

Dr. Taylor: Welcome back to ASAM Practice Pearls, a podcast series from the American Society of Addiction Medicine. I'm your host, Dr. Steven Taylor.

Many people, including celebrities, have tried ketamine IV infusion and have written about it. In his book, Matthew Perry reflects on his own encounter with ketamine.

He says, "Ketamine felt like a giant exhale. They'd bring me into a room, sit me down, put headphones on me so I would listen to music, blindfold me, and put an IV in, and I often thought I was dying during that hour. Oh, I thought, this is what happens when you die. Yet I would continually sign up for this stuff because it was something different, and anything different is good." Perry then described it as, quote, "being hit in the head with a giant happy shovel." But then he said, "The hangover was rough and outweighed the shovel. Ketamine was not for me." But then, of course, we know that the cause of his untimely death in October of 2023 was determined to be "acute effects of ketamine."

So, for me, it's not just that this celebrity and other celebrities have written about their experiences with ketamine, but it's the powerfully convicted, extreme kinds of experiences that they describe that I find incredibly intriguing. Not to mention the absolutely tragic outcome of Matthew Perry's exposure to this drug. In my mind, this screams out for us to explore this whole question of ketamine as a treatment modality for addiction disorders. So, there's no way I can contain my excitement to have as our guest today exactly the expert who can enlighten us on this topic, my friend and colleague, a dentist, a family physician, an addiction medicine specialist, and so much more, Dr. Brent Boyett.

Dr. Boyett: Thank you so much, Dr. Taylor. It's great to be with you.

Dr. Taylor: It is great having you. So, listen, man, ketamine has been around since the 1960s. You know this and you know so much about it. I'm going to see if we can't get you to share with us, from the beginning, a brief history of how ketamine came into use? How does it work in the brain? What can you tell us just to get us started?

Dr. Boyett: Well, in the 1960s, there were some new anesthetics that came on the scene, and these included drugs that were considered to be dissociative anesthetics. One of the early ones was actually PCP, and we remember that escaped the operating room and found its way onto the street in the form of "Angel Dust" and created a great public health crisis in the 1960s and the early 1970s. That would classically fall under the dissociative anesthetic.

It had so many side effects that it fell out of favor in the operating room as an anesthetic and subsequently was pulled from the market. But in that class of dissociative anesthetics included the molecule ketamine. And so, ketamine did make the cut, and ketamine became widely used throughout the entire world as an anesthetic. It was actually used as an anesthetic on the battlefield, in Vietnam. One of

the really unique properties of ketamine is that at therapeutic doses for analgesia it does not cause respiratory depression, like the classic full agonist opioids do.

And so, it lent itself very well during the Vietnam War, to treat pain on the battlefield because we didn't have to worry so much about airway management, in the wounded soldier on the field. And so, it's been used in the dental office. It's been used in the operating room. It's been used in the GI lab, and various different labs throughout the world, really since the 1960s as a very safe and effective anesthetic. It's only recently, the last 20, 25 years or so, that its psychotherapy is being explored in research.

And we're learning a lot more about the brain, and we're learning a lot more about how ketamine affects the brain today, even though we've had it for a long, long time.

Dr. Taylor: Interesting. And, you know, ketamine is described as a neuroplastic agent. Could you share with our listeners, what does that mean, and how does that feature of neuroplasticity contribute to its potential in treating addiction?

Dr. Boyett: Absolutely. Neuroplasticity is very exciting. In fact, I would say that today is a very exciting time in the field of neuroscience. The 20th century was characterized by a different class of therapies, you know, the monoamines, specifically targeting serotonergic receptors, dopamine receptors, norepinephrine, and so forth. That was the game changer in the 1960s, 70s, 80s. That was the disruptor in the field. I believe that the current disruptors are, and have potential to be, the neuroplastogens. And the neuroplastogens, specifically, are drugs that enhance, as the name implies, neuroplasticity.

