Breaking the Stigma: The Wonderful Ways Cannabis Affects the Aging Brain Transcript

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Introduction to Cannabis and Alzheimer's

Hello and welcome to the Reversing Alzheimer's Summit. I'm one of your host, James Maskell. And with Doctor Kristine Burke we are bringing you cutting edge content about the new treatments and innovation that's happening in the world of Alzheimer's and dementia.

And I'm super grateful to have here for a special interview, Doctor Bonni Goldstein. She is a physician in California and also a leader in the space of a cannabis medicine.

And, we're going to dive into some of that today. So welcome, doctor. Thank you so much for having me, James. So, you know, we actually end up having a conversation a few weeks ago.

And I was very intrigued about, this part of the conversation because it's not something that, you know, you hear talked about a lot. And I think I've seen videos online of people with Parkinson's, tremors, you know, having significant changes like visible changes, very, very quickly with, with cannabis.

But why don't you just start at the beginning? Like, why is this particular area of neurodevelopmental, neurodegenerative disease, you know, interesting.

And what do you think that, you can add to this conversation? Well, we have very compelling data that demonstrates that cannabinoid compounds that are made within the cannabis plant are beneficial to the human brain.

And people might say, what are you talking about? That's exactly the opposite of what I heard. This is, you know, your brain on drugs and THC is bad for you.

But we have to be very clear about the differences between medical use and non-medical use. And what I'm talking about specifically here is medical use.

We have a system called the endocannabinoid system. It is was only really discovered in the late 90s, early 1990s. So we're still in the infancy of understanding it.

But this is a system. It's a regulatory homeostatic system that has it, you know, was exists in many creatures. Anything with a vertebra and its role is survival and protection.

And one of the reasons it evolved was to help protect against neuro excitatory conditions, neuroinflammation, inflammation and cell death in the brain.

And so when we talk about Alzheimer's and other neurocognitive neurodegenerative disorders, we're talking about, you know, changes that are taking place in the brain.

How the Endocannabinoid System Works

And we have so far been unable to come up with medication to help prevent and really to treat. I think the treatments right now are, you know, there you know, I see a lot of patients that come in who's neurologists have recommended various medications and they're just not doing well on them.

We have to remember that these we make our own inner cannabis like compounds as part of our endocannabinoid system to maintain that homeostatic balance to protect us against inflammation, cell death. And so on.

And by using plant compounds, these external compounds, taking them in can help reestablish that balance. And the the data from animal studies is very compelling.

There's evidence that both THC and CBD can inhibit amyloid beta protein and tau phosphorylation, and that also when you act the receptors that are part of the system called cannabinoid receptors, you actually get this protective mechanism.

So I don't see any reason why not to take advantage of that mechanism that we already have set up. Yeah, that makes a lot of sense. Can you just, can you give us an idea?

The unknown cannabinoid system is super fascinating because, obviously this relatively new science and understanding. Can you give us a, an idea of the sort of the physiology of what's happening as that system interacts with the brain?

Sure. So your endocannabinoid system, I'm going to give you the simplified version. It consists of receptors that act like little locks on cells. And then you have these compounds called endocannabinoids are inner cannabis like compounds.

They're what we call the ligands or the compounds that attach to those receptors. And then we have enzymes that make these compounds and break down these compounds.

And so let me just give you an example. Someone getting chemotherapy gets very nauseated let's say. And they'll swear that they take a puff of cannabis and all of a sudden they're eating a deli sandwich.

Right. And so how does that happen? Well, it's not magic. What's happening is that those compounds, are the cannabis compounds that someone is taking attached to those receptors, which sends a message to the cell.

So like when serotonin binds to the to serotonin receptor, we know what happens. Dopamine binds to a dopamine receptor. We know what happens. Well when cannabinoids bind to these cannabinoid receptors, we get these wonderful responses of dialing down any kind of over message nausea, pain, aggressive behavior, irritability, anxiety.

All of those are over messages. And we use this endocannabinoid system to help bring all of those overexcited messages back into balance. Now what happens is as we age, our endocannabinoid system degrades just like everything else that we have that we're fighting against right as we age.

