Sports Supplement Product Review

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Athletic Edge IntraXCell

The Original Carnosine/Glutathione Booster in Capsule Form

With literally hundreds of different supplements available and so many that are based on bogus claims and ridiculous hype, it's hard to find even one that delivers results. If you've rummaged through the garbage of the supplement scrap heap, you know that finding any science or real-world proof is almost impossible. Athletic Edge Nutrition's IntraXCell is the exception. Developed with research and solid scientific support instructions for guaranteed growth on its label and proven results in the bodybuilding and athletic sector, IntraXCell is a rarity in both the scientific and iron-pumping communities. You want hype? Take your pick of the litter. You want more strength, head-turning muscularity and wicked pumps? Take IntraXCell.

Below is a list of the benefits you can expect from IntraXCell. What follows the list is a head-on look at what make these claims a reality so you can't only look forward to these results, but also understand the rock-solid, peer-reviewed university research studies that back them up. Here are the claims set forth by IntraXCell:

- Boosts explosive muscular strength and endurance, forcing lean muscle gains;
- Increases intracellular carnosine levels and fights muscular fatigue and metabolic acidosis;
- Naturally boosts the powerful antioxidant glutathione and fights cellular fatigue, improving recovery and promoting growth.

The key ingredient in IntraXCell is beta-alanine. While beta-alanine is largely responsible for the majority of the performance benefits you gain from IntraXCell, there are many more contributing factors to the science of IntraXCell. First, let's look at what makes beta-alanine so special.

Background on Beta-alanine

Beta-alanine is a nonessential amino acid obtained through protein foods such as chicken, beef, pork and fish; it also naturally occurs in the body. Recently (2003) researchers have been studying beta-alanine, examining its effects on exercise performance and lean muscle mass. The man behind the initial studies on beta-alanine, Dr. Roger Harris, is the same man who brought creatine to the bodybuilding world. The legendary researcher is at it again, pioneering the early performance studies like he did with when he revolutionized sports nutrition with groundbreaking studies on creatine in 1992. It looks like the good doctor has found another juggernaut of a supplement in beta-alanine. With authorities such as Dr. Harris, and esteemed research scientists Dr. Jeff Stout and Dr. Mark Tallon publishing research on beta-alanine and backing its use as a performance-enhancement supplement, the research and bodybuilding communities are taking notice. Although the support of scientists of this caliber speaks volumes about the efficacy of beta-alanine, the science is even more impressive.

How does beta-alanine work?

Much of beta-alanine's effects come through boosting the synthesis of an intramuscular dipeptide (two amino acids) called carnosine. Carnosine is made up of two amino acids, beta-alanine and histidine, and is a powerful intracellular buffer. Carnosine was discovered in Russia in 1900, but it wasn't until over 50 years later that the first research on carnosine and its effects on muscle buffering where published. Carnosine is found in both type 1 and type 2 muscle fibers, though significantly in higher concentrations in type 2 fibers (the fibers we primarily use in high-intensity strength workouts and those that are most responsive to growth). To function effectively, muscle cells rely on buffers like carnosine to avoid becoming acidic (low pH) during exercise. If you want your muscles to remain strong and maintain powerful contractions, they need to be in an optimal pH range. If they don't, and the pH drops below that optimal level, you have significantly less strength and fatigue more quickly.

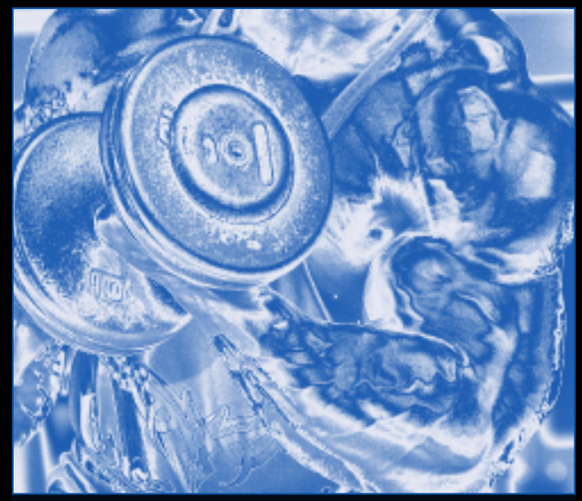
You know this is happening when you feel that familiar burn in your muscles, or even when you're lifting heavy and reach muscular failure. Muscle pH has dropped and it's largely a result of an increase in hydrogen ions (H+), which build up when you break down the high-energy compound ATP during exercise. Wouldn't it be nice to knock out a few more reps? If you had more carnosine in your muscles, you would. Without it, your energy and endurance decline rapidly and your strength suffers. The breakdown of ATP and the subsequent rise in H+ concentrations occur in our all of our energy systems, but is most prevalent in an energy system called glycolysis, which also produces lactic acid. Lactic acid releases H+ ions, contributing further to the pool of H+ that's filling your muscles from the breakdown of ATP. With the presence of H+, pH drops fast, as does muscular performance.