So, if I could just explain neuromatrix theory and why a drug like ketamine could potentially treat a variety of different disorders, [such] as depression, anxiety, PTSD, obsessive compulsive disorder, addiction, and even chronic pain. So, how is that possible? I mean, that seems like a panacea. It seems like that's too good to be true, except for the fact that, in many ways, all of these disorders are symptoms of an underlying disorder. And so, what we're talking about here is maladaptive learning. The thing that brings together all of these disorders is an overactive default mode network that has been built by maladaptive behaviors. So, in 1949, Hebb's Law famously coined the phrase, "Neurons that fire together, wire together." So, what does that even mean?

Dr. Taylor: Right.

Dr. Boyett: The situation is this: inside your noggin and mine are about 90 to 100 billion little living organisms, critters in their own right, called neurons. Each neuron has between 8 to 10,000 synaptic connections with other neurons, and they work together in a modular system. And it is a pattern in which those little neurons communicate with each other using a combination of depolarizing electrical currents along a phospholipid bilayer that have certain frequency patterns of depolarization.

Combined with the release of neurotransmitters in these quadrillion little synaptic spaces between the neurons that create your reality.

So, what we're talking about when we're talking about depression, anxiety, addiction, PTSD, obsessive compulsive disorder, is maladaptive learning. Neurons that fire together, wire together. The more we practice a thought, the more easily we can return to that thought. The more we practice a state of consciousness, the more easily we can return to that consciousness, just like shooting a basketball or playing a piano.

It is a learned behavior. And so, we learn to be depressed through practice. We learn to be anxious through practice. We learn to have compulsive misuse and maladaptive misuse of various dopaminergic and rewarding substances through practice. So, you can think of the default mode network as the software of well-practiced thought and well-practiced behavior.

And that's what we're seeking to soften up with neuroplastigens. We're seeking to allow new patterns of connection in the neuromatrix to form, to break out of these "ruts," so to speak, just like well-worn ruts in a road. Neuroplasticians, in a sense, bring a road grader in and smooth the ruts out so that we can get outside of these habitual thought patterns and get into more adaptive thought patterns and behaviors.

Dr. Taylor: Interesting. So, the neuroplasticity is the ability to smooth out those ruts.

Dr. Boyett: That's right. You can think of it, in that analogy, smoothing out the ruts in a well-worn road, or softening up the plastic of the default mode network so that the default mode network can be reformed into a more adaptive and functional pattern.

Dr. Taylor: Excellent. So, you've brought us to a really intricate level of understanding this, but let's talk a little bit more on the clinical level. Ketamine has been explored as a treatment for various conditions. What makes it so versatile? Why is it showing promise for addiction treatment specifically? I mean, you've touched a little bit on why it's so versatile, because so many of these conditions have their roots in that same network and that same problem with maladaptive learning. But why specifically addiction?

Dr. Boyett: Addiction is a learned behavior that is very difficult to break out of. We know that as the mesolimbic cortex strengthens our urges and desires and compulsions get stronger, it outmanages our prefrontal cortex, our executive function. So, it's not a fair fight anymore. In the addicted patient, there is this executive function, the prefrontal cortex, what I call the "future brain," that says, "I've told my wife, I've told my boss, I've told the law enforcement, I'm not going to drink anymore, I'm not going to do it, I'm determined this time, I'm not going to do it." But the mesolimbic cortex has no conscious perception of the future.

It only knows now. That the ventral tegmentum area is only concerned now—the reason I call it the “now brain.” So right now, I want a cigarette. I’ll worry about cancer and heart disease later. Right now, I want a drink. That’s how the brain works. And really and truly, we’re all kind of a Dr. Jekyll/Mr. Hyde type of case. We have prefrontal cortex, executive function, “future brain” considerations. And that is what makes us human. Apes and primates have a small prefrontal cortex. But human beings have a very advanced and elaborate prefrontal cortex. But we’ve still got the leftover circuitry from our ancestors, the ventral tegmentum area, that mesolimbic area, that just urges us to go forward, even though we can’t explain it.

