Are You Wasting Your Money Buying BCAAs?

Branched-chain amino acids are one of the most popular—and overrated—supplements on the market today.

What do you mean Justin? I've always been told that BCAAs are absolutely needed if even think of dieting down; otherwise I should kiss my precious muscle away. As if without drinking this golden elixir, muscle will be the first thing to go when in a caloric deficit! Actually, some of you who read this are clients of mine and are taking a double take at your programs that say to take BCAAs! I know, I know, we will get there!

We are even told that BCAAs are as effective as creatine at helping build muscle and strength and are as fundamentally useful as whey protein.

The marketing works, too—go to just about any gym and you’ll see at least a couple of guys and gals lugging around a gallon jug of neon BCAA-infused water.

The reality, however, is that BCAA supplements aren’t nearly as special as they’re made out to be.

To understand why, let’s first talk about what these supplements are comprised of.

Branched-chain amino acids are three vital amino acids that your body must get from your diet: leucine, isoleucine, and valine.

• Leucine activates an enzyme called the mammalian target of rapamycin, or mTOR, and this directly stimulates cell growth (protein synthesis).

• Isoleucine increases glucose uptake in the muscles, improves glucose metabolism, and weakly activates the mTOR enzyme.

• Valine is underwhelming in all respects and is the least potent and important of the three. Research shows it may increase insulin secretion and promote glycogen synthesis in muscle cells and, like isoleucine, can weakly stimulate the mTOR enzyme.

Now that we have a clear understanding of what these 3 do, or at least have refreshed your memory, let's remind you what also contains BCAA's; food.

There are large amounts of branched-chain amino acids in high-quality sources of protein like eggs, meat, dairy, and especially whey protein. For example, a 6oz serving of chicken gives you about 6.6 grams of BCAAs. The same amount of beef gives you about 6.2 grams and turkey and various types of fish also provide about 1 gram per ounce. Most impressively, whey protein gives you 5 grams per 50 grams of protein powder.

The point is this: eat enough of these foods rich in amino acids and you’ll get all the BCAAs you need.

Why BCAAs are sold so much

The reason why BCAA supplements are so popular is they’re really easy to sell.

If you wanted to jump on the BCAA bandwagon, you could cite a handful of studies that (apparently) demonstrate an impressive array of benefits including more muscle growth, endurance, and recovery.

What they wouldn’t tell you, however, is that the studies’ findings just aren’t practical to the average physically active person following a sensible workout routine and high-protein diet.

What they also wouldn’t tell you is that you can give your body all the branched-chain amino acids it needs to recover and build muscle through food alone. In fact, there’s research that indicates this is more effective than supplementation.

That said, an argument could be made for the value of BCAA supplementation with athletes training several hours per day, but for the rest of us, it’s way more bark than bite.

Why suggest BCAAs?

BCAAs do have one legitimate use that we’re interested in, however, and it relates to fasted training.

BCAAs include leucine, and leucine suppresses muscle breakdown, therefore a BCAA supplement is useful for preserving muscle while training in a fasted state.

Why not eat protein instead, you wonder? Because food will spike your insulin levels and you will no longer be in a fasted state. In fact, whey protein is more insulinogenic than white bread.

BCAAs, on the other hand, have a smaller impact on insulin levels than food, which allows you to remain in a somewhat fasted state while you train. This is why many people “in the know” supplement with them before fasted exercise.

While BCAAs are good for preserving muscle, they have two significant drawbacks:

1. You’re paying for three amino acids but leucine is the only one of the trio that effectively suppresses muscle protein breakdown. You could save money and achieve the same results by buying pure leucine instead (but be warned—leucine tastes really, really bad).

2. Most BCAA supplements are comprised of 2 to 3 parts leucine and 1 part isoleucine and valine, which means you need to take quite a bit (about 10 grams) to get the 3 to 5 grams of leucine required to counteract the muscle loss that results from fasted exercise. This means you burn through bottles fairly quickly if you’re training fasted 5 to 7 days per week.

Thus, when taking BCAAs it's not to say it's not beneficial to preserve muscle loss, you just don’t get much “bang for your buck,” so to speak.

Is there a better Alternative?

β-Hydroxy β-Methylbutyrate (also known as HMB) is a substance formed when your body metabolizes the amino acid leucine, which is an amino acid that directly stimulates protein synthesis.

HMB is often sold as a muscle-building aid but the research stating to demonstrate these benefits is shaky at best, hindered most by design flaws.

There is one benefit of HMB that’s well established, however: it’s an extremely effective anti-catabolic agent.

That is, it’s very good at preventing muscle breakdown, which means you will recover faster from your workouts and experience less muscle soreness.

It also has no effect whatsoever on insulin levels, which means it can’t break your fasted state.

This makes HMB perfect for use with fasted training. Its powerful anti-catabolic effects and non-existent insulin effects means you reap all the fat loss benefits of training fasted without any of the problems relating to muscle loss or insulin secretion. It's also worth noting, that training fasted vs fed has shown no long term fat loss benefits and should come down to strictly preference when training. If you train bright and early and feel food will hinder your ability to workout with a high level of intensity, then train fasted with leucine supplementation. If you can fit a small amount of food in before your lift and feel it gives you more energy and allows you to push yourself further, then do that!

It’s also worth noting that HMB is superior to leucine in suppressing muscle breakdown because it’s more anti-catabolic than its “parent” amino acid.

This means it’s also more effective than branched-chain amino acid supplements because they rely on leucine for their anti-catabolic effects (isoleucine and valine are very weak in this regard).

Clinically effective dosages of HMB range between 2 and 3 grams.

When should you take BCCAs?

If you are dead set to take BCAAs, I find that the population that works best for is athletes training multiple times a day or for athletes who compete in shows that require an extremely lean body composition. More specifically, athletes such as smaller females and males who protein intake is lower and therefore consume smaller amounts of protein in each meal, which potentially would not allow them to reach the leucine threshold that would spike muscle protein synthesis. Even as such, I highly suggest simply taking HMB instead of straight leucine and mixing it with a calorie free drink.

So let's wrap this up with some takeaways!

Leucine is the most important amino of the 3 BCAAs

BCAAs cost more to effectively dose yourself with the amount of leucine recommended

Most of us acquire enough leucine from Whole Foods and whey protein

Supplementing with pure Leucine or HMB would be more effective with a matched dose of BCAAs

Athletes who train multiple times a day or for athletes with lower protein intake, leucine supplementation is recommended