

Dr Mike T Nelson: Hey, what's going on. It's Dr. Mike T. Nelson here with the Flex diet podcast. Once again. I'm out here in Bozeman, Montana. So I'd be out here for a little while visiting someone Jodi's family and working and hanging out. Today on the podcast. Want to talk a little bit about. Aaron Rogers was in the media lately talking about psychedelics. So I thought that would be a good topic for today.

Since I've gotten a few questions on that. And the podcast today is brought to you by myself. You can go to Mike T nelson.com. And I've got a fair amount of articles there. You can find all the issues of the podcast to back issues of the podcast. Other ones I've been, on, or then you can also get on the newsletter. There's different ways to do that. There's some.

Cool giveaways with a Keto flowchart or other things. So most of the content I put out goes out through the newsletter and it's free to join. So go to Mike T nelson.com. Hop on the newsletter and say, hello. I look forward to seeing you there. So today. On the podcast, It's just me chatting and just going to discuss some of the, what I feel are the pros and cons of.

psychedlics because I think it's becoming more and more in the popular media itself. And. Most of the discussion. I see granted, I don't follow a lot of stuff online. It is like any other topic, especially in the fitness world. It becomes very polarized. Keto is like the best diet ever. Oh no. Keto is the worst diet ever.

And, even vegetables now, I guess are bad, which is mind boggling. Coffee is bad, which of course coffee is not bad. So everything wants to bend it into either it's good or it's bad. And there isn't really any context discussed or what do we know about any of the said topics? And I think with the more unknowns with psychedelics and especially if they do become legal in some form next year, which.

Hopefully they will. And what form in which ones who knows. I could all go. Sideways still, but hopefully it goes forward. A lot of the early primary trials have been very impressive, although preliminary. And before we get started, the caveat is that this is definitely not medical advice. This is for entertainment only.

As of this recording in the U S. Pretty much all psychedelic compounds for the most part. Maybe the exception of ketamine are schedule one drugs, which means they are completely illegal. And by definition, schedule one drugs do not have any medical benefit. So we're not talking about any prescription of work or at all.

Anything you want to discuss, make sure to clear with your physician. And as of this recording. The main compound we're talking about here today, ayahuasca which is completely illegal in the U S. Maybe that'll change at some point, probably not for awhile. We'll discuss some of that here.

And like I said, the main reason here for the discussion to date it is they're going to present what some of the current data. Says and hopefully provide a more moderate stance. That's informative based on research. So the quote from the sports illustrated headline said, Aaron Rogers says, use of psychedelic helped him earn a recent MVPs.

And this was one of my fears when I first heard about this shout out to my buddy. Marcos, we had a great conversation with just the other day. He mentioned this to me and I was like, what are you kidding? Of course I went in and looked at the headlines and the headlines are pretty much what I thought.

Now for the record, I'd not against anyone choosing to do whatever it is they decide to do. I think each person should have the freedom to pick. Whatever decisions they want to do as long as they are educated and just like anything else, the pros and the cons, what are the potential benefits? What are the potential downsides?

And the risks. But my fear is more in the media's portrayal of these compounds they're probably going to be polarized, just like everything else appears to be polarized in the media. And judging by that headline. That appears to be true. If you look at the actual quote, which they did get he said, quote,

I don't think it's a coincidence Roger said, on Aubrey Marcus' podcast on Wednesday. I really don't. I don't believe in coincidence at this point. It's a universe of bringing things to happen. While they're supposed to happen. So that's a little bit different than what the actual headline says.

We can also look to USA today had a story on it also which had a little bit different headline. But the key takeaway that I pulled out as a quote. From the USA today, article. Roger said, quote, The big message was unconditionally loving myself as a key to being able to heal all relationships.

With them past relationships with lovers, whatever it may be. So that gives me a lot of hope and healing at this point.

