

**Dr Mike T Nelson:** Welcome back to the Flex Diet Podcast. I'm your host, Dr. Mike Nelson. On this podcast, we talk about all things to increase performance, add muscle, improve body composition, and do all this in a flexible framework without destroying your health today in the podcast. So good buddy, Dr. Guillermo Escalante, and we are chatting about some really cool stuff.

A two part series here. We're talking about the compound, GAA, is this the next creatine. Now again, you've probably heard about everybody making claims about this form of creatine. This supplement's the next creatine. Well, it turns out GAA is sort of a precursor to creatine and may have some other super interesting benefits.

I've been following this work on GAA for quite some time. Shout out to my buddy Dave Barr, man, probably a decade and a half ago. He was the first [00:01:00] guy who ever mentioned this to me, and I've just been one of those things in the background. I sit around and read research for fun, so I've been keeping my eye on that.

I did a research review on it for the Care Institute this past year in their neuro research review. So if you want full details on that was one of the studies that was included there. But I wanted to get Dr. Escalante here to talk about GAA, is it the next creatine? What is it? What are some of the potential benefits?

What do we know? What do we not know? We also talked about the supplement industry, just overall. Is the supplement industry regulated or not? So I'll make you listen to the podcast for that answer. And then we switched up and we started talking about the enhanced games. Which is coming up pretty fast.

What exactly it is it how are they gonna look at health and performance metrics? What are they really trying to do this? What are some of the potential changes that could happen in terms of regulation of drugs and peds? What are even the kind of [00:02:00] ethics of doing something like that?

So, really fun conversation. A huge thanks to him for coming down to the podcast. Make sure to check out. All this great stuff. We'll put a link to his Instagram below, which he's always constantly sharing great stuff. And then both of us will be at the International Society of Sports Nutrition Conference.

If you are around or want to go to that, I would highly recommend it if you're interested in exercise physiology, nutrition, sports supplementation great conference. Probably one of my favorites of the year. I think I've only missed

two years in. 16 years or something like that. So, not presenting this year, just hanging out getting to chat with everyone there.

And we also have a sponsorship here from Element. If you're interested in tasty electrolytes check them out below. It is an affiliate link. And then also my friends over at Teton Ketones. So if you're looking for a way to bump your ketone levels up without having to do a ketogenic diet. [00:03:00] I would highly recommend you check them out.

They've got some really cool stuff coming out very soon. As soon as it is public knowledge, I will share all of that with you. But look for some cool stuff from them around probably the June timeframe. So thank you so much for listening. As always, if you want more information from me, you can get onto the Insider newsletter.

I'll put a link to it down below, and enjoy this podcast with Dr. Guillermo Escalante.

Welcome back to the

**Dr Guillermo Escalante:** podcast. How are you today, doc? I'm doing great, Mike. It's it's been a minute since we chatted on here, but thank you for inviting me back. I think this is my third time on here and I think so, yeah. I appreciate the shows that you put together and all of the information that you put out.

So I'm glad that you were willing to invite me back on, on your podcast.

**Dr Mike T Nelson:** Oh, no, of course. And I gotta chat with you a little bit at ISSN this past year, which is always a fun time. And I always [00:04:00] feel like whenever I go to that meeting I have some really amazing, I conversations learn a lot, and then I always feel like there's people, I just didn't talk too much at all.

Unfortunately. Yeah. It's,

**Dr Guillermo Escalante:** It's funny 'cause there's always it's a great conference 'cause there's not a ton of people, but it's big enough where there's enough people then you never get to talk to everyone, especially Yeah.

**Dr Mike T Nelson:** Yeah.

**Dr Guillermo Escalante:** And once you're like us so many people and you really have, some sort of relationship with a lot of the individuals.

So, you spend 10 minutes talking to someone and you're like, that wasn't enough time.

**Dr Mike T Nelson:** Yeah. Yeah. And one of the things they chat about there, which is the first part of the podcast, and then we'll probably transition into some stuff with the enhanced games, is there's a compound called the acronym is GAA.

And it's been getting, I would say, showing up a little bit more in the literature to maybe enhance creatine. And everyone was obviously listening to this familiar with creatine monohydrate and the, all the different applications. And it seems like over the years there's been two things, like one.

[00:05:00] Anything that could potentially enhance a creatine, which, we'll talk about. There's not really a lot to enhance for muscle, but maybe for neuro applications, there might be some stuff there. And then everyone's looking for the next latest and greatest supplement that is the next creatine.

And yeah, there's stuff that's effective, but I don't think it's like we're gonna turn over the research review every month and find a new compound similar to creatine. So, so what are your thoughts about GA, a, what is it and how did you get interested in,

**Dr Guillermo Escalante:** yeah, so I, I think it's very, a very interesting compound and the way I got interested in it, I was a high retained as a creatine expert for for a big, case in a lawsuit. And as a result, I had to write a lot of information, over 200 pages worth of information, digging into the creatine research literature and and coming across that some of the things we were talking about were creatine precursors.

And yeah. And that's what Guano Aesthetic Acid is a GAA. It's, [00:06:00] it is a creatine precursor. And it it's your body can actually convert it produces it naturally, and then it'll actually convert. Ga a into creatine once it's methylated in the liver and then your body can actually create a creatine.

But when you read some of the literature with the GE GA, a supplementation a lot of it has been done by Dr. Oic who's a big creatine expert. And he's actually leveraged a lot of the GAA and led a lot of the GAA studies. And when you read some of the literature, it's very interesting.

It's actually been used for many decades. In, it's been around for quite a while. Yeah. With livestock, right? So they, they use it for them to beef 'em up a little bit and with chickens, and that's where you see some of the literature with the GAA literature. But over the last few years, you actually see it you see some case studies or not case studies, some randomized control trials in humans where you see GAA supplementation.

And one of the advantages of the GAA over creatine is, number one, is, as creatine. Demand is super high right now. So it's there, there's a [00:07:00] lot of demand. As a result, prices are up and it's relatively expensive compared to some of these other compounds, and it's definitely increased in price over the years.

Yeah, but it used

**Dr Mike T Nelson:** to be cheap for a while. Like for a while it was like dirt cheap, but now it's just kinda keeps escalating, just like protein oh my God, a protein isolate now is, I looked at some of the prices just for raws the other day and I was like, holy crap. Yeah.

**Dr Guillermo Escalante:** Yeah. It's gone up a lot.

And GA, a it's a much cheaper version of that, so you can actually get it for about a third or a fourth of the costs. And again, it's, it is not creatine. It's not creatine monohydrate, but if you actually provide the body with GAA, your body can actually ink. Some of the studies have actually shown that increasing GAA.

Within the bloodstream over time your body will actually convert and methylate that GAA into creatine and then have some of the same functions as the creatine, but instead of supplementing with the creatine monohydrate, for example, you would supplement with the GAA. And then some [00:08:00] studies have actually shown that GAA supplementation can actually increase muscle creatine stores which is basically the same thing that, that creatine monohydrate will do.

It just does it differently through. Through a mechanism. So a, as I said, GAA is converted to creatine in the liver through methylation. And it requires a particular compound called s a dental adenyI methionine, which is called Sam. And then this is what can actually increase that.

And then once it changes into creatine some of the other things that, that it does is basically very similar to creatine mono ahy. So it's gonna increase energy production regenerating a TP which is going to have some of the same benefits for high intensity exercise, short duration activities.

It will then enhance energy availability, it can support muscle protein synthesis. And then we see some of the other same benefits with growth. So those, that's basically in a nutshell. How it works. And we actually see some of the literature in the with the animals.