And so it can be this endocannabinoid system gives us a beautiful target, that we can use cannabinoids from the plant to enhance, to augment that system, to help rein in some of those over excitatory messages.

That's really interesting. You know, I think, you know, one of the one of the themes of the summit has really been interesting ways to deal with neuroinflammation, essentially.

And we've heard during the summit, we'll hear on some experimental medicines that are coming down the pipe that can do that.

Cannabinoids, Neuroinflammation, and Brain Protection

And we'll hear about, you know, all the different things that like subsets of root cause that drive neuroinflammation. It sounds like there's there's some, there's some ability within these plants to affect neuro probation.

Is that right? That's correct. And so what's really interesting. So everybody always focuses on THC. And remember THC is just one compound that the cannabis plant makes.

And it can be used medicinally. I use it all the time medicinally in my patients. And the goal, of course, is not to be stoned. It's to have the right dose so that you can achieve your goals of treatment, but without impairing somebody.

Because nobody who's ill, who already feels somewhat impaired by their illness, wants to be more impaired. Right? And so certainly end of life, I don't it doesn't matter.

But I treat children with THC who are able to go back to school. I treat young adults who are able to manage their anxiety and some other conditions. And I've also treated many elderly patients who have been fearful of THC but in proper low dosing, medicinal dosing, it can be very helpful without impairment.

What I'd like to say, though, is that there's other compounds in the plant and everybody's heard of CBD at this point. Cannabidiol. It's a claim to be a panacea for lots of things, but it does address neuroinflammation.

It is well known and it's well documented in the research that it is neuroprotective. It's an antioxidant and an anti-inflammatory. We also know that CBG, cannabidiol, which people are not as familiar with but starting to become familiar with, was initially considered a minor cannabinoid.

I call it a major cannabinoid now, but CBD also has the ability, when combined with CBD, to provide potent anti-inflammatory effects, specifically addressing neuroinflammation.

And again, many of these reports are in animals. We've been somewhat restricted by the schedule one status of THC and kind of the stigma that comes along with cannabis from doing meaningful research.

But there is enough research to justify further clinical investigations. And certainly what I've seen in my practice, and again, I practice in California, where we've had medical cannabis for almost three decades now.

I've treated thousands and thousands of patients and like and I'm a very kind of neurotic physician. So I'm very careful, very specific dosing and instructions.

There's no question that these cannabinoids can have what I think may be preventive. And I'm not making that claim. I'm just saying that many of my patients who use cannabinoids for other conditions seem to age well.

They still have their faculties. And additionally, those patients that come to me with dementia symptoms across the board, the families report great results in terms of less aggression, less irritability, better appetite, better sleep, able to get off other pharmaceuticals that may have terrible side effects or are not effective.

My own almost 95 year old father takes, CBG, CBD, CBD, and very low dose THC before bedtime and is still with us mentally and doing well. And so it's just overall, I feel like cannabinoids are ignored because of the stigma.

And that's just really not the way scientists should think. Yeah, I'd love to get into that stigma in a minute, but I just I you mentioned the cannabinoids and you mentioned the THC.

Is there anything outside of that? Because I know there's also like terpenes and other things that are a part of it. Do they have any effect on the brain and do they have any relevance to this conversation. Absolutely.

So when we talk about cannabis, you know, it's just an umbrella term. There's so many things that exist under the cannabis umbrella. So we talk about whole plant cannabis.

We talk about products that sometimes referred to as full spectrum, meaning everything from the plant. We talk about broad spectrum, which means kind of everything from the plant except THC.

And then we talk about isolates of course, research focuses on single compound, medicine, meaning like just CBD isolate by itself or just THC. We do see some studies coming out now with using the full plant or the whole plant.

And there is evidence in some studies, cancer and in pediatric epilepsy that show that the full spectrum, meaning everything Mother nature packages in the plant, those types of products seem to be more beneficial than isolate.

I'm not saying there isn't a role for isolates, I'm just saying that they seem to outperform clinically. When you have

that full spectrum and part of that full spectrum are terpenes.