And the best explanation that I know is that there is the “future brain,” the prefrontal cortex, then there is the “now brain.” And when the nucleus accumbens becomes damaged, and other parts of the brain become damaged, and the receptors become downregulated, once that changes, then it’s not a fair fight between the “future brain” and the “now brain.”

The “now brain” tends to dominate. And so, what ketamine helps us do, is break out of those thought patterns in the mesolimbic cortex, so that our prefrontal cortex, our “future brain,” our executive function, can control and manage our urges, our desires, the here and now.

Dr. Taylor: Oh, that’s great. That sounds really elegant. The question would become, how does one test that? How do you do research to demonstrate that it actually works? Because the fact of the matter is, there isn’t much research on ketamine’s effectiveness in treating SUD. And so why is that? And do you think that ketamine will ever undergo phase 1, 2, and 3 clinical trials to eventually become FDA-approved, in a manner similar to the way that esketamine has done for treatment resistant depression?

Dr. Boyett: Yeah, that’s a great question. And the answer is, maybe not. Maybe not in the form of racemic ketamine—the old school racemic ketamine. And here’s why. Our healthcare system, our research, is funded, largely, through for-profit organizations, who invest hundreds of millions of dollars in phase 1, phase 2, phase 3 studies.

In fact, to get a molecule all the way from phase 1 through phase 3, by some estimates, costs over a billion dollars. And so, this requires venture capital investment. This requires investment banking. This requires the financial sector. Placing faith and gambling on a certain treatment.

And so, the only reason that our capitalistic system invests in the development of new pharmaceuticals, is to recruit that investment through profits once the molecule makes it to market. Our system is set up such that repurposed drugs don’t really have a process that allows for exclusivity and patents on those molecules. So, we’ve already talked about the fact that racemic ketamine has been around since the 1960s. The patents and the protective mechanisms that control the exclusivity on that molecule have run out a long time ago. So, any pharmaceutical manufacturer around

the world can make this drug and sell it on the market. And so, who and what would be the incentive for anybody to invest 500 million, 600 million, or whatever it would take to show that racemic ketamine is safe and effective in the treatment of depression, addiction, and these other disorders when after you do this, you don't have exclusivity on the drug?

An example would be Wellbutrin. You know, we remember Wellbutrin was an antidepressant that was on the market. And it was effective as an antidepressant, and, serendipitously, we learned that some of the people that were taking Wellbutrin for depression lost their compulsion to smoke cigarettes and use nicotine so much.

So, they came back and did the research on it, and did show that Wellbutrin was effective as a smoking cessation agent and tried to sell it through the brand name Zyban. And so, the same thing's true with racemic ketamine. Having said that, racemic ketamine works by blocking the NMDA receptor and thereby blocks the effects of glutamate. And glutamate is one of the primary excitatory neurotransmitters in the central nervous system, the opposite of GABA and glycine.

So, this is a very important neurotransmitter system that has been neglected through the 20th century, and because of our focus on monoamines and other types of neurotransmitters. But I think that glutamate and some of these other amino acid neurotransmitters' time has come in the 21st century. And so, what specifically blocking glutamate and blocking NMDA receptors does to enhance neuroplasticity is it causes the release of brain-derived neurotrophic factor, BDNF.

And so, in answer to your question, while racemic ketamine may never have 600 million or 800 million dollars invested in it to prove or disprove that it is effective for these disorders, but similar molecules may. And so, we've already seen this with racemic ketamine. And I have to get into some chemistry, that I'm really not qualified to talk about here. But really and truly, esketamine, which is the FDA-approved therapy, it's a nasal spray ketamine. But this is a **chiroptics** trick. Basically, you know, with benzene type ring structures, some bend light in the clockwise fashion, and others bend light in a counterclockwise fashion. We call one dextrorotatory, one levorotatory. It's **chiroptics**.