And we actually see [00:09:00] them gaining lean mass over time with GAA supplementation. And of course, one of the benefits of feeding the animals, this is because it's a dirt cheap supplement. So, farmers can use it and now they can actually get more profitability for their for their animals because they're actually able to get the animals to be a little bit bigger.

So each animal will actually be, can be sold for more. I'm not sure how sales work in farming. But Yeah. Yeah. But it would be the same thing. You're gonna have a bigger animal that's gonna produce more meat, which is gonna be, a higher profit margin.

**Dr Mike T Nelson:** Yeah. And I think they even have like different efficiency ratings and stuff for different compounds and how much the cost is versus how much more it adds to the animal. And then you can show this compound was very cheap and added, whatever percentage to the weight of the animals.

So if you resell it, then, you get that amount more from a, just a pure financial standpoint.

**Dr Guillermo Escalante:** Absolutely. Absolutely. It's just and it's a, and in terms of what we're talking about, it's essentially a pennies game, right? Because it's a [00:10:00] penny business. So, you're but you're doing it by, by the volume, right?

So, you had millions of volume over, over pennies, that, that turns into a lot of money over time. And some of the other interesting things like creatine higher creatine levels it may actually stimulate. That satellite cell activation and myogenic growth. Although again, more research is needed to confirm some of these effects over time.

But interestingly, one thing that you wanna be careful with GAA, because GAA requires this methylation to convert to creatine. One of the concerns is that

excessive supplementation may actually decrease methyl donors like Sam, and it may lead to other side effects like elevated homocysteine levels.

So, one of the things that we wanna look at and need to study further is does GAA supplementation does it increase homocysteine levels? And if it does, to what amount? And is it still within a safe level? So I think the safety profile is something [00:11:00] that needs to be looked at a little bit further but it's a very intriguing compound because.

It is a creatine precursor, it does work in a lot of the literature. There's a lot of positive trials, but the one thing that I will say is it's the research doesn't show that it's necessarily better than creatine monohydrate. Which is what we find with a lot of these other creatine type products that, even if they work, a lot of 'em, some of the other compounds have been shown in some research studies, like they're not really effective or as effective, but the ones that are as effective as creatine monohydrate they're either as effective or slightly less effective, and they cost more.

The one benefit to this one is that theoretically it could cost less because it, it costs less to make it. So you may have the same benefit for less less money. With this guy here.

**Dr Mike T Nelson:** Yeah. I had a, in my head, I was trying to figure out. If you combine it with other things that help with, the methyl donations, so you don't have that issue.

It [00:12:00] sometimes almost ends up being a wash, depending upon what you can get those other ingredients for. Which is interesting. But supplement companies, maybe for better or worse, I would imagine could sell it just as a standalone with, without the other compounds in it. And then you're left with, in higher doses you can run into some methylation issues and elevated homocysteine, which wouldn't be good.

**Dr Guillermo Escalante:** Exactly. Exactly. Yeah. And and I think that's one something to be considered. So you can do it with diet, right? You just have something that's got more but supplements like betaine or folate can actually help in that regard. And the dosage for the gaas the recommended amount typically is about one and a half to three grams per day.

Which is the recommended amount. And then your body will convert that and then that can saturate the muscle creatine levels. But I think, there haven't been a lot of human studies, so I think it's a very interesting supplement. But the

studies that have been done for the most part, do show some promise which is interesting.

**Dr Mike T Nelson:** Yeah. And [00:13:00] similar to you, for fun, I, if I'm looking at pure hypertrophy and body comp, I look at a lot of livestock research. Yes. If I'm looking at pure performance, I look at horse racing research.

**Speaker 4:** Oh, right. Isn't that the truth? Isn't that the truth? It's great. And if you're trying to find

**Dr Mike T Nelson:** esoteric stuff that may not even be out there, because both those industries, there is actually a fair amount of research.

Now, granted, it's in horses and cows and not humans. And like the horse racing industry generally is drug tested. You could argue about to the efficacy of that or not. They have a lot of money, so they'll spend the money to run the studies to see what's actually working or not. And then with horse racing, and even like with livestock, it's all weighed, it's all timed.

So like you have an actual hard outcome and can make some stabs at efficacy then too.

**Dr Guillermo Escalante:** Absolutely. Absolutely. And that's an interesting point that you make, is that with regards to creatine you would think that creatine actually helps horses. Right. But we know that it doesn't 'cause it, the horses don't have the creatine [00:14:00] transporter to be Yeah.

Which is weird. That, which is really weird. Right. I've

**Dr Mike T Nelson:** never understood that. Do you know why that is? I've just, I can never wrap my brain around that.

**Dr Guillermo Escalante:** No. I just know one of, one of the original studies that was done by Dr. Harris, who just recently passed away, as yeah, I

**Dr Mike T Nelson:** know. He was like the nicest dude too.

Not only, I

**Dr Guillermo Escalante:** know I never got to meet him in person but I've read of all his work. Well, I shouldn't say all his work, but a lot of his work, yeah.



**Dr Mike T Nelson:** Super humble. Like I had to coerce him for 15 minutes for me to get a picture with him. He's no, no one cares about me. I'm like, what are you talking about?

Like creatine, like beta alanine, like legend. You're the dude legend. He's no, don't take my picture.

**Dr Guillermo Escalante:** Yeah, he's a legend. But when he looked at one of those studies, he did a, he did it on a horse and they were looking at creatine. And the effects of creatine.

It's an older study and yeah. It's one of those interesting things, like if it, this is what I always say just because something doesn't work in one study doesn't mean you should stop looking at it. Oh, yeah. Clearly disregard it. Right?  
[00:15:00] Because some people look at this, so, he was looking at the effects of creatine on a horse and they were looking at does it increase muscle creatine stores?

And they were feeding the source, the creatine, and nothing happened. And then, that was well, I guess creatine must not work. It doesn't saturate muscle creatine stores. But then come to find out, it's okay, well in the horse it doesn't work, in the human it actually does.

'cause we actually have that creatine transporter to be able to, and of course there are different types of creating transporters that, that we have. And I'm definitely not an expert into what those specific transporters but your body has different types of these transporters.

And I know that to be able to, saturate muscle creatine stores. You definitely need that creatine transporter which is important. And of course, there's some in the muscle, there's some in the brain which kind of comes full circle again with the efficacy of creatine, monohydrate supplementation on some of the brain stuff.

And one of the, one of the big questions that, that is raised right now is well, does it even, can it cross the blood brain barrier? And [00:16:00] we see some studies that say, well, maybe and other studies that say maybe not. So, the research on that's equivocal from from the last that I've read on it.

**Dr Mike T Nelson:** Yeah. From talking to Scott Forbes and Eric Rosson, Hass done some of the studies on brain creatine. The consensus I gotten from, reading a lot of literature that they've put out in other researchers is that I. It



looks like it crosses the blood-brain barrier, but you probably need higher concentrations.

Yep. And then from talking to Dr. Rolson, it's, these studies are so hard to do because you can't biopsy the human brain. Right? Right. So you're left with an MRS or some non-invasive technology, which, you know, all that is really good and they can do some amazing stuff, but. It also has, certain limits that make it hard to figure out like, what was your baseline?

How long do you have to run the supplement for? What is your detection error that you can even detect a difference before and after? And Right. It gets to be much more difficult than just sticking a birch Fromm needle in and go, Hey, let's just

**Dr Guillermo Escalante:** measure it. [00:17:00] Exactly.

**Dr Mike T Nelson:** Yeah.

**Dr Guillermo Escalante:** It's more complicated. They're all just proxy measurements at that point in time, and and like I said, there, there is a margin of error and you're right. That least detectable change, can you, is it greater than that? Than than what is actually a measurement error? Right. So it's really important to be able to identify that.