So the articles itself I thought were appear to be relatively fair. And it sounds like from listening to most of the podcast he did with Aubrey Marcus, which I'll

link to down here also. It sounds like it was a very beneficial experience for him. Which is great. Again, I don't fault anyone for doing things as long as they're educated on wanting to make themselves a better.

A human being, player, teammate, et cetera. My fear is that. People will see headlines such as. Psychedelics helped him earn recent MVP and then think, oh, that must be my answer. And yeah that. Again, makes me nervous.

If we go back and we look at the particular substance in this case which was ayahuasca there's a really great review. Which I'll have all the hyperlinks and references and everything on the website. And this one. Was done by Britto de Costa. And the title was toxo kinetics. And toxokinetics of Iowasca alkaloids and N dimethyltryptamine, which is DMT.

Harming Harmelin and touch a hydro harming a clinical and forensic impact. As was published in the journal pharmaceuticals, 2020. It's an open access. So you can read it. And it was really interesting. And I like to more of a research based approach. So if we back up in time and we go, if you've never heard of ayahuasca before, this is the first time.

You're hearing about it. One of the translations of it translates into vine of the souls. And has a long traditional use primarily. For therapeutic and divination purposes indigenous tribes in the Amazon basin.

The brew itself which is made in various different ways. It's primarily two main substances. One of them is a banisteriopsis copy vine. And then the other one is more of a shrub.

And these are mostly admixtures of the two plants.

The shrub contains a high amount of DMT. So DMT dimethyltryptamine is a potent and fast-acting psychedelic alkaloid. And the other one. The banisteriopsis copy. Primarily contains what are called alkaloids. These are primarily a hamine Harmelin and other forms. So what do you have is a one part of it provides the raw DMT.

Which is the primary psychoactive compound. But you can't consume it at least orally just by itself. It gets broken down and none of it really reaches the bloodstream. But if you combine it. With the beta stereopsis copy, which is an MAOI inhibitor. And what this does is it allows it to be orally active.

So if you combine these two you have basically an orally active form. Of DMT. So in this review they talked all about the different compounds and how they interact.

In terms of legality, like I said, in the U.S. it is currently a scheduled one, illegal drug scheduled. One is the highest scheduling. And it means that there is no medical benefit. Now we could argue that it appears to be some medical benefit. But in terms of scheduling of drugs, It does take quite a while for those to change.

For example, as of this recording, Cannabis is still a scheduled one drug, even though there has been a direct preparations of it Marinol. For medical use for several years. So again, the scheduling is a separate process. From the actual research itself.

So in other countries, such as Brazil in south America you'll find ayahuasca is used by different religious preparations. One of them being the church DeSanto Diami and then also IUDV, those are primarily the main two. You may find some use in the U S. So Senta dimey is also legally allowed in Canada.

And then in 2006, there's a decision made by the us Supreme court. But establish the protection of its religious use in the U S under the 1993, religious freedom restoration act. However, it is still considered overall illegal in the us Canada and most other countries.

So one of the issues among many with us, both from a practicality standpoint and a research standpoint. Is that the different components in ayahuasca can vary quite a bit from the source of where you get it from. So different parts of it that are grown in different areas will have different amounts.

And then even in potentially the preparation of how it's made, how it's broken down. How long it has prepped for what other components that they may add to it. For example, if you're using Santo, dimey in general, that is just the two components that is part of their religion. So they don't add anything else to it.

But if you're working with another ShawMan in a different country or different part, They may have different components that they add to it. Preparation might be different. The plants that are grown locally or from other areas are known to have a different amounts in them. So in one of the great.

Reviews that I talked about at the top. They had a really nice table that showed from three different preparations. They showed, for example, just the DMT

amount in milligrams per milliliters. Varied anywhere from 0.13 to 0.2, four to 0.6. Oh. So that's a huge variation. In concentration of the primary active component, which is DMT.

Other components, they looked at such as harming a varied, even higher. One group was 0.1, five, a UDV group, for example is 1.7. And the last group, which was from the city in Peru. Was 4.67. So huge variations. Again, in the exact same concentration. Meaning that if you consume, say one cup, whatever that is, or one glass in that ceremony.