It turns out that the most bioactive, the most pharmacological, is one or the other, I can't remember which one it is. It's either dextrorotatory or levorotatory. And the other 50% of the molecules, which is the other **chiroptics** orientation, is just along for the ride, for the most part, in racemic ketamine.

So, what the pharmaceutical industry has developed is a process by which removing the inactive **chiroptic**, dextrorotatory or levorotatory, whichever it is, and just leaving you with a pure molecule that is thought to be bioactive and the pure molecule that blocks the NMDA receptor and blocks the effects of glutamate.

The question is, is esketamine more efficacious and more beneficial than just racemic ketamine? We don't know. As far as I know, there are no head-to-head comparisons, and there probably won't be, because who's going to pay for that?

Dr. Taylor: And yet someone paid to have esketamine go through the clinical trial process to be FDA-approved for treatment resistant depression. Is it possible that esketamine, itself, will be the compound that will be tested and brought through the clinical trial process for treatment of addiction? And would that solve the issue that you've been describing?

Dr. Boyett: I think esketamine certainly could. It certainly stands to reason. And again, we're not talking scientific reasons, we're talking about financial reasons. The FDA allowed exclusivity on esketamine because it is a unique molecule, because it has removed the unnecessary **chiroptic** molecules that don't have biological effect. So, Johnson & Johnson and Janssen Pharmaceuticals were able to get exclusivity, and subsequently they're able to recoup their tremendous investment in proving this. And so, yes, I think that esketamine certainly should be, and probably is being, researched for the treatment of addiction and other things, other than treatment-resistant depression. And I think there are other neuroplasticity factors in the pipeline that may work similarly to release brain-derived neurotrophic factor that also may have a benefit and help.

Dr. Taylor: I strongly suspect that you're right about that, and I'm certainly hopeful that you're right about that. So, let's talk about what it actually looks like. I mean, you've got experience of actually providing patients ketamine infusions, and I think our listeners would love to hear a little bit about the procedure of providing someone ketamine infusion therapy. What does that look like? What are the key dos and don'ts for clinicians? What are the best practices? Just take us through that if you would.

Dr. Boyett: Well, all of that is still being worked out. So, around the country, this is a fairly new therapy. And, as in the case with other fairly new therapies, variation runs the gamut. It's a wide spectrum. You and I, you know, kind of grew up in the treatment of addiction through the buprenorphine area.

And while we both are big advocates for buprenorphine and access to buprenorphine, I certainly, and I don't want to speak for you, but believe that buprenorphine in and of itself, is not a treatment. It is a tool involved in the treatment. I would suggest to you that ketamine is a similar situation.

Ketamine is a fabulous tool. But in my opinion, ketamine, like buprenorphine, should be used as part of a comprehensive biopsychosocial approach to wellness. And so, it's one thing to sell buprenorphine prescriptions. It's another thing to provide biopsychosocial treatment. And I would say the same things with ketamine. It's one thing to sell ketamine infusions, it's another thing to integrate that experience into a healing and wellness approach that involves addressing biological factors, psychological factors, social factors, biopsychosocial, nature-nurture neighborhood,

body-mind-spirit. That's the business that we're in, if we're in the addiction treatment business.

Dr. Taylor: I couldn't agree more. Describe that for me, what that looks like.

Dr. Boyett: So, ketamine therapy starts with screening. You want to make sure that the patient is appropriate for ketamine therapy. There are certain medications that may interfere with ketamine therapy. For instance, Lamictal has been shown to block some of the beneficial effects of ketamine.

Benzodiazepines, contrary to popular belief, can sabotage some of the therapeutic effects of ketamine. So, looking at the medication list and maybe stopping benzodiazepines and Lamictal before the infusion, so the ketamine is unimpeded. You know, there's caution that should be practiced with regards to ketamine.