**Dr Mike T Nelson:** Yeah.

And that's where I originally heard of GAA through shout out to Dave Barr odd years ago. I think he might even wrote a. Article for TIG on it, like well over a decade ago. And I think, don't quote me on this, certain companies, I dunno if it was Muscle Tech or other companies were starting to put it in some creatine products.

And at that time there was almost very little research on it period. And so I remember flipping through the research two years ago, I do some neuro research reviews for the care institute and saw a couple articles on it. And there was another one, I think this past year too. And the argument was that maybe for muscle, it may not be better, like you mentioned the creatine monohydrate.

But they were making an argument that [00:18:00] maybe for neuro implications, maybe we could have creatine monohydrate and maybe we could have GAA, maybe it's some combination of 'em, maybe something like that could elevate brain creatine levels. Any thoughts on that?

**Dr Guillermo Escalante:** Yeah, no, I think it's very interesting to read that.

And to your point, there is a company that does make creatine plus GAA together. Okay. And I saw it recently. I remembered the name off the top of my head a while ago. But but it is very interesting to see what they have. So they actually, those two And yeah, I think with relation to the Blood Brain barrier, that was, that's one of the thoughts.

But I've read on GAA recently there was, there is some data that suggests that maybe it does cross the blood brain barrier supplementation. Of course the, you, once the brain has its own supply of creatine and its own supply of GAA and then it and once it, it's past the blood brain barrier, it can actually GAA will turn into creatine.

But, I think that there's still a the jury's still [00:19:00] out, whether GAA itself can cross the blood-brain barrier because it may need the same creatine transporter to be able to to go through that that, that barrier. So I think the jury's still out, but I think there's a lot of interesting research that could come from that.

**Dr Mike T Nelson:** Do you think there's, in the neuro case, like maybe some sub components that it's broken down to that could cross the blood brain barrier and basically be reassembled? Again, I think of the early work on like harnessing. So you gave harnessing as a supplement and they thought, oh wow, look, this actually increases some endurance performance.

Later on through, Dr. Roger Harris and other people, they found that, oh well it was just disassembling in it to L histamine and Betaine, and it turns out your body had plenty of L histamine and Betaine was the rate limiter. So we can just skip ahead and just give you beta-alanine and get a better effect.

**Dr Guillermo Escalante:** Right. Exactly. Yeah. And I think there's something to be said to that, that I think that, that is definitely a possibility [00:20:00] that we could actually look into. Right. In in, because essentially Reine is made up of, base fundamental amino acids. Right? Right. It, could you, if you just put those together, maybe they can cross the blood-brain barrier and then there could be a limiting reagent amino acid that, that is creating that, that that holdup per se.

**Dr Mike T Nelson:** Yeah. What are your, any future predictions on GA, do you think it'll be something the sports industry kind of jumps on? Do you think it'll

wait for more research? Or if you were to speculate, what do you, what is your speculations.

**Dr Guillermo Escalante:** I would say if you have some entrepreneur that reads some of the literature and markets it.

Right, right. I think there's some marketability for it because it is new, it is sexy. So I, I think it's got some potential to be able to do it. In fact, maybe I'm gonna start taking some investors right now and I'm gonna create No, I'm just kidding. I was like, maybe we should start

**Dr Mike T Nelson:** after this call, buddy.

**Dr Guillermo Escalante:** But no, but I think it's got some promise. Personally though I would like to see a little more [00:21:00] research on it because we have very limited human data before it's marketed but I do see it, it does have some potential for working. I would be interested in primarily some of the health metrics.

Does it increase homocysteine levels and. And if you do, like at what dosage, do you have potential problems? With, and I think that would be some of the starting point before I would feel comfortable doing it. But I think it's got some potential.

I, I think if somebody decides to invest in it and either takes a chance on the literature that's currently available, maybe marks it, mark markets it correctly, maybe invest some money into doing more research with it. I think it could potentially do well. 'cause I'm, I'm gonna go back to creating Monohydrate in 1990, right?

Yeah. Create Monohydrate in 1990. We knew about it, but we probably knew about as much about it as we know about GAA today. Right. And maybe a little bit less. And they marketed it right. And, realistically, I. You saw [00:22:00] creatine sales, increase over the years but it's been exponential growth over the last five years seven years, I would say.

Now to the point where you're seeing women take it you're seeing elderly take it and it's it's just part of the general repertoire for most individuals where, in the 1990s, only meathead took it or yeah. Very serious athletes, right? And that's who it, that's who the market was.

But, between the marketing and the research that has, substantiated its effectiveness and its safety it's come a long way. So I see it personally. I think it's a little diamond in the rough and probably not a bad idea. I think the one pushback that you may get is, well, you already have creatine, so why do you need GAA, my comeback to that is, well, if I can give you the same effect for cheaper, why not?

**Dr Mike T Nelson:** Yeah. Yeah. It sometimes people, when I talk to 'em about creatine are horrified that I've been taking creatine mostly on since [00:23:00] 1995, and I always point out to them I'm like, yes, it is anecdotal. I could show you the freaking hundreds of pages on creatine.

But if you just think and look at how many, probably billions of doses of creatine that have been consumed by people and almost very few to almost no side effects it's interesting that people are still very. Worried about things that we have a lot of both anecdotal and extremely well controlled, published long-term data on.

**Dr Guillermo Escalante:** Yeah, absolutely. Absolutely. And it's funny because those same people, they have no problem drinking like a fish, right. They'll, oh yeah. All the other stuff's fine. Yeah.

**Dr Mike T Nelson:** They like your 18-year-old run full speed of another human. I don't think twice about that.

Right. I'm not saying you shouldn't, I'm just saying region's the least that worries about him. That's the least thing I'd be worried about.

**Dr Guillermo Escalante:** Yeah. And I see they'd have a problem eating a ton of crappy ultra processed food in large quantities, that's fine. But gosh, no, not a protein powder.

[00:24:00] Like you saw that article in the LA Times, or not at the New York Times on. On on protein powders, right? Are they needed? No, I didn't. It just came out maybe a couple weeks ago. Maybe three weeks ago. Oh, geez. It's actually a very comprehensive and I'm gonna say poorly done paper, which I was surprised about.

'cause New York Times usually does a pretty good job on a lot of things. Yeah. But yeah, it was very very biased in a lot of ways. Oh. And it basically, the question is are is are protein powders, needed? And of course the answer is, you don't necessarily need it.

I'm not on that paper. Yeah. Boat. But it definitely helps. But they're certainly not detrimental. No they're not. They're not. To me it's a con the way I look at it, I almost look at protein powder even as a. As a dietary supplement, even though it is convenience, but I don't get it as a, it's a simple way to, to down a piece of chicken or, yeah.

A piece of fish or, you can only eat so much of that stuff. And to me it's like getting 50, 60 grams of of protein of my daily protein from a powder is perfectly convenient to when I'm trying to consume [00:25:00] 250 grams of protein a day. Right.

**Dr Mike T Nelson:** Yeah. It just seems weird of all the things that they focus on that it's almost like trying, you've been around long enough to know that even high protein diets now every couple years or couple months, there'll be something else that comes out that says, oh, it's so horrible.

You crazy meatheads eating one gram per pound of body weight. Or in your case even more than that, it, those old stories just, the Brenner hypothesis of kidney damage and all that kind of stuff that just. Stories get stuck in people's heads and they just don't seem to go away.