You might be getting a small amount of harmine or you might be getting a massive amount of harmine, this doesn't take into account. A different intake in the total amount of. Fluid or beverage you're consuming. For example, total alkaloids. Varied anywhere from 0.3, three to 3.2, one to 7.28.

Again huge variations in the compounds itself.

One of the other issues I think too, is I talked to my buddy Marcos about this, that at best. If all goes well, let's say you're doing it in a place where it is considered legal. You're following the best set in setting the shaman medicine, man, woman, whatever word you want to use for them.

Is doing a great job. Everything. Quote unquote goes well. Safety is of paramount. At best, you're just going to get the message, it is not going to really do. A whole lot of work per se for you. You're still going to be on your own for integration. Deciphering what the messages are.

So again, in a society of prioritizing quick fixes, I think it's easy for people to hear. That went down to, wherever in the jungle did some plant medicine and then, oh, their life was completely different. And I'm sure that happens and there are potential benefits to it.

But even in the best case scenario, you're only really going to get the message. And it's just like exercise. The best program in the world is still not going to lift the weights for you. So I've often joked with exercise and nutrition that if you're Oprah Winfrey. And you can hire the best trainer in the world. You could hire a chef.

To cook you very specific meals. You could hire people to do all of it for you. But no one's ever going to lift the weights for you? No one's ever going to put in the work for you. That is something that you have to decide to do. And this really isn't any different. Ah, I love the Alan Watson quote.

When you get the message, hang up the phone. So sometimes I think there's a tendency of. Not liking the message and going back and maybe hoping for a different, maybe easier message. So I get nervous, I guess when people talk about. Doing an uncontrolled environments, different areas without integration after. So again, it's at best, it's going to give you a message.

And then it's up to you to do the integration. And that integration is an ongoing process. I know for myself, I'll link to just some of the experiences I've had in Costa Rica, which were very beneficial. Even the last one that we did in January. Even up to man last month, like six months later, I felt like I was still processing some of the information from that session.

Again, that's an ongoing process and having people you can talk to who are familiar with it, who can help guide you is going to be key. And it's never really going to do all of the work for you. You're still going to have to put in the work. And in some cases you may find messages that are extremely beneficial.

Or are confirming where you're at. So I do think there can be a huge benefit to it. But again, no, one's going to do the work for you.

In terms of benefits. Technically speaking, this may increase neuroplasticity. There are some changes that have been documented in BDNF brain derived neurotrophic factor. I did find the study. I mentioned above. That's cited some actual structural brain changes. Now, this gets an a little bit.

messy because some of these were from a repeated. Doses repeated ceremonies. Some of them were not. But they said is that there has been observed changes in cortical thickness, a midline brain structures such as a decrease in a area of the brain called the posterior cingulate cortex.

And an increase in the anterior singular cortex. And this was detected by MRI. And again, this was in long-term users of ayahuasca. This was not from a single dose or series of doses. Other authors have postulated that these changes. In neuropsychological function could be explained by structural differences that we just talked about.

The compound DMT itself. May also induce structural and functional plasticity and the prefrontal cortical neurons. Mainly increasing dendritic spine density. And frequency slash amplitude, spontaneous excitatory post synaptic currents. And this may explain why there is some data that DMT and ayahuasca

casca may have potentially antidepressant or anxiolytic effects. So we do have some early data showing that functional changes are possible. And that in long-term users, there may be some structural changes to the brain. In terms of the more acute side, there may be some potential anti-inflammatory effects.

This is thought to be by activation of something called the Sigma one receptor. And this may help the inhibition of proinflammatory cytokines. These are commonly like your IL one beta TNF alpha. For example, IL six is a bipolar one. You want it to increase a little bit acutely after exercise.