[Editor's Note: The acidity (or basicity) of a solution, including body fluids, is measured using the pH scale, which corresponds to the concentration of hydrogen ions (H+) in a solution. The pH scale ranges from zero to 14, where seven is considered neutral, below seven acidic and above seven basic. The further from seven you are on the pH scale, the more acidic or basic the solution. Acidosis is a condition characterized by excessive acid in the body fluids. The important bottom line is that during rigorous exercise, muscle pH begins to fall and this is directly linked to muscle fatigue. Acidic pH can affect muscle force production in several ways. For example, even small changes in pH can have a large impact on enzymes and thus, on cellular metabolism. —AM]

Carnosine to the rescue. Since hydrogen ions are swarming your muscle cells, whether you feel a burn or not, any added buffering of these ions is the key to keeping your muscles firing. Carnosine does exactly that, naturally absorbing H+ and keeping us closer to the optimal pH range, allowing us to train harder and longer. Of course, the challenge is that we only have a limited level of naturally stored carnosine in our muscles. With more stored carnosine, you could lift more and lift longer. You would be stronger and most likely bigger, leaner and more muscular. So, how can we increase our carnosine levels?

The Beta-alanine-Carnosine Connection

We can increase our carnosine levels by increasing the ingestion of beta-alanine, which is one of the two amino acids that make up carnosine. Why not just take straight carnosine? When you ingest carnosine in isolation, most of it's broken down in the gastrointestinal (GI) tract into its constituent amino acids— beta-alanine and histidine. Some intact carnosine does escape the GI tract freely, but even that amount is quickly broken down in our blood by the enzyme carnosinase. In a very short time, all the carnosine you just ingested is either eliminated or converted to beta-alanine and histidine. These two amino acids are then taken into the muscle, where they're converted back to carnosine. This is the key. It's beta-alanine that actually causes the upsurge of carnosine within muscle. Unfortunately, only approximately 40 percent of the carnosine you take actually contains beta-alanine, making it inefficient at best. You're better off, from both an efficiency and a financial standpoint, taking beta-alanine directly. You would have to take substantially more carnosine just to approach the increased levels of intramuscular carnosine achieved by taking beta-alanine alone.



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Here's why it's so important to use beta-alanine in supplement form to "recreate" carnosine in your muscles. When you ingest beta-alanine, your body transports it into your muscles and with the help of the enzyme carnosine synthetase, combines it with histidine to rebuild carnosine within your muscles. A common question is, shouldn't we take extra histidine along with beta-alanine, since histidine is a component of carnosine? In my view, the answer is no, because histidine is already present in high concentrations in muscle, while beta-alanine is only present in small amounts. Researchers have determined that it is beta-alanine that drives carnosine synthesis, not histidine. Since this has been proven repeatedly in research, I feel there's no need to supplement with extra histidine to increase carnosine levels.

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[Editor's Note: It is currently unclear whether ingestion of extra histidine along with beta-alanine offers any advantages over beta-alanine alone. Hopefully, future studies will resolve this mystery. –AM]

Benefits of Boosting Carnosine Levels

Boosting carnosine levels with beta-alanine doesn't just sound good in theory, it works, and has been shown in numerous human studies to increase strength, lean muscle mass, muscular power and muscular endurance. A recent study even showed that beta-alanine could increase aerobic endurance and decrease body fat percentage. *[Editor's Note: It's unlikely that beta-alanine ingestion per se promotes fat loss. There's no evidence suggesting that beta-alanine increases thermogenesis and/or fat oxidation.–AM]* In my opinion, never has a substance so versatile and powerful graced the sports nutrition industry. It's been over a dozen years since creatine made its splash, but now something has finally come along that shows as great a promise as creatine did in its early stages. It could be even longer until another compound surpasses beta-alanine as the ultimate strength and lean muscle booster, muscular endurance enhancer and fatigue fighter.

At what point during my set will IntraXCell have its strongest effects?

Unlike creatine, IntraXCell is effective at all points during your set, whether you're lifting heavy or doing endurance work. Your body uses three energy systems to perform work: the ATP-PC system, which is primarily used during heavy lifting and for sets in the 5-6 rep range; the glycolytic system, which is predominantly used roughly within the 7-15 rep range; and the oxidative/fat system, which is used primarily in endurance training. Our energy systems are simultaneously utilized, but depending on the level of intensity or duration, certain energy systems will become more dominant. Anyone who trains with weights will use the first two systems predominantly and, in both cases, the results of the buildup of hydrogen ions will contribute to fatigue in both systems, especially glycolysis. This is where creatine falls a little short. It's mostly effective in the ATP-PC system, which relies on ATP and phosphocreatine (PC) for intense, high-energy contractions. Taking creatine will help your explosive and maximal strength, but won't help you much in that 7-15 rep range. As anyone trying to build bigger muscles knows, you must train in both heavy and moderate (7-15 reps) ranges to gain lean mass. Only beta-alanine can effectively fight the H+ buildup that occurs in both these ranges, allowing you to train at high levels, regardless of your goals or your training intensity.