**Dr Guillermo Escalante:** Yeah, absolutely.

And I'm with you as well. I mean I've been taking creatine probably on and off a lot on Yeah. Probably since I was maybe 16 years old, so that's 1992 for me. Right.

**Speaker 5:** Yeah. Yeah.

**Dr Guillermo Escalante:** So that, that's a long time to be taking that stuff and and there's been periods of time where, I'm on it for over a year straight, yeah. It's pretty cra usually the time I come off is when I just run out.

**Dr Mike T Nelson:** Yeah. You forget. That's the reason I do, [00:26:00] I was like, oh, go on vacation. I didn't bring any, eh, fine. Exactly. Exactly. Yeah. And of course the supplement industry has a shady past, is always trying to create better forms of creatine.

I remember the creatine ethyl ester where they did the little ad where they put it in a glass with clear water and they're like, look, it disappears in water. So it's more bioavailable. I remember seeing that going. What? The one, there was

almost no safety tests done on that version two. Creatin hydrate is extremely bioavailable.

It doesn't have a bioavailability issue. Issue. No. But just that demo alone probably sold metric tons of it. Absolutely. And then talking to Roger Harris about it, he's yeah, we got kinda lucky on that. According to him, if the body had cleaved it off at a different spot, it would've turned out to be quite toxic.

But it didn't. And he guess he said something like, the original [00:27:00] companies just thought it was gonna be better released. It didn't do much of a study. Granted, this is, many years ago now. And he is yep. And we just got lucky that it just basically was ineffective and didn't turn out to be bad.

But he is it could have been really bad.

**Dr Guillermo Escalante:** Oh my gosh. That's, it's insane. Yeah. I think you and I chatted about this paper that I wrote. It came out maybe. Maybe a couple years ago. But it was on we did a, we surveyed Amazon products. Yes. That creatine, remember. Yeah. And and that was one of the interesting things that we saw is we looked at all of the marketing claims that were put on these things, and then we analyzed the costs of these products and, and what we found is these products cost, at least twice, sometimes three or four times more expensive than the creatine monohydrate.

And then the claims are just outrageous. And then when you look at the evidence behind most of them, it's like there's really not a lot of evidence in a lot of these in terms of their efficacy and safety. And if there is n none of them really show that it's any more, more effective [00:28:00] than the CRE monohydrate.

So, yeah it's very interesting to see, I. That information. But that's the problem with the dietary supplement industry, and I think there's a lot of good folks in the industry that, that do things. Oh yeah. But there's also a lot of folks that just, put a cloud over it and they they're shady with some things.

And even though, I always like to say people think it's not FDA regulated, it is f FDA a regulated. Yep. It's just FDA a regulated much differently than medications and other things. Right. So it's it's one of those things where it's if you do no harm you'll probably be fine.

Once you do harm then the FDA's gonna take a look and they're gonna say, Hey, what's going on over there? But there's a lot of supplements that do no harm and do no good either.

**Speaker 5:** Yeah.

**Dr Mike T Nelson:** Yeah. And it's a whole regulation versus enforcement issue too, absolutely. It is highly illegal for you to market something as, let's say creatine monohydrate of five grams and it doesn't meet dose.

There's something else in there. It's not meeting label claim. [00:29:00] Is that always enforced? Eh? Are claims always enforced? Eh, herbal products, the taly are very poor quality. Is that enforced? Is it illegal? Yes. Is it enforced? Yeah. Just not the manpower to do all of that stuff, unfortunately. Yeah, exactly right.

Exactly

**Dr Guillermo Escalante:** right. And the reality is from a. From a business perspective, if you have a, a very entrepreneurial mindset and not a very high ethical mindset. Yeah. It's a business that is the cost to entry level into the business cost to enter the market is very relatively low.

And the return on investment is relatively high. And, all you really need is, the right marketing campaign and you can kill it.

**Dr Mike T Nelson:** Yeah. Unfortunately, I've seen most of the roadblocks are in distribution, so if you can pay someone off or have someone promoted who has a big audience or that type of thing, unfortunately you could promote very ineffective products and [00:30:00] probably still do quite well, which.

Annoys me, but

**Dr Guillermo Escalante:** Yeah, absolutely. Get, because somebody's

**Dr Mike T Nelson:** gonna cash in on that, that just given enough people with eh, questionable ethics, like someone's gonna do it. Exactly.

**Dr Guillermo Escalante:** Exactly. Yeah. And that's just and that's very common in that's one of the things that we wrote in that paper.

It's, it's not, it's more the, I'm gonna say it's more common to do that. That's it's, that's that is more the standard in a lot of ways. Right. And some companies get



picked on it but others don't. But but a lot of companies are that's the way they roll.

And they're doing it, over and over again, and they're making a lot of money.

**Dr Mike T Nelson:** Yeah, and I think you've seen the new rules Amazon's put in place for their, it appears to be, and I don't know if this is enforced, having more traceability and inquiring companies to have, lot traceability and everything to try to cut down on the number of, fakes and knockoffs and all that stuff being sold on there.

So hopefully that'll do some good overall.

**Dr Guillermo Escalante:** Yeah, absolutely. I think it's important. And then you, [00:31:00] I've also, you also read some of these these studies that have been done. And when companies place illicit compounds yes. In these products, with, without the consumer knowing, and then, you have this person taking, product X, it's oh, it works awesome.

I'm like, yeah, that's because it's laced with five grams of D ball in there. Yeah.

Like of course you're growing like a weed. Yeah.

**Dr Mike T Nelson:** Yeah. That's, there's been. Various companies in the past that have been busted for doing just that. And usually the telltale style, not always is that the original product run was amazing and then all of a sudden, like four months later, like the product, everyone's I don't know, it's not doing the same thing.

It's

**Dr Guillermo Escalante:** But I will like to say that the, we're definitely talking some of the people that put that bad taste in people's mouth, but there's a lot of good companies that do it right. Oh, definitely. And they back their products with evidence and they stand behind their product and they do things, just the way you're supposed to.

[00:32:00] Unfortunately, that's just that there's a lot of bad guys in, in the race as well.

**Dr Mike T Nelson:** Yeah. I always tell consumers if you're not sure, like in general. Bigger name products are generally gonna be better. They just have a

lot more to, to lose. Smaller companies that are not always bad, but if they disappear tomorrow and all the owners end up in Fiji yay, that they don't have as much to, to lose.

And then call the company, ask for, a COA certificate of analysis. Like companies who, in my experience, who are doing all the right steps, who are doing GMP, who are, have traceability, who are, all that stuff costs them a lot of money to do. Yes. Vast majority of the time, they're more than happy to explain what they're doing because they want people to be educated.

They want people to buy their products, they want to show that they are doing things the right way because it's literally costing them money and they hate all the other knockoff weirdos in the industry that just make everyone look bad.

**Dr Guillermo Escalante:** Exactly. Exactly. I agree. [00:33:00] I agree. Yeah, it's a very interesting industry.

But I said I, it's something that you and I have been a part of for a long time. Oh yeah.

**Dr Mike T Nelson:** Yep. Yeah. And you get to see all the insides and the inner workings and all the crazy monkey motion and stuff that goes in the background. But you do also get to see, how legitimate companies work.

And I've seen various companies make the right decision that was not beneficial for their bottom line. I've seen companies get stuck with, we'll say in theory many pounds of an inferior raw that came from China that they batch tested and found was inferior and did not use, and the company said it was good and they never got their money back.

Right. But to their credit, it got qc. They didn't use it because it didn't pass spec, so there are a lot of good things that happen in the industry that people also don't see.