We don't want it to be running around, running a muck super high all of the time. There's also some other data that it may enhance the release of anti-inflammatory cytokines. Such as IL 10 itself. And then it's speculative but there is a role potentially of DMT in the treatment of neurologic disorders mainly in Parkinson's disease.

And this may be from anti-inflammatory ability. And again, all of that work is still relatively new and somewhat speculative. But there's other data showing even after one. Dosing of ayahuasca that the effects upon depression might be lessened. I'll link to there's about three studies that have looked at that.

So I'll have links to those also. If we look at a little bit, a higher level function in terms of neurology, what's going on with that? This is a study from Dr. Dennis McKenna new world. Tryptamine hallucinogens. And the neuroscience of ayahuasca the current topic of behavioral neuroscience, 2018.

In this, they said, quote, We have shown that ayahuasca temporarily modifies the ordinary flow of information within the brain. We propose a model in which ayahuasca reduces top-down constraints and facilitates a bottom up information transfer. By simultaneously enhancing and dodging cortical excitability and reducing higher order cognitive control.

ayahuasca temporarily disrupts, neuronal hierarchies. Allowing inner exploration and a new look on reality.

And if you've had any experience with it, that all seems to make complete sense. Complete sense. Again, just as other hallucinations also do. It appears to be modifying temporarily different parts of the brain. Some of this has been attributed to changing kind of the, normal.

Maybe inhibition and that we're experiencing. So that you have different abilities to get inputs into the brain. And. Yeah. If you can look up some of the studies from a Dr. David Nutt's lab, where they've done work with LSD looking at. Effects on the brain. Under MRI. Changes in something called the default mode.

A network. And then from Dr. Roger Carhartt Harris looking at the entropic brain theory. And that's briefly saying that. Maybe a lot of the neurologic disorders are on a spectrum. From having a high amount of variability to having a very low amount of variability or entropy. So if you have someone who has way too much entropy or variability,

They may be predisposed to being schizophrenia. If you have someone who has very little than maybe they're on the kind of OCD end of the spectrum. So their theory is that a lot of these diseases can be placed on a spectrum. And in general, when we look at Western. Society, especially for research.

A lot of them are very siloed into various specific labs. And the use of psychedelics has shown that if we can alter maybe the entropy or the variability. That this may be a way of providing a potential treatment for a wide host of different pathologies.

Briefly some of the potential downsides as is there's always a whole bunch of risks with anything that has beneficial. And this goes across the lines of even water. If you drink too much water, you can actually die something called hyponatremia. You literally flush out too much sodium from your body.

So thinking of any compounds or drugs as potentially beneficial. Or have a potential negative consequence. If you have a scalpel in the hands of a skilled surgeon, that's going to be extremely useful in my hands. It's going to be a freaking disaster. Again, it doesn't mean that the scalpel is quote good or bad.

It depends on the context and how it's used training, et cetera.

A lot of psychedelic research has talked about the set and setting and how this has a huge effect. I've seen that firsthand. So again, making sure that is taken into account. And that's one thing that does scare me a little bit as they become more available. You have people who just don't have much experience with different compounds or haven't really seen a wide variety of what could potentially go. And also what could potentially go wrong. I know after my first experience in Costa Rica,

It went really well, but I also realized that, oh man, there is like a massive potential for a whole bunch of stuff to potentially go sideways extremely fast. And again, anything that has a huge potential to help. could also hinder. Very heavy deadlift has a potential of making you a lot stronger.

But also has a much higher potential of leading to injury compared to a very light deadlift. Again, all these things have to be thought about in terms of context. There's also individual pharmacokinetics or PK. We know this for pretty much all drugs. Like the most common one is going to be caffeine.

This is metabolized by different enzymes in the liver. There are some genetic tests you can run to see if you are a fast or slow metabolizer of caffeine. So each person is going to have a little bit different metabolization. Is that even a word? I don't know. We'll say it's a word. Their ability to metabolize different compounds, all the way from DMT to harmiline

Two different compounds. So this is going to result in a high amount of variability. We talked about source purity. Where you're getting it from. So again, in the U S these are scheduled one compounds. How do you get them? How do you verify that? They're good. Oh, I got it from this person who says, yeah, this is good.