Not everybody is a good candidate. When we give ketamine, let's be clear what we're doing. We are actually inducing a psychosis. That is a situation that requires some preparation. Patients need to know what to expect. They need to have what I call "flight instructions" before we take off. And that involves breath work. That involves mindfulness therapy, anchoring technique, because you may have a bad trip. It may be an unpleasant experience, and that's okay. But a bad trip does not mean bad therapy. But the patient does need to be prepared for whatever they will encounter while they are under the influence of ketamine.

And, Dr. Taylor, I like to coach my patients and prepare them to enter into the experience of ketamine infusion with the spirit of a curious student. So, when you are under the influence of ketamine, be interested in everything that you experience. Some people have a predisposition to be afraid and fear and defy and resist. The patient is coached to resist this temptation. When you see something scary, feel something scary, experience something scary, be interested in that. What can I learn from that? And go with it. Don't fight it. Go with it.

Ketamine is kind of like a giant tidal wave. If you try to fight it, it's not going to go well. And if you go with it, it can be very life changing.

Dr. Taylor: Fascinating. Wow. So go on. What happens next? They're taught to approach this with the attitude of an interested student. You want to go with what you're experiencing, not try to run from it or avoid it. Then what? What do I do, coach?

Dr. Boyett: So, what we do once we set your intention, and setting an intention, is important too. So, what do you hope to learn about yourself? What do you hope to learn about the world? What do you hope to learn about the universe? What do you hope to learn about God?

What do you hope to learn about whatever? And set that intention. Then there's the important part of set and setting. So, setting is the environment that you're in, and we try to make our ketamine infusions as natural and un-clinical and unsterile as possible. More like a spa, less like an operating room, so to speak. So it's more relaxing, calming, plants, nature, you know, those kinds of things that allow people to be more calm. Patients are brought back and placed into usually a recliner. We start an IV, and we place an eye mask over their eyes to allow them to be introspective.

We want them to be as introspective as possible during this whole process. We place noise counseling headphones over their ears with a specific playlist. Our playlists are specifically designed with certain crescendos and decrescendos, with certain beat and rhythm patterns. We don't put any lyrics in our music, and it's designed to enhance the introspective aspect of the experience. We don't want people to be distracted by outside environments during ketamine infusion. We want them to go in deep. We want them to explore other realms of reality. And so, the ketamine music, is very important, in my opinion, to the experience. Has been done by a PhD researcher in United Kingdom named Dr. Mendel Kaelen. And Dr. Mendel Kaelen is well published. And so, we, I, specifically use Dr. Mendel Kaelen's music. You can actually find ketamine infusion music on Spotify. So yeah, the music is important.

We encourage people to wear the eye mask, and then when the infusion is taking place, we try to leave that patient alone. Now, the patients have blood pressure cuffs on and that's gonna pump up and let down. And that's just unavoidable because we have to monitor safety. Airway, breathing, and circulation comes first. We put a pulse oximeter on their finger, we watch, you know, EKG. They have a blood pressure cuff on. But once we do that, and we get the IV infusion going, we leave that patient alone as much as possible.

Now sometimes we have to come in, and if a person gets a little upset or something, we have to reassure them. But that's rare, and we try to minimize that as much as possible. We ask all of our patients to bring a, quote, "trusted sitter" that can sit with them in the room. We monitor our patients on video, but we have a trusted sitter that sits with them. But the trusted sitter is given instructions. And the main part of their instructions is to leave the patient alone as much as possible. Some patients may cry. Some patients may yell out, some patients may become angry. There's all sorts of different emotions that [the] patient may go through.

Generally speaking, unless the patient asks for our assistance, "hold my hand" or whatever, we let them go. We let the ketamine take them where the ketamine takes them.

Dr. Taylor: Wow. That is awesome. So, I don't want us to go too long, as fascinating as this sounds. But I gotta ask this question. Because this all sounds so pleasant in a lot of ways, or potentially pleasant. Is there a risk of somebody becoming addicted to or dependent on ketamine?

