



THE ONLY SUPPLEMENTS YOU NEED TO GET THE BODY YOU WANT.

THIS IS THE DEFINITIVE GUIDE TO BETA-ALANINE SUPPLEMENTATION



Beta-alanine is a nonessential amino acid, which means it isn't a necessary part of the human diet because our bodies can create it.

Your body primarily uses beta-alanine to form a compound molecule called carnosine, which is stored in your muscles and brain. It does this by combining beta-alanine with an essential amino acid, L-histidine.

Now, one of carnosine's roles in our muscles relates to the regulation of acidity levels.

When a muscle contracts repeatedly, it becomes more and more acidic. This, in turn, impairs its ability to continue contracting, until eventually it can no longer contract at all. This is one of the ways muscles become fatigued.

Carnosine counteracts this by reducing muscle acidity, thereby increasing the amount of work the muscles can do before they become fatigued.

WHY DO PEOPLE SUPPLEMENT WITH BETA-ALANINE?

While there are many ways a muscle can fatigue during a workout, by targeting just one (acidity), performance can be enhanced.

Well, beta-alanine is a popular supplement because it gets converted into carnosine in the body, which then accumulates in the muscles. This, in turn, increases the amount of work they can do before crapping out.

The mechanism whereby beta-alanine enhances performance is similar to that of sodium bicarbonate.

Beta-alanine beats sodium bicarbonate for practicality though because it doesn't upset your stomach and it doesn't require that you ingest near-dangerous levels to see benefits.

Now, why not supplement with carnosine directly instead, you wonder?

Because when consumed, carnosine doesn't make its way to your muscles intact. It gets broken down into its constituent parts, beta-alanine and L-histidine, which then must be reconstituted back into carnosine.

Furthermore, our bodies have plenty of free L-histidine available to create carnosine. What they're lacking is the extra beta-alanine needed. And that's why we supplement with just beta-alanine and not carnosine or beta-alanine and L-histidine separately.

WHAT ARE THE BENEFITS OF BETA-ALANINE?

Beta-alanine's major benefits lie in improving physical endurance and possibly body composition as well.

In terms of improving endurance, beta-alanine is clearly beneficial but—like all supplements— isn't a miracle molecule by any stretch of the imagination.

One rather impressive meta-analysis conducted in 2012 involved an in-depth review of 15 studies on beta-alanine as an ergogenic aid (performance enhancer).

Researchers found that beta-alanine supplementation resulted in a minor but statistically significant improvement in endurance (2.85%) when the exercise duration was between 60 and 240s (the duration you see in supersetting, Crossfit-style workouts, and the like).

This is why many weightlifters take both beta-alanine and creatine, which notably improves performance in the sub-60-second realm and slightly improves performance in the 60-to-240-second realm.

In this way, they're "covered" for everything they're going to be doing in the weight room.

As for beta-alanine and muscle growth there are a few studies that note that even when performance between groups is controlled for (ie. same amount of work done for each group), it's associated with more muscle growth.

That is, despite following the same types of diets and workout programs, people that supplement with beta-alanine seem to gain more muscle than those that don't.

We don't know exactly why just yet, but beta-alanine supplementation appears to directly (albeit slightly) augment muscle growth.

WHAT'S THE CLINICALLY EFFECTIVE DOSE OF BETA-ALANINE?

Well, the amount of beta-alanine used in clinical studies showing benefits ranges from 2 to 4.8 grams.

When you look at the data, 4.8 grams is slightly more effective than 2 grams but there isn't too much of a difference when the supplement is taken every day.

Like creatine, beta-alanine also seems to benefit from a "loading phase," which allows it to accumulate carnosine in the muscles faster. In this way, a higher dosage allows you to realize the benefits faster.

It's also worth noting that it's generally thought that people doing higher volume weightlifting programs may benefit from the upper end of the clinically effective range of beta-alanine.

This is, because carnosine stores are depleted during muscle contractions so, naturally, the more you contract your muscles (workout), the more carnosine your body "uses."

Oh, and in case you're wondering...beta-alanine doesn't need to be cycled.

WHAT TYPE OF RESULTS SHOULD I EXPECT FROM BETA-ALANINE?

Remember that supplements don't build great physiques. Dedication to proper training and nutrition does.

That said, here's what you can expect from beta-alanine supplementation:

- ✔ A slight increase in the amount of volume you're able to do in your weightlifting workouts.
- ✔ A slight increase in the amount of work you're able to do in superset exercises.
- ✔ A very slight increase in muscle growth over time (not as noticeable as creatine in this regard).