**Dr Guillermo Escalante:** They don't see that part. They only it's a, well, people like to hear, just the they don't always like to hear the good, they wanna see the juicy stuff.

Right. Yeah. People like to hear. [00:34:00]

**Dr Mike T Nelson:** Yeah. Speaking of juicy stuff, that's a good transition. You're doing some stuff with the enhanced games. Correct.

**Dr Guillermo Escalante:** Yeah. That's been a very exciting venture over the last few months. I connected with with Dan Turner who's the director of of Athlete Health and Safety for the Enhanced games.

And we met a little bit before the ISSN conference in June. He was the same guy who gave the talk at ISIS n is that correct? Or a different guy? It is a different guy. He was it's his counterpart, which is dr. Sr. Is is the, okay. Okay. Gotcha, gotcha. Mike Senior, he's the one, so that's the one that gave the talk, but they were there together.

And Dr. Sr also works with the Enhanced games and he's a physician and he's dual board certified, super sharp guy. And he's an orthopedics and I think endocrinology, so he is pretty, yeah, his

**Dr Mike T Nelson:** talk was great. Yeah. Super interesting.

**Dr Guillermo Escalante:** Really cool. Yeah, so I met Dan a few months before the ISSN conference.

And then he let me know Hey, I'm gonna be going there. So we we connected a lot more there. We spent some time chatting went out with him and Dr. [00:35:00] Sr for lunch, and chatted a little bit more. And then anyway, we kept in touch over the months. And then he connected with me maybe in September or something.

Of 2024. And he asked me to see if I'd be interested in doing some consulting with them on on some of the projects. So my main task was to look at what we're gonna be testing the athletes on in terms of like field tests. And then we're looking at easy tests that can be done anywhere, like more field tests, and then also tests that maybe require a little bit more equipment that need to be done, like in a facility.

And then we're looking at different metrics as related to the athletes that are gonna be studied because the enhanced athletes athletes that participate in the enhanced games are gonna be highly tested in a lot of different ways. So, these athletes will probably be the most tested athletes in the world in terms of what they're gonna do.

So they're gonna be doing a full. Full health risk assessment [00:36:00] head to toe looking particular, their cardiovascular health. And then blood work, et cetera. Making sure that the people are healthy. 'cause that's one of the main

things. And then in addition to that, we're gonna be looking at performance metrics.

So we're I, identifying which performance metrics and we're still working, it's a still a works in progress in terms of what we're gonna use, how we're gonna be using it, what's practical, what's not practical what resources are gonna be available and allocated where it's gonna be done.

So, I've developed like the initial proposal for the field tests. And then the second part that I'm gonna be doing is consulting on there's other people that are putting together some of the. The drug protocols that are gonna be proposed. So I'm gonna be giving some feedback in, in some of those particular protocols that are gonna be utilized and it's being put together by physicians and coaches actually alike combining heads.

And what's gonna be cool about the enhanced games? It's gonna be there's gonna be athletes that can, if you wanna be an all-natural athlete, you can compete as an all-natural athlete, that's fine. Totally up to you. [00:37:00] But they disclose obviously, that there's gonna be people that are enhanced there.

Yeah. People who are not natural. That are not, that are, yeah. So you, so you have the right to be all natural. Regardless, those people have to pass the same health screening in terms of, we wanna make sure that they're healthy. There's gonna be athletes that are gonna be going through a protocol that's developed by the enhanced games and supervised by medical doctors and scientists from the enhanced games.

And it's gonna be a very specific drug protocol to enhance their performance. And then those people have to pass the same health tests and be cleared to make sure that they're healthy enough to compete. And they're gonna be monitored periodically on all of these different bio health biomarkers and performance biomarkers.

And then there's gonna be another group that they do their own protocol, whatever they wanna do. And I think that's still to be determined if, is it really whatever, or is there gonna be a limit into things that are allowable, not allowable? So tho those are the still topics of discussion but what we do know for sure is.[00:38:00]

Even those athletes, whatever they decide to take and whatever they decide is allowed, we'll still have to pass that same safety criteria because the last, athlete

safety is number one concern. So we wanna make sure that, these athletes are gonna be really maximizing performance and minimizing the health risks.

So we wanna make sure that they're, we're monitoring their health as much as possible and trying to mitigate any of these health risks over time. And then the second tier of the enhanced games that's really interesting is looking at the longevity piece. So looking, using these, this data that we're pulling and looking as can we apply some of these some of these particular substances that are used to enhance muscle protein synthesis and muscle growth and strength, for the general population in terms of longevity, right? So right now, for example, people with sarcopenia, it's not common protocol for you to be able to prescribe human growth hormone or [00:39:00] testosterone or other types of androgens to counteract that. Or Sarco osteoporosis, same thing.

Like those are not common protocols.

**Dr Mike T Nelson:** But you're not walking in to get var because you're getting old exact. Exactly. You might get testosterone depending upon where you go, but other ones,

**Dr Guillermo Escalante:** eh, probably not. And those are some of the things that we kind wanna create some data for because we can maybe look at these athletes over time and then we can actually see us like, Hey, look.

This athletes, they're 42 years old, they're 45 years old, they're 50 years old, and they're still able to perform at a very high level. Well, why? And then we can look at some of these things. And then these are some of the things that we wanna maybe open up the minds of the medical and scientific community is in a very rigorous, scientifically tested way with data behind it, can we actually implement some of these compounds into other protocols that, that they're currently not medically indicated for him?

**Dr Mike T Nelson:** How do you think you could, [00:40:00] so one of the things I thought in my head is if we make the assumption that X compound we'll just say is bad and takes 20% off your life, right? This is all hypothetical. I'm just making shit up. But most of these people are doing good nutrition or doing a lot of exercise or doing sleep or doing recovery.

So they're have a much better lifestyle than the average American walking around. So maybe their net benefit is actually still a net benefit, even though compound X might have a higher side effect. How do you try to tease out, because most of these are high level athletes who are doing good nutrition, who

are doing good exercise, who are doing a lot of the other sort of beneficial habits.

Like how do you, I'm just trying to think in my head, like, how do you tease these out if the idea is to transfer to say, a general population? And I agree with the idea and I definitely, I'm not [00:41:00] poo-pooing it, I just think it definitely should be done. I'm just thinking mechanically, how would you, how do you do that I guess?

**Dr Guillermo Escalante:** I think ultimately probably we'd have to, we'd have to. Tested in the population that it's intended to be tested. So that would be my

**Dr Mike T Nelson:** thought too. Eventually you have to transfer and

**Dr Guillermo Escalante:** go, Hey, let's take a small group of normal humans and, right. I think you have to, and then, but then at the very least, then we have some of the safety profile data.

Like for example, we know okay, like for this compound X like at what dosage are we actually gaining the most benefit, right? Or what dosage range. Right? Yep. Are we gaining the most benefit? 'cause it might be individualized for each person. Some individuals may need more, some may need less.

So at least you can identify what that range is. And then we could probably identify also at what dosage range do we see detriments in health outcomes. And then if you do see some of these detriments in health outcomes, how long do they last or how can we mitigate them?

Can we counteract it with maybe, another compound to maybe [00:42:00] mitigate some of those risks. So those are some of the things that, again, are conversations to be had and just as one example I'm gonna say like we know that high dosages of androgenic anabolic steroids in in, there's, we have some evidence to show that they can increase dur and angiotensin system.