A recent study, in fact, showed that beta-alanine significantly outperformed creatine in decreasing cellular fatigue, giving it yet another advantage over what has been considered the most effective sport supplement of the last decade. With beta-alanine yielding impressive results in university-sponsored performance studies, creatine's days at the top may be numbered.

[Editor's Note: This is a bold statement, to say the least. Scientific studies have demonstrated that creatine monohydrate supplementation can improve maximal power/strength (5 percent to 15 percent), work performed during sets of maximal-effort muscle contractions (5 percent to 15 percent), single-effort sprint performance (1 percent to 5 percent), and work performed during repetitive sprint performance (5 percent to 15 percent). In addition, creatine supplementation during resistance training promotes skeletal muscle hypertrophy.]

Does beta-alanine replace creatine?

Beta-alanine does not replace creatine. As shown previously, they work differently and creatine is still effective for increasing strength and power. If anything, they should be taken together as the ultimate one-two punch.

How much beta-alanine is needed to cause performance increases?

Research has shown that you can take an amount between 3.2 grams and 6.4 grams per day to significantly boost carnosine levels and improve performance. The most recent research is now using 4-5 grams a day and showing comparable performance improvements in subjects using 6.4 grams daily. IntraXCell provides 4 grams a day, well within the effective range.

Who can benefit from IntraXCell?

- Individuals participating in weight training, looking to gain muscle mass and increase strength;
- Any individual involved in athletic activities where strength, power and muscular endurance are needed;
- Active individuals who have reached a training plateau and are looking for a supplement to take them to the next level.

How long will it take to start noticing benefits?

Performance benefits typically occur in as little as two weeks, although some individuals will notice benefits within one week. As carnosine levels increase, the benefits will follow. The most dramatic results are generally experienced

within the three- to four-week range, but they don't stop there. Recent research is now showing carnosine levels continue to increase for a minimum of 12 weeks, which is why we recommend staying on IntraXCell for at least three months to optimize your carnosine levels.

Immediate benefits: Many users experience intense vasodilation/pumps from the very first dose of IntraXCell. Because beta-alanine increases carnosine, and carnosine is a powerful precursor in generating nitric oxide synthase (a group of enzymes necessary for making the vasodilator nitric oxide), this is an added, immediate benefit of IntraXCell.

How does the rest of IntraXCell's formula fit in with beta-alanine?

IntraXCell is more than just a carnosine booster designed to increase strength, lean muscle and endurance. IntraXCell also contains ingredients that work synergistically with each other and with carnosine. These ingredients act as direct precursors to the powerful antioxidant, glutathione.

Vitamin E— vitamin E has been shown to increase carnosine levels more than carnosine alone. Carnosine has been shown to increases vitamin E's antioxidant ability. These two operate hand-in-hand.

N-acetyl-L-cysteine (NAC)— increases glutathione levels inside the cell, which is a power antioxidant that fights cellular fatigue. Interestingly, beta-alanine has now been shown to increase the synthesis of glutathione by increasing the availability of its precursor cysteine. Beta-alanine and NAC work perfectly together.

Alpha-lipoic acid— finalizing this highly synergistic formula, alpha-lipoic acid is utilized as a highly versatile antioxidant that boosts other antioxidants like vitamin E and glutathione.

These three ingredients, combined with beta-alanine, make IntraXCell a highly powerful and versatile weapon in your quest for greater strength, muscle mass and supercharged endurance.

Are there any methods to increase beta-alanine's ability to increase carnosine levels?

Yes. A recent study showed that a group of subjects taking beta-alanine with carbohydrates could increase carnosine levels in half the time of the group taking an equal amount of beta-alanine without carbohydrates. With additional research underway, taking beta-alanine preworkout and post-workout may increase carnosine levels faster than when taking beta-alanine at rest.

What is the prickling I feel when I first take IntraXCell?

The prickling is caused by beta-alanine activating nerves underneath the skin, causing them to discharge/fire, and producing a prickling sensation. This sensation begins approximately 15-20 minutes after ingesting beta-alanine, and usually continues for 1 to 1 1/2 hours. This sensation, though generally enjoyed by many people, subsides over a few weeks of continued use. Carbohydrates may also blunt the prickling effect from beta-alanine and can increase beta-alanine's ability to boost carnosine levels. Thus, I recommend taking IntraXCell with carbohydrates. ■

For more information on Athletic Edge Nutrition supplements, visit www.aenutrition.com.

Sebastian Balcombe is the CEO of Athletic Edge Nutrition. His background is in exercise physiology and he has collaborated with leading experts in the development of cutting-edge sports nutrition supplements for over 10 years. He's a firm believer that a balance of training, healthy diet and proper nutritional supplementation are all essential components to reaching optimal health.

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