That said, it doesn't mean you shouldn't supplement with beta-alanine. It just means you shouldn't supplement only with beta-alanine if you really want to see improvements.

The same can be said about most natural supplements. By themselves, individually, they are underwhelming. Take the right ones together, though, and the cumulative effects can become noticeable.

For example, while beta-alanine may only improve your weightlifting performance by, let's say, 3 to 5%, if you combine it with several other ingredients with similar effects, you're now looking at a 15 to 20% boost in your workouts.

And that's enough to matter if you also consistently train hard and eat right.

DOES BETA-ALANINE HAVE ANY SIDE EFFECTS?

First...get ready for the tingles. Beta-alanine is known to cause something known as paresthesia which, despite sounding ominous, is a harmless condition where the outer layer of your skin tingles.

The most common place to get beta-alanine tingles is in the face but it can occur elsewhere as well. Some people dislike the tingling or are alarmed by it (if they're not expecting it) but then grow oddly fond of the prickling sensation as time goes on.

Beta-alanine is transported into cells by the same protein as the amino acid taurine. In a way, these two amino acids "compete" for uptake into cells. Theoretically, then, too much beta-alanine in your body could inhibit the availability of taurine.

When we look at the research on the standard, clinically-effective dosages given above, though, it doesn't seem to result in any meaningful loss of intracellular taurine.

What this does indicate, though, is that it's probably not a good idea to take several large dosages of beta-alanine every day. I've seen anecdotal accounts of Olympic weightlifters that did this and suffered from severe muscle cramping, which is a side effect of taurine depletion.

Stick with a daily beta-alanine intake of 2 to 5 grams and you'll be fine. And if you do happen to notice any muscle cramping after starting beta-alanine supplementation, you can reduce the dosage or add taurine to your regimen. For this purpose, 1 to 2 grams of taurine per day is sufficient.

THE BEST BETA-ALANINE SUPPLEMENTS

As you probably know, beta-alanine is mostly found in pre-workout supplements.

You now know why. Remember, though...

01. If a supplement contains less than 2 grams of beta-alanine per serving (and calls for one serving per day), don't buy it.
02. If a supplement claims to contain a clinically effective dosage of beta-alanine but it doesn't give you any tingles, switch to something else.

By this point you're probably not surprised to learn that my pre-workout supplement PULSE contains a clinically effective dosage of 4.8 grams of beta-alanine per serving.

It also contains clinically effective dosages of 5 other performance-enhancing ingredients:

Caffeine. Caffeine is good for more than the energy boost. It also increases muscle endurance and strength.

Citrulline Malate. Citrulline is an amino acid that improves muscle endurance, relieves muscle soreness, and improves aerobic performance.

Betaine. Betaine is a compound found in plants like beets that improves muscle endurance, increases strength, and increases human growth hormone and insulin-like growth factor 1 production in response to acute exercise.

Ornithine. Ornithine is an amino acid found in high amounts in dairy and meat that reduces fatigue in prolonged exercise and promotes lipid oxidation (the burning of fat for energy as opposed to carbohydrate or glycogen).

Theanine. Theanine is an amino acid found primarily in tea that reduces the effects of mental and physical stress, increases the production of nitric oxide, which improves blood flow, and improves alertness, focus, attention, memory, mental task performance, and mood.

And what you won't find in PULSE is equally special:

- ✓ No artificial sweeteners or flavors.
- ✓ No artificial food dyes.
- ✓ No unnecessary fillers, carbohydrate powders, or junk ingredients.

The bottom line is if you want to know what a pre-workout is supposed to feel like...if you want to experience the type of energy rush and performance boost that only clinically effective dosages of scientifically validated ingredients can deliver...then you want to try PULSE.

THE BOTTOM LINE ON BETA-ALANINE

Beta-alanine is one of the few supplements that are affordable and proven to boost physical performance.

If your budget permits, it's a worthwhile addition to your supplementation regimen.

Don't buy into the hype, though—beta-alanine isn't going to "take your workouts to another level" or "pack on slabs of lean muscle." It can help you push a bit harder in your training, however, and appears to help you add muscle faster as well.

And that, in time, can result in greater progress toward your goals.

If you're going to supplement with beta-alanine, I recommend you combine it with other proven performance enhancers like creatine, citrulline, and betaine.

While you may not notice much of a difference in your workouts when taken individually, the cumulative effects of these supplements can be substantial.

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