So they, the RO levels, right? Yep. And then we know that ROS can potentially increase blood pressure and then lead to a bunch of other cardiometabolic health. Detriments. Right. So maybe we give a compound, right. Like telmisartan, for example. Yeah. To decrease the Ross levels.

And then we may be able to see that and then actually studying that. There's a lot of bodybuilders already doing that. Oh. Yeah. To mitigate some of the risks.

But you can actually look at some of these profiles and then you can actually get more data collected and then you can see if it works.

Yeah. 'cause

**Dr Mike T Nelson:** it's the hard part too, as it's not linear. Even if we take like testosterone, which we have a fair amount of data in terms of compounds, we [00:43:00] know if you just keep taking escalating doses of testosterone, you're. Risk and reward ratio starts becoming more skewed, right? At some point when you go up high enough in dosage is you're not getting a one-to-one beneficial effect and your risk is starting to become more escalated.

It's just at what point is that for what individual? Now you combine that with other compounds, and that's what makes it a very interesting problem too, because it's not the simple linear one-to-one relationship all the time. Exactly.

**Dr Guillermo Escalante:** And it's all so, different for each individual. Sure. There's a lot of individual variability in that, as there is in a lot of things.

So I think it's important and that's one thing that I always like to point out is that and you see this all the time in, in a lot of different ways. So you have some bodybuilders for example, that, you give them like a little bit of, anabolic steroids.

Maybe, I don't know, 200, 400 milligrams, a week, which is, a relatively lower dosage. Yeah. And [00:44:00] they grow no other, like crazy. And then you have other individuals that you need to give 'em, 10 times that, or five times that to get, even a remotely similar effect.

Or maybe they'll, they won't even get the same effect. Right. And similarly, you have some individuals where. That same two or 300 milligrams a week dosage will create extreme side effects. Oh yeah. And then you have other people who can handle a thousand milligrams, 1500 milligrams a week, and then they have minimal side effects, and then you have all the people in between.

So, the analogy I like to use, it's like that, we all know that a hundred year old lady who smoked and drank her whole life, never exercised and, ate ultra processed foods and she lived to be over a hundred. Right. And that's just and then other people like, they, they have an Oreo and they're diabetic.

Yeah. So it's crazy.



**Dr Mike T Nelson:** Yeah. The side effect thing is what kind of blew me away. Like seeing some blood work from people who may, let's say other countries self-report, what I would consider is some pretty [00:45:00] crazy dosages of stuff. Me expecting to see their blood work is gonna look like a complete train wreck and looking at their blood work going other than a little low HDL I don't know.

It doesn't look that bad, which is bonkers. And you see someone else on one compound at a moderate dose and you see everything just go outta shit.

**Dr Guillermo Escalante:** Yeah, absolutely. Absolutely. Yeah. If people, they you get a an aroma aromatization at different com, different levels, and yeah, like you said, it's some people it's yeah, I was like, oh your HCL went down a little bit, but you're still, at 42 it went from, yeah, from 65 to 42 it's still like within normal range.

And then you have other people, it's like you take single digits, those yeah. Your HDL went down to 10 10 and then your LDL went up to 300, right? Yeah. Pretty crazy.

**Dr Mike T Nelson:** I've seen that stuff too, on even just a ketogenic diet. Like vast majority of the stuff I've seen on a ketogenic diet, like no issues, no crazy blood work.

But I've seen enough individual [00:46:00] cases now and it's not very common, where I had one person where their blood lipids just went wacky and they were not overweight. They're generally metabolically healthy. They would go off a ketogenic diet within, a few, well, we test 'em every four to six weeks. It would normalize, it would go back to normal, go back in the ketogenic diet, blood lipids just go absolutely bonkers again.

Was that Wow? Definitely not the norm. And it's pretty rare. I've only seen it twice, but it's just fascinating. It's like you just wonder like what's going on with

**Dr Guillermo Escalante:** that person, yeah. It's very interesting. Yeah. And the same goes through with a lot of these drugs and those are some of the things that we kind of wanna, tease out and at least have some, normal type data. So, what's cool right now is everything's being done. We're trying to figure out and I say by we, the enhanced games folks. Yeah. I'm a very small part of that. Very small part of that. There's there's some great leaders that are leading the way.

But yeah, the enhanced schemes is looking at currently, where they're gonna be held if they're looking at either later 2025 or sometime in [00:47:00] 2026 in terms of a city, is it gonna be in the United States or in another part of the world. And then even running these tests.

So right now we're trying to look at where what type of institutional review board will actually review all of these right calls and allow it. So, but everything's being done, legitimately so that it can be a legitimate scientific study. We can collect legitimate scientific data and then we can actually analyze this data over the years to come.

**Dr Mike T Nelson:** Yeah. And I would imagine even just something like location, because you have a hard time believing it would be in the US just because of the legality of it. Again, I could be wrong, but then if you're going to other countries, then if you want to do all this testing and technology and what are you trying to do?

You've got all these blood samples, you've got urine samples, like just the logistics of it. You can't do it on a desert island in the middle of nowhere. You know what I mean? You you need technology and you need things. You need accessibility to have 'em transported, whatever. There's a lot of, I would [00:48:00] imagine just sheer logistics that go into the planning of it.

**Dr Guillermo Escalante:** Yeah. And that's, those are some of the hurdles that are trying to be trying to go over those particular and tackle. So, one thing is if, for example, if there, if we actually have an IRB approved theoretically, if you're part of this study you should be able to take your compound anywhere in the world, even in the United States, right?

Because right. You're part of a study, you're not doing anything illegally. It's yep, you're getting it prescribed from, what, whatever study you're participating in, and then you can bring it in accordingly. So those are some of the things that we're trying to carry.

But obviously that lends itself. So like the IRB is probably I'm 99% sure it's not gonna be approved here in the United States. It's gonna be, yeah, this country I would be shocked. Yeah. It'll be it'll be in another location where there's a little bit more liberty to to do those types of studies.

**Dr Mike T Nelson:** Because I think in the UK they did they declassify like steroids in general, or was it more just a [00:49:00] decriminalization compared to the us?

**Dr Guillermo Escalante:** I'm not, I know that they had some changes, but I'm not too familiar with all over there. And actually this was one of the things that they were talking about at the enhanced games that there, there is rumor that there they may be at least reclassifying testosterone and anabolic steroids here in the United States.

Yeah, I

**Dr Mike T Nelson:** heard that too. I think Rick was telling me that too. Yeah. Recalls, yeah. So

**Dr Guillermo Escalante:** that it's not the, at the same level, I think right now it's a schedule three compound. Yeah. And that, that way it doesn't carry the same, issues as you would, with other compounds.

'cause right now it's I've talked to Rick Collins and, some of the things that, he's such a great attorney.

**Speaker 5:** Yeah.

**Dr Guillermo Escalante:** And some of the things that he tells you, he is yeah I've defended guys where they have whatever two vials of testosterone or whatever compound they have.

Or, and then, in, in the ca in the court, in the courts, they'll say it's oh that's you have so much possession, so much stuff that you're actually intend to sell. And it's this is your personal use. But they don't understand how the [00:50:00] things work. Right. It's like two vials of that.

No that's just personal use. And I am gonna use that in probably, I don't know, four or eight weeks. Right. Yeah. And then personal use I'm not gonna, that's not intent to sell but the way that some of the laws transfer over, that's enough to really, carry, I mean you have a hundred pills of a, of an oral compound and it's oh, you have intent to distribute.

It's no, like that's just like a 10 week supply or an eight week supply of that compound.

**Dr Mike T Nelson:** Yeah. And you hear these stories of, professional bodybuilders who are getting ready for the Olympia is the one story I heard. Who knows if it's true or not, but some of the competitors tend to be very much on the OCD side, so they wanna make sure they have everything ready.

