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EVERYTHING YOU NEED TO KNOW ABOUT TAURINE



Taurine. Something that anybody who grew up with energy drinks knows about.

Well, “knows of” may be a bit of a stretch. Most people are at least aware of taurine since it keeps on appearing in energy drinks and pre-workouts.

Nothing wrong with something popping up all the time in products, though; caffeine is everywhere because we know it’s an effective wakefulness promoting compound, creatine is in most muscle building powders because we know it works.

WHAT IS TAURINE?

Taurine is a biogenic amine, “biogenic” meaning that it’s naturally produced in our bodies.

It’s sometimes called a conditionally essential amino acid since sometimes we need it in the diet and sometimes we don’t (depends on your health state) but, surprisingly, it’s not actually an amino acid.

WHY DO PEOPLE SUPPLEMENT WITH TAURINE?

Taurine is unique in that the most common scenario in which people use it isn’t as a supplement, but as an ingredient in energy drinks.

When it does come to supplementation people use taurine for seemingly the opposite reasons you would think from the association with energy drinks. Taurine is a somewhat common supplement for the purpose of reducing anxiety and calming your mind.

Others use taurine in an attempt to reduce cramping associated with exercise when hydration and potassium aren’t working.

And finally, some people see taurine as a general health supplement. Due to the fact that it’s present in many tissues including the heart and has antioxidant properties, it’s thought that a bit of taurine each day can go a long way in preserving health.

WHY IS THERE TAURINE IN MY ENERGY DRINK/PRE-WORKOUT?

Before we dive into the benefits of taurine overall it would be good to address why taurine, sometimes used to confer anti-anxiety effects and sedation, is present in so many energy drinks.

Truth be told we don't know outright but there are two potential reasons that I'm rather fond of. The first one is more on the hilarious side of things that I really hope isn't true, that taurine was included initially in Red Bull because taurine sounds like taurus; the astrological sign for bulls.

I really hope that's not the case. If it isn't then it's just a really nice association between the molecule name and the product name.

One other option is the fact that taurine interacts with some of the other molecules in sugar-filled energy drinks.

- ✓ Taurine has sedative roles in the body and may have been included in an attempt to "take the edge off" of the stimulants.
- ✓ Taurine may slow the absorption of glucose from the intestines/liver into the blood, reducing the rate of uptake (the "spike" of glucose in the blood) which should theoretically mean less of a sugar crash.

WHAT DOES TAURINE DO IN YOUR BODY?

If we wanted to sum up taurine briefly then we could call it a very widespread antioxidant that seems to favor the heart and the brain. It can also moonlight as a neurotransmitter in some cases although it's not considered as potent as some other ones (like serotonin or dopamine).

It's synthesized in the liver and can be used to make some bile acids (which, despite the disgusting name, can be really potent antioxidants and health-support molecules) and can also, by itself, just float around as an antioxidant.

WHAT ARE THE BENEFITS OF TAURINE?

Taurine and Sleep

Taurine is one of many compounds that occur naturally in the body that, like melatonin, increases in the body in response to prolonged periods of being awake. It can activate receptors known as GABA(A) in the thalamus, a brain region known to regulate sleep, and is involved in the creation of melatonin itself in the pineal gland.

So, at its core, taurine is something that exists in your body and is intimately involved in creating the major sleep hormone (melatonin); the longer you are awake, the more there will be, working to help you to fall asleep.

While taurine itself is a very important molecule to sleep there seems to be a lack of human studies seeing whether or not supplementation helps sleep.

Taurine and Obesity

Taurine is known to have a pretty important role in fat tissue where it reduces inflammation produced from these fat cells but, during the state of obesity, it seems that taurine levels in the body are naturally reduced.

In this case, increasing taurine intake seems to reduce inflammation and reverse some of the adverse changes seen during obesity. This has been seen in humans given 1,500 mg of taurine over the course of eight weeks.

But to be clear, despite the improvements in inflammation, taurine did not cause a greater degree of weight loss than when compared to placebo.

Taurine and Depression

Taurine is investigated as a link between poor sleep, obesity, and depression and anxiety in a few studies where it seems to be relevant to women yet not men. The alleviation of depression and/or anxiety is one of the more popular reasons people supplement taurine.

It's not clear how it could, either, as the mechanisms are all over place. It can activate both the GABA(A) receptors and glycine receptors to reduce anxiety with one rat study to suggest that taurine helps prevent depression and anxiety in response to stress, but, yeah, that's about it.

There are connections between taurine and depression as well as anxiety that suggest taurine helps these two states but, overall, studies on the topic are relatively lacking. Taurine could help these states and reduce stress but it's not proven in humans yet.

Taurine and Diabetes

Taurine shows some protective effects in people with high blood glucose levels but there isn't enough evidence to suggest whether or not it's able to improve insulin sensitivity or reduce elevated glucose; it functions more as a general protective agent than anything.

Taurine and Exercise

Perhaps most relevant to our purposes, taurine has been studied in regards to improving exercise capacity. Whether or not it works seems to vary depending on the person taking it.

When taurine is given to individuals with previous heart damage, taurine supplementation seems to not only have protective effects during exercise but increases exercise capacity itself.

When looking at people without heart problems in regards to maximal performance, then taurine does not appear to enhance high intensity exercise capacity. It may reduce muscle soreness by protecting the muscle cells (without interfering with inflammation) during intense exercise, however.

For more prolonged exercise, taurine has shown some benefits in a 3 km run compared to placebo.

Power and strength, however, do not appear to be benefit from taurine supplementation.

WHAT'S THE CLINICALLY EFFECTIVE DOSE OF TAURINE?

When it comes to studies looking at the health benefits of taurine supplementation, a dose of 1,500 mg is taken daily, with benefits seen over the course of eight weeks.

WHAT TYPES OF RESULTS SHOULD I EXPECT WITH TAURINE?

Overall, don't expect much. A few subtle benefits to the above states could be expected but it isn't going to make or break anything. It's a step in the right direction, not a leap. If you're not diabetic, not exercising, and don't have some degree of chronic, unmanageable stress then you might not actually perceive anything from taurine at all.

DOES TAURINE HAVE ANY SIDE EFFECTS?

Taurine has not been associated with any toxicity at doses between 1,500 to 3,000 mg daily, which is usually what's used in studies on humans. While definitely a dosage range that has benefits, there are some of us (myself included) who have had times in our lives where we lived on multiple energy drinks a day.

Regardless, there doesn't seem to be too many trials looking in depth at taurine toxicity. The study that stated strong evidence for a safe upper dose of 3 grams daily did so because there just wasn't much human evidence investigating doses higher than that.

While taurine does appear to have potential toxicity at very high doses, the recommended dosage range of 1 to 3 grams a day doesn't seem to be associated with any known harm.

THE BOTTOM LINE ON TAURINE

Ultimately, taurine is a good choice for an antioxidant supplement that benefits the states of obesity and heart health a bit more than other antioxidant supplement choices. It may also improve endurance exercise performance.

However, it's not as amazing as one would think given its prominence in energy drinks. It's very reasonable to assume it's in energy drinks for a similar reason as the B vitamins—it was included in the first product "that just worked" and people didn't want to mess with the formula.

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