Dr. Boyett: Yes, I think there is a risk of abuse. Let me just put it that way. Tolerance does build. And I have several misgivings about self-administered ketamine in the home for several reasons. I mean, the Matthew Perry case in point. While ketamine is not an evil drug any more than propofol is an evil drug in the Michael Jackson case, I don't recommend that people use propofol IV to fall asleep at night. That is an improper usage of a good drug. While ketamine is not necessarily an evil drug, I do not recommend that people use ketamine and get in the hot tub. That is a bad usage of it. So, I do have concerns about mail-order ketamine, self-administered ketamine in the home. For me, based on what I know today about ketamine, ketamine should be done as an outpatient procedure, under observation of a trained medical professional.

Intention settings should be part of the preparation, and then the integration. Subsequently, I always recommend that my ketamine patients, after every ketamine infusion, go home and journal their experience within 24 hours. I think that does a couple of things. Number one, it allows them to organize their thoughts while their memory is still fresh. And there is something about the act of thinking something and turning that thought into mechanical writing that allows the hippocampus to lay it down into a longer-term memory.

So, that's intention setting, education, flight instructions, set and setting, the infusion done a certain way, with certain music, with an introspective intention. Then also journaling.

And let me say this too, and I think this is incredibly important, keep in mind that ketamine is a neuroplastogen. So, what it does is it softens up the default mode network and allows us to form new thought patterns. In my opinion, ketamine and any other psychedelic neuroplastogen should be a segue to lifestyle change, lifestyle modification. And what does that mean? It means listen, if you soften up your default mode network and go right back into your environment, your social setting, and start doing the same old things you were doing before, that default modes network's going to harden back up and solidify, and you're going to be wearing the same ruts out into the road that you were wearing it out before.

So that's the reason why, you know, I don't think that pump and dump therapy is going to be as effective long-term as integrating these things. So, what does that look like? You know, we talked about the fact that ketamine releases brain-derived neurotrophic factor. Well, guess what else does? And it's free. Exercise.

Dr. Taylor: Oh yeah. How about that?

Dr. Boyett: Yeah, exercise releases BDNF, and it's free.

Dr. Taylor: Let me stop you right there because you're talking about something that I want to bring to the forefront, which is access, right? Because exercise is free and it's something that you can do. I went out and did my five-mile walk this morning. That was free. The whole procedure that you just described, with an expert like you, doing

all these wonderful procedures to give me a full experience of IV ketamine infusion done the right way. That doesn't sound like that's terribly free, and it doesn't sound like that's as easily accessible as me walking out there and doing my walk. What are the barriers that exist? How accessible is this awesome treatment that you sound like you would be the ideal person to provide for people?

Dr. Boyett: Well, it's still hard to access in certain parts of the United States. I think there's probably more access in certain parts of the country. The west coast, I think, probably has better access than certain other parts of the country. Insurance, in most cases, does not cover racemic ketamine infusion.

Why? Because it's not FDA-approved. So, in most cases, patients have to pay for this. And, you know, will that change in the future? I don't know, but again, in order to do the large-scale double-blinded clinical trials that FDA approval requires, requires a lot of money.

Dr. Taylor: So, that suggests that it may remain more of a niche therapy than a mainstream treatment for addiction. Am I assuming too much by making that statement, or does that sort of sound like what you would conclude as well?

Dr. Boyett: That may be the case. It just depends on the efficacy and how things play out. And again, keep in mind that ketamine is not the only neuroplastogen out there. It's an old one. It's a safe one. It's one we're familiar with, but it's not one that we can get exclusivity on, not the racemic form of it, but there probably are going to be other molecules in the pipeline.