A lot of 'em wanna make sure whatever ancillary compounds they're going to use, they wanna make sure that they have them, four, six months out. And Rick was telling me that if you happen to get rated six months out, it's only for your personal use. But the other side, exactly what you said is gonna argue because of the sheer volume that you've accumulated, that [00:51:00] your intent to deal.

And that's a whole different, jurisdiction within the law and it just gets super, super messy real fast.

**Dr Guillermo Escalante:** Absolutely. Absolutely. Yeah. And that's something to consider. But you're right. If you're preparing for, the world bodybuilding champion, right? It's just like you don't wanna run outta stuff, right?

That's the last thing you want. Run up four weeks out. Oops, I goofed.

**Dr Mike T Nelson:** Yeah, absolutely. Yeah, you can't afford that. Do you think what the enhanced games we wrap up, do you think records will be broken? What is your prediction on that? Because they are doing events that are in the Olympics, right?

I think it's a lot of track and field and other, common events. I.

**Dr Guillermo Escalante:** Yeah. And that, that is actually a good question. So the some of the initial events, they want it to be very objective in nature. So yeah, it's gonna be like some sort of sprint event. So like a, a hundred, 200 meter dash some sort of like throwing event, like a hammer throw, shot put, discus type thing.

Some sort of jumping event, like a long jump, high jump, triple jump [00:52:00] type thing. So those three will, will be run. They're also gonna be doing potentially like a strong man type stuff where it's like, again, numbers, right? So how much did you lift? Yeah. And then a swimming's gonna be big too.

And it's gonna be Oh, interesting. Like a swim sprint. Yeah. So like a 50 meter swim sprint, which would be interesting. So those are, they've talked about doing other events like maybe gymnastics and whatnot, fighting. But, and those are, I think, are on the radar, but the one issue with them is there's a subjective component to that, right?

Yeah. So, like those are all judged, I guess in, in boxing or MMA fighting, if you knock the person out, it's not it's its objective. But if it goes into decision, a

lot of times go by decision. Right? Right. So, that, that leaves that subjective component.

So, but to answer your question, I'm curious to see what will happen. I think they're paying a lot of money if they break a world record they're rewarding the athletes very well if they break a world record.

**Dr Mike T Nelson:** That's what I heard. It was it was not an [00:53:00] inconsequential, I heard could be up to a million dollars, I dunno what the actual number was, but it was significant.

**Dr Guillermo Escalante:** Yeah. It's a big chunk of change. So I think there's definitely motivation there. But where I kinda see is maybe not on these records is number one is are the world's ultimately best athletes that are being paid, that we're seeing in the Olympics? Are they willing to switch over?

Yep. To compete in the enhanced games in an enhanced fashion. Although with the caveat saying. We're assuming that these people are not enhanced already. Right. Right. Just because they're tested and they pass a drug test. I'm not convinced that No, I, there may be some that are perfectly natural.

Sure. But I have the sneaking suspicion that a large percentage of those people that are classified as quote unquote all natural are not all natural. Yeah. Right. They're already taking insulin or some sort of other, performance enhancement compound that, that is definitely helping their performance.

So, or even ones that might not be detectable currently. [00:54:00] Exactly. Exactly. So I think these these folks, so if that's the case, if they're already taking something that's working maybe we won't see the world records that, that have. That have been there. But man, I would love to see like a 9, 4, 4, hundred meter dash.

Like that would be fantastic to see that. So, I think there's a possibility though. Again, there's you're gonna have athletes that maybe are gonna switch sides and they're like, Hey, they're gonna pay these athletes, a good amount of money. So, but again, is it the same as, having a \$25 million Nike contract?

I don't know. Yeah. And

**Dr Mike T Nelson:** if you openly compete at the enhanced games, could you ever go back to compete at the Olympics again?

**Dr Guillermo Escalante:** Well, that's the nice thing that they did, which I thought was brilliant, is they are allowing athletes that are clean, to compete. So they Right, they can still be tested part of wata testing like normal.

Yep. So they can be, they can, so they have to pass the [00:55:00] test and then they're just gonna show up and compete at the enhanced games without comp. So as long as they're passing the normal wata testing they're technically clean and they're going to be able to compete and and they can compete really at both.

Now if the Olympics will allow that or not, that's another question to be had because I know the there's been a lot of there was an, a New York Times article on the enhanced games recently came out too. And a lot of folks from the Olympics that organize that, they're, they almost don't even want to comment.

They're like, oh yeah, we don't even want to hear about it. It's 'cause they have a whole different philosophy on, on, on sport. But to me, I think it's, I love the idea of the enhanced schemes just because it's, it really opens up what performance is, and at the end of the day, it's like we're not pulling, wool over people's eyes.

Right. I think we're really just saying it's hey, like this is what it takes to compete at the highest level and we're being as transparent as possible. And not only that, but we're also being as safe as possible because I think right now what's happening in a lot of these [00:56:00] tested sports is it's being just hidden under the rug that these athletes are not using stuff when in reality, a lot of 'em are, I'm not saying all of 'em, but a lot of 'em probably are.

And because it's not open and it's so taboo, now you really can't openly test their health or all of these different biomarkers because. If they do they're gonna be they're gonna be outed and that's not ideal for them.

**Dr Mike T Nelson:** Yeah. And also the organizational bodies have a vested interest because people want to pay to see records broken.

Yep. But they also have the ethical dilemma of, we wanna make sure that it's a fair and clean playing field, which I understand and I actually agree with, but if you look at sports like cycling, the main reason I would say cycling is probably a lot cleaner than what it was many years ago. Their times are worse, [00:57:00] unfortunately, and that probably tells me that their testing is probably more effective now.

Watts per kilo, all the numbers that are well documented are well below. When it was very well known that, cycling was probably one of the most dope sports on the face of the planet at one point in time. Right. Yeah. If you

**Dr Guillermo Escalante:** go back to 2003, 2004, right?

**Dr Mike T Nelson:** Yeah. So it's this weird, interesting thing and I've heard this from, athletes that have, always been, clean and tested a bunch of times, or very talented that they feel pressured because they're feel like they're competing against other people who are not.

And so then they're stuck in this quandary of, yes, I would be breaking the rules, but if I don't really maybe go to the next level, I may not qualify for the Olympics. Or if I do, I'm gonna be 10th versus maybe third. So they're, stuck in this kind of. Weird area also because of it too.

**Dr Guillermo Escalante:** Yeah, absolutely. Absolutely. No I think it's a tough decision to be [00:58:00] in. And for me as a, as an athlete, it's like it's almost hard not to, crossover when you know what the benefit is. 'cause everybody's so talented there, right? And and I have a, a I'll say a joke, but I'll say, how do, how can you detect, who's juicing in the Olympic games and it's, those that are wearing the medals,

**Dr Mike T Nelson:** yeah.

**Dr Guillermo Escalante:** Because at the end of the day if you're, if you make it to the Olympic finals, and or even the semi-finals in the a hundred meter dash, so you're one of the top eight or 16 runners in the world. I. A lot of those people maybe number 16, number 15, number 14, maybe they're perfectly clean, they don't have the resources to be able to do it.

Whatever the case may be. And then, you give them a little bit of help and who knows what they can do.

**Dr Mike T Nelson:** Yeah. Yeah. And what my prediction, I don't know if you would agree, is that it'd be interesting to see, like track and field would be great. So if you could do a hundred to 200, a 400 meter or 1600 meter, my prediction is until you [00:59:00] get to longer events like marathon, half Marathon, the biggest uptick in performance you would see would be in the a hundred, 200, where it's more, yes, it's technique based, but strength and power, you.



