slowly), to provide a smooth sustained energy source, with no spikes in insulin, which can later result in blood sugar crashes.⁹ Blue Agave powder is about 75% fructose and 20% glucose, with small amounts of inulin (a type of fiber) and mannitol, as well as small amounts of compounds called saponins. It is grown in the volcanic soils of central Mexico, without the use of chemicals, pesticides, herbicides, or chemical fertilizers.

Stevia extract is included as a natural non-nutritive sweetener, to enhance the flavor profile of Trehalose and Blue Agave powder.

Natural coloring agents

The citrus flavor of Be Sustained is colored yellow with pure, natural turmeric spice powder, a natural antioxidant and preservative. The berry flavor is colored with beet root extract which is rich in compounds called betalains, a group of phenolic secondary plant metabolites with intense red color, as well as strong antioxidant activity. Betalains have been shown to increase the resistance of low density lipoproteins to oxidation, among other benefits.^{9,11}

Synergy is the creation of a whole that is greater than the simple sum of its parts.

All these components—the slow burning carbohydrate duo of Trehalose and Blue Agave powder, all of the critical minerals that function as electrolytes (sodium, potassium, magnesium, calcium and phosphorus), the 3 branched chain amino acids (leucine, isoleucine and valine) as well as glutamine, creatine and beta-alanine, vitamins C, activated B-6, and methyl B-12, natural coloring and flavoring agents combine to make Be Sustained an all-natural nutritional support product for elite athletes, and senior citizens alike.⁹ The formula has been finely honed, so that every ingredient contributes, no single ingredient is present in massive quantities which could potentially create metabolic imbalances, and the overall effect is one of smooth, sustained support for the best physical performances of your life.⁹

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Supplement Facts

Serving Size / 2 level 15 cc Scoops (22.1 g)
Servings Per Container / 30

Amount per serving	% Daily Value	
Calories	77	
Total Carbohydrate	11 g	8%*
Dietary Fiber	0 g	0%*
Total Sugars	11 g	
Includes 11 g Added Sugars		22%*
Vitamin C	90 mg	100%
Vitamin B-6	12 mg	706%
Vitamin B-12	36 mcg	1500%
Phosphorus	90 mg	7%
Magnesium	20 mg	5%
Sodium	110 mg	5%

Amount per serving	% Daily Value	
Potassium	155 mg	3%
Amino Acids	7600 mg	**
CarnoSyn® Beta-Alanine	1600 mg	**
L-Glutamine	1000 mg	**
L-Isoleucine	1250 mg	**
L-Leucine	2500 mg	**
L-Valine	1250 mg	**
Creatine Monohydrate	500 mg	**

* Percent Daily Values are based on a 2,000 calorie diet.
 ** Daily Value not established.

INGREDIENTS: Trehalose, Blue Agave (*Agave tequilana* F.A.C. Weber), L-Leucine, CarnoSyn® Beta-Alanine, L-Valine, L-Isoleucine, Natural Berry Flavors, L-Glutamine, Creatine Monohydrate, Steviol Glycosides, Sodium Hexametaphosphate, Potassium Chloride, Malic Acid, Magnesium Citrate, Potassium Citrate, Calcium Ascorbate, Sea Salt, Beet Root (Color), Lecithin (Sunflower), Vitamin B-6 (Pyridoxal-5-Phosphate), and Vitamin B-12 (Cyanocobalamin).

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As with all supplements, please consult your physician prior to taking if you are pregnant or attempting to become pregnant, breast-feeding, under a doctor's care or taking prescription medication.

Allergy Information: This product is processed in the same facility that processes products containing fish/shellfish, soy and dairy.

This product was not tested on animals.

Store in a cool, dry place.

No artificial colors, artificial flavors, artificial sweeteners or preservatives.

Suitable for Vegans

Gluten Free

FOR BEST RESULTS, CONSUME DURING OR 30 MINUTES BEFORE YOUR EXERCISE.

DIRECTIONS: Mix two level 15 cc scoops (22.1 g) once per day with 8 oz (240 ml) of water or your favorite beverage. Shake well.

†These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

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