That seems pretty scary to me. So the downside of when things are not legal, Obviously, they're not controlled. And most people are, don't have the analytical chemistry knowledge to even do any testing. So at the end of the day, you're relying and trusting that person. My biased opinion, the further you get away from the actual source and the more people down the line, you just end up with a lot more unknowns.

As I mentioned, there's also natural variation in the source per location. Where the components are grown. Yeah, so that's another variation. Uh, In terms of safety, the LD 50, or what's called the lethal dose to kill 50% of a population. This is a very common toxicology parameter.

It appears that ayahuasca is relatively safe. So the therapeutic window. So the distance from the part where you would have, or the concentration where you would have an effect. To the concentration where it could be lethal. Is very high. The compound in itself. In terms of preparation appears to be relatively safe.

Now, again, this is only looking at the toxicology. This is not looking at. Other ramifications of being under the influence, especially if you have somebody not

watching you, not knowing what's going on. This is just looking at the toxicology only on paper. And the other caveat with that is that there is potentially lethal effects if it's combined with other drugs.

So if you are on any other medications especially ones like SSRIs and other medications. These could have very dangerous and potentially lethal consequences. If they are mixed together, So again, if you opt to do this in a country where it's legal make sure you tell. The practitioner, any medications that you are on so that, that can be taken.

Into account. The other downside too, as we mentioned is there's so many different components with just natural products overall. One of the solutions to this as something called pharmahausca. This For example, they may use 50 milligrams of N N. DMT and then a hundred milligrams of harmeline. Again, these doses are just for reference. So you have some idea.

As a general rule, one of the things they're trying to get around, if this is going to be. Used in a more clinical setting. Is that the fewer betacarbolines it appears to have less nausea. So one of the downsides, or I guess, depending on your viewpoint, Benefit, maybe. Is, you can feel really nauseous and many people do purge or throw up.

That appears to be traced back to the concentration of beta carbolines. Again, that's a little bit more. Debatable, but with a pharmahausca approach, you could reduce maybe some of those you could potentially increase the DMT amount. So DMT generally is accounting for more of. The different visions that you would have.

Now other people will argue that maybe that's just a overly simplistic, overly reduced reductionist view of the world. But that's generally pharmacology in general. So again, I think one of the hard things of doing an actual study on ayahausca is one currently scheduled one drug. So getting paperwork to do it as hard.

To getting actual source material right you'd have to document what are the other sub components in it? And that's going to vary a fair amount from one study to the next. Are those sub-components affecting the outcome. We're probably many years away from figuring out how to determine that. So a benefit of the pharmahausca approach is that you could dial in the exact compounds themselves.

And it would be a little bit easier to study. Now again, that's always debatable about, did you get rid of some of the other components in there that may be beneficial? We have very little data on that, but just mentioning it here because currently there is a whole bunch of different startup companies.

That are looking to create their own custom psychedelic. So if you can create your own custom molecule. And in theory, that could be patentable. And then if the scheduling of drugs changes. That could be a very patentable and beneficial compound.

last part two I'll link to podcasts with Dr. Mark Plotkin. There's always the issue of sustainability. If you are not using say a pharmahausca approach. Where do you get these compounds from are the people in that area? Are they compensated for it? Like how do you ethically source them, et cetera?

So that is also something to be concerned with. And if you choose to do this, something you probably want to check in.

That also. It makes me a little bit more, nervous overall, right? If there is sustainable resources for this, if it is something that does become more popular. Compounds such as psilocybin are probably going to be very sustainable. These can be extracted from different types of mushrooms, which can be grown relatively easy.

Other components. It gets to be a little bit trickier. Especially potentially for ayahausca ibogaine and other compounds. So you want to check into what is the sustainability? How did the person secure the compounds where you at. Was that done in an ethical manner?