You'd probably see a bigger transfer to performance. And then obviously at the half marathon level, EPO, things that increase endurance, you'll probably see it there. My prediction is that maybe your 400 meter or your 1600 meter times may not be that different, but maybe your a hundred meter times, like you said, maybe they're running like a fricking nine four or nine five or something there.

**Dr Guillermo Escalante:** Yeah, I think I, and there's something to be said to that, 'cause looking at the energy systems, right? Right. If you're looking at, maybe even the, the 5K, 10 k, EPO would probably help in that regard. But and you're right, probably the 400, 800, 1600 you're gonna get some help, but is it gonna be really that different, right. Maybe not, but probably in the 102 hundred, yeah, for sure. Shot put [01:00:00] discus. I definitely say yes. Yeah I agree. I agree.

**Dr Mike T Nelson:** Yeah. Awesome. Well, thank you so much for all your time here. I really appreciate it. Where can people find out more about

**Dr Guillermo Escalante:** you? Well, I'm you can follow me on Instagram at Dr.

Gfi spelled out so Dr. D-O-C-T-O-R-G fit. And then I also have a YouTube channel. You can just look for me there. And I'm trying to create a little more content on that guy. I have a few things up there, but I'm trying to create more this year and put some things up and then you can also just Google me and find me.

I'm at, I'm a associate dean at Cal State San Bernardino. And you can find me at at C-S-U-S-B here part of the College of Natural Sciences. So, easy to find me.

**Dr Mike T Nelson:** And you currently don't have any grad students, correct? Or were you guys working on more of a graduate type program?

I can't remember either way on that.

**Dr Guillermo Escalante:** No. No, we don't have a grad program and I'm not in the teaching component anymore. Oh, okay. I still have my hands in some research, but I'm collaborating with some other folks at different universities. [01:01:00] But in my lab I had a small research project that we're doing, but for our kinesiology program here, we actually just have an undergrad program and we do a lot of, we do a lot of research with our undergrads which is actually a really cool thing.

But we don't have a graduate program here for for kinesiology.

**Dr Mike T Nelson:** Got it. And most of the undergrads are exercise fiz, I would assume, kinesiology for a four year degree, correct?

**Dr Guillermo Escalante:** Yeah. So they're here for a four year degree. Yeah. So we have a, we have the, we have four different concentrations. We have an exercise science track, we have an allied health professions track we have a pedagogy track, and we have a health promotion track.

So a lot of our students and really in all four that they'll participate in some of the research. But yeah, luckily we have some really cool undergrads and a lot of 'em that come here actually. I tell 'em they're pretty lucky 'cause I've had a lot of undergrads come out with a publication out here.

I'm like, oh, that's awesome. I'm like, I didn't have a publication as an undergrad.

**Dr Mike T Nelson:** Yeah, no, that's super cool. Especially if people are listening. Any [01:02:00] undergrads where you can get even just some limited research experience definitely do it. It's something that'll will serve you well in the future no matter what profession you end up in.

**Dr Guillermo Escalante:** Absolutely. Absolutely. Get to present at conferences and speak to other people, meet other people that are, brighter than you and that's the way you grow. So, I love I love being around other smart people because you just learn so much from everybody.

**Dr Mike T Nelson:** Definitely. Awesome. Well, thank you so much. I would encourage people to check out the YouTube channel and all the great stuff you have on Instagram too. You always have good stuff there, which is awesome to see. All right. Thanks so much Dr. Nelson. It's good chatting with you. Yeah, it's good to chat with you.

Thank you so much all.

Welcome back to the Flex Diet Podcast. I'm your host, Dr. Mike Nelson. On this podcast, we talk about all things to increase performance, add muscle, improve body composition, and do all this in a flexible framework without destroying your health today in the podcast. So good buddy, Dr. Guillermo Escalante, [01:03:00] and we are chatting about some really cool stuff.

A two part series here. We're talking about the compound, GAA, is this the next creatine. Now again, you've probably heard about everybody making claims about this form of creatine. This supplement's the next creatine. Well, it turns out GAA is sort of a precursor to creatine and may have some other super interesting benefits.

I've been following this work on GAA for quite some time. Shout out to my buddy Dave Barr, man, probably a decade and a half ago. He was the first guy who ever mentioned this to me, and I've just been one of those things in the background. I sit around and read research for fun, so I've been keeping my eye on that.

I did a research review on it for the Care Institute this past year in their neuro research review. So if you want full details on that was one of the studies that was included there. But I wanted to get Dr. Escalante here to talk [01:04:00] about GAA, is it the next creatine? What is it? What are some of the potential benefits?

What do we know? What do we not know? We also talked about the supplement industry, just overall. Is the supplement industry regulated or not? So I'll make you listen to the podcast for that answer. And then we switched up and we started talking about the enhanced games. Which is coming up pretty fast.

What exactly it is it how are they gonna look at health and performance metrics? What are they really trying to do this? What are some of the potential changes that could happen in terms of regulation of drugs and peds? What are even the kind of ethics of doing something like that?

So, really fun conversation. A huge thanks to him for coming down to the podcast. Make sure to check out. All this great stuff. We'll put a link to his Instagram below, which he's always constantly sharing great stuff. And then both of us will be at the International Society of Sports Nutrition Conference.

If [01:05:00] you are around or want to go to that, I would highly recommend it if you're interested in exercise physiology, nutrition, sports supplementation great conference. Probably one of my favorites of the year. I think I've only missed two years in. 16 years or something like that. So, not presenting this year, just hanging out getting to chat with everyone there.

And we also have a sponsorship here from Element. If you're interested in tasty electrolytes check them out below. It is an affiliate link. And then also my friends over at Teton Ketones. So if you're looking for a way to bump your

ketone levels up without having to do a ketogenic diet. I would highly recommend you check them out.

They've got some really cool stuff coming out very soon. As soon as it is public knowledge, I will share all of that with you. But look for some cool stuff from them around probably the June timeframe. So thank you so much for listening. As always, if you want more information from [01:06:00] me, you can get onto the Insider newsletter.

I'll put a link to it down below, and enjoy this podcast with Dr. Guillermo Escalante, thank you so much for listening to the Flex Diet podcast. Huge. Thanks Dr. Guillermo Escalante for talking all about GAA and mark my words. You will see a ton of stuff on GAA coming up later this year, so you can say, Hey, I heard it on this podcast first.

I don't know if all the stuff on GA will be positive or negative, but it'll be interesting to see where it goes. And also, like we said at the onset of the show, if you're interested in electrolytes, check out my friends over at Element. If you're interested in ketones, check out my friends over at Teton Below.

I am a scientific advisor. Full disclosure to Teton and an ambassador for them and for Element. So thank you so much more information from me. [01:07:00] Make sure to get onto the insider newsletter. I'll put that link below. It's free to join. Any questions, just hit me up there. Thank you again for listening to this podcast.

We really appreciate it. Tons of great stuff coming up. Dr. Mike Orey is coming up very soon. We also got Anthony talking all about peptides. I've got Dr. Patel talking about a new potential test for looking at mitochondria, Jordan Payne, all about the use of IVs and much, much more. So thank you so much for listening.

We really appreciate it. If you do us a favor, hit the old subscribe, all that wonderful stuff to help us with the algorithm, and we'll talk to all of you next week.

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What do you suppose they call that? A novelty act? I don't know, but it wasn't too bad. Well, that's a novelty.

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