And we could talk about psilocin, which is the active ingredient in psilocybin, the magic mushroom. Noribogaine, which is a slightly different type of molecule than ketamine and so forth but has some similarities. You know, there are other ones, and there are variations of these, we call them analogs, that are being studied that can get exclusivity, and that may be what happens, more than just racemic ketamine being more widely spread. There may be evidence that comes out about other neuroplastogens that the FDA can and will approve, and the insurance industry will embrace.

Dr. Taylor: Fascinating. So let me just quickly summarize some of what we've learned from you, Brent. Cause this has been so fascinating, and you have been so incredibly enlightening in your discussion of all this.

Number one, ketamine can be a valuable tool, right? It can be effective, but we really shouldn't be using it as the only form of treatment. It's not the kind of thing folks should try to do at home in their living room by themselves.

It should be a treatment provided by an expert in the proper clinical setting with all of the correct preparation in advance. Is that right?

Dr. Boyett: That's absolutely right. In my opinion, yes.

Dr. Taylor: Number two, that you've got to do it the right way, and that means that you have to have somebody who knows what they're doing. You have to have a Dr. Brent Boyett, which is kind of hard because there's not a whole lot of Dr. Brent Boyetts out there, but somebody who's adequately trained is what I really mean by that.

Number three, and you hit this one on the head really well, and I really appreciate you pointing this out. This needs to be the beginning of a lifestyle change. Just as we've been telling folks with substance use disorder for years and decades to try to go through a treatment and then go right back to the same environment, the same people, places, and things, that's, generally speaking, not going to work well for you in the long term. You would agree with that as well?

Dr. Boyett: I would agree with that. It has to do with changing your environment. You know, the old AA, you have to change your playground, change your playmates in many cases. We need to exercise. Part of the reason for the diseases as a despair in the United States, in my opinion, is the fact that our culture just does not move our body the way our bodies were designed to move.

We are built to move, and we need to move, and we don't thrive and excel in life unless we have a certain amount of exercise. Sleep. I cannot say enough about sleep. A good life starts with good sleep. And we, in modern society, kind of diss that. Sleep is a second thought for many of us. Diet is important. Our relationships are important. Where we allow our thoughts to go is important. We talk about cognitive behavioral therapy, and that's so important, but this has been talked about for thousands of years, Dr. Taylor. The Stoic philosophers, Marcus Aurelius, Epictetus, Hippocrates, and Socrates. They all talked about the fact that we must control our thoughts. You know, there's a certain sphere of things that we can control. There's a certain sphere of things we cannot control. The wisdom is in knowing the difference.

The old serenity prayer, God give me the strength to change the things that I can change, the serenity to accept the things I cannot, and the wisdom to know the difference. That's Stoic philosophy 101. And that is what we today call Cognitive Behavioral Therapy. And that, too, needs to be applied in the lifestyle change.

Dr. Taylor: I could not have said that better myself, so I won't try to. Dr. Brent Boyett, awesome discussion. I really appreciate this. I just got to say to audience, you've been treated to something that's really phenomenal. I want to thank you for tuning in to ASAM Practice Pearls. I want to thank Dr. Brent Boyett, for sharing his riveting insights on the use of ketamine infusion therapy and stoic philosophy, and people of substance use disorder and various other disorders of maladaptive connection.

For more information on ketamine, check out today's show notes for many great resources.

If you're an ASAM member, you get exclusive access to a number of special interest groups, including the Psychedelic Medicine Group, which was founded, no surprise, by Dr. Brent Boyett. Explore expert talks on ketamine and more, if you join the psychedelic medicine group. But to do that, you have to be an ASAM member. If you are not an ASAM member, here is my encouragement to you to join today so you have access to folks like Dr. Brent Boyett, who is an ASAM member and is a past president of one of our state chapters.

Don't forget to subscribe and share this episode with colleagues who may find this information helpful. We'd also love to hear your thoughts. What has your experience been with ketamine? Be sure to check us out on social media and join the conversation.

Thanks for listening, and we'll see you next time on ASAM Practice Pearls.