So it's a little bit of a crash course on some of the different effects. In this particular podcast of ayahausca and some of the metabolites that are in it. Last part in terms of how does it interact? Most of it's probably the serotonergic five H two. A receptor. But the other components appear to have all sorts of other activities on dopamine.

These are both potentially presynaptic and post synaptic. So you have. Think of the end of a neuron. And you've got this little gap that it has to cross. So at this point, the neuron is changing the electrical signal to a chemical one. And it's going to release these little neural compounds that are going to flow across it.

So some drugs will act on the pre synaptic. So if you're looking at this from a left to right spectrum the end of the neuron before it crosses. Others will have

different effects on the post synaptic for portion. The really interesting part is that this allows the body to fine tune. The nervous system with different effects.

So we're still trying to figure out. How exactly do all these compounds act in isolation, but we've made a lot of progress on that. But like we said, you're going to have people have different ability to absorb them different, amount and concentrations of them. And then even if you had very similar amounts,

My pure guess, is that dependent upon an individual? You may have radically different affects. So I personally think that. Someone came up to me and said, Hey. We've got the best location. We've got everything is, tip top set and setting is taken care of. Everything, makes my personal checklists and hits all the correct areas.

I would still be very nervous before any type of plant medicine ceremony, because it just always seems to be quite variable. I've talked to other people who have done several ceremonies that have gone really easy. And all of a sudden one is very difficult. Again, I try not to think of it in terms of good or bad.

Some of them are easier and some of them are going to be more difficult. I still think there's a huge amount of unknowns at this point that we have very little data around. So that's my little chat for today. Now. Hopefully it was useful for you. Again, I'll link all of the references.

To the website primarily where you can find it. And I guess my big takeaway is hopefully going forward. We will have more and better discussions around these different compounds. And my hope is that. They won't be. Been in the extreme end of either very beneficial or if there is a negative effect that happens very negative.

And that we'll have more and more research and maybe eventually they will become. Legal so they can be used in a clinical setting. In the meantime, it's do your homework. Yeah. And I'm not recommending that people do these. I'm not saying that they shouldn't do them again. That's an individual decision that you would need to make.

But it's definitely something I would not personally take very lightly. And we do get really concerned as they become more popular that people are thinking, this is the solution to whatever was ailing them. And they go to a ceremony that is not well prepared. And something bad happens. Not only could that set a lot of the research back quite a bit.

The pendulum would then probably swing really hard the other direction. And any time more compounds get used more and more. There's always a risk that something is going to go sideways. Even drugs that we know are approved. Such as Tylenol result in, thousands of deaths per year.

But society has said that is something that is acceptable to them. But when new compounds show up, how, what and how much is acceptable? Is very hard discussion. Any questions you can post them up below or drop me an email. Again, as I said, at the opening of the show this is not medical advice. This is only for entertainment purposes.

These drugs are currently scheduled one. Substances and currently have no verified medical use, at least within the us. Thank you very much greatly. Appreciate it. And like I said, at the beginning, this is brought to you by my website, Mike T nelson.com. If you want more information go there. We've got lots of great information on keto diets, training exercise, and you get onto the newsletter.

And we're going to find a lot more information, which is generally geared toward how to increase lean body mass. How to get better body composition and do all of it without destroying your health. The reason I wanted to do this podcast is that. Probably get a firm on a questions on it. And I'm at this point, we don't have any data showing that psychedelic compounds are ergogenic in any form in terms of increasing exercise performance.

But I think you're going to see more and more athletes that are experimenting with them. And as long as hopefully the media has a better messaging surrounding it, and we have more research in this area. I do think they have a great potential. To change a lot of the clinical practices that we're doing right now.

Unfortunately, we're at the very early stages again. Of trying to answer a lot of unknowns. Thank you very much for listening greatly. Appreciate it. Talk to you all next week.

I have a good mind to go home. You had a good mind. You wouldn't be here in the first place. .