And terpenes are just as the fancy word for essential oils.

Terpenes, Flavonoids, and Full-Spectrum Cannabis

And these include compounds like bersin and beta carry off line and other, compounds. Beta carry off line is very interesting compound. It's a potent anti-inflammatory.

What's interesting about beta carry off lean, which is one of the main terpenes found in cannabis plants, is that in addition to being a Turpin, it also acts like a cannabinoid.

It binds to the type two cannabinoid receptor, the type two cannabinoid receptor is one of our main inflammatory regulators. So we want that action at the type two cannabinoid receptor.

And by the way, THC binds to both type one, which is why you can get altered with it. But it also binds to type two. Way to carry off Linas a Turpin is seems to have a proclivity for that CBD receptor.

What's interesting, too is there's a whole slew of flavonoids in the plant, including can flavonoids. There's also quercetin, which many people have heard of.

These are anti-aging compounds. These are antioxidant compounds. So the plant itself seems to have all of these very prominent anti-inflammatory, antioxidant, anti-aging, neuroprotective compounds.

And again, to me, you know, we all talk about eating more plants, right. And plant based diet as being proven to be less inflammatory and very helpful.

Cannabis should not be singled out as the plant that we shouldn't use. It should be studied and it should be used to its benefits. Yeah. Well, let's let's talk about about some recommendations because obviously listening to this summit, you have people like you and I that live in California and can have access to this both medically and recreationally.

You've got different laws across the country for the different like parts of the compounds, but there's also people listening from all over the world who, you know, it's very varied.

You know, I've been spent time in South Africa and you have, you know, pretty much easier access to that. And then, you know, in England, almost the opposite.

So, you know, for for people who are listening to this, who, you know, can now have the benefit of listening to a doctor that you know, has full scope of practice, essentially.

I guess I'd love to understand what you think for someone who is either like a caregiver or someone who is looking to protect their brain long term, or someone that's working with someone right now, what are your sort of best recommendations for the biggest advantage, with the least downsides?

And, and, and if you had full access to, all kinds of variants, like how would you how would you recommend that people start to interact with this? Sure.

So it's a great question. And it's, you know, loaded with all kinds of issues about self-medication and so on. Do you know what you're doing? Is this complex?

So the first thing I tell everybody is educate yourself. Go online and read. Read. I have a video series that has some interesting stuff. So do other practitioners of cannabis medicine, but educate yourself so that you can understand that cannabis is not just recreational or or non-medical use of THC.

That is a component of it. But, you know, I live in the medical side. On the medical side, again, you want to know what you're doing. So educate yourself first.

The second thing you should do is if you can connect with a knowledgeable practitioner, not only physicians, but there's nurse practitioners, there's RN's, there's a lot of people out there who are licensed health care practitioners who can help you sort out, your specific situation.

And one of the things that's very important, James, is that although there are not many serious cannabinoid drug interactions, we know that, lot of people over the age of 65 have what we call polypharmacy.

And you want to make sure that there isn't going to be some drug interaction. CBD does interact with many drugs.

Practical Guidance on Medical Cannabis Use

Most of the time it's a non-issue. But sometimes it can be an issue, like, for instance, warfarin or sometimes some immunotherapies that people are using for chemotherapy.

So you really don't want to jump in on top of cannabinoids if you've got a list of other medications. And then the other thing is to take into account is that we have the saying start low and go slow.

And the idea here is to start very low dose and to titrate up little by little. Looking for the lowest dose. That gives the best effect. And if you tip into side effect land, then you need to come back because in my experience and what I do with my patients is I manage their cannabinoids dosing such that and combinations of doses of different cannabinoids.

I should say such that they don't have side effects. The vast majority of my patients just don't have side effects. So how do you do that? Well, you build a regimen, and that's why meeting with somebody who understands how to do this medicine is really beneficial.

It's different than, you know, in the real world. They hand you a prescription, you go get your medicine from the pharmacy and you go home and you take it for three months, and then you kind of check in with your follow up appointment.

Cannabinoid medicine is customized. It's personalized, and you want to have somebody who you can check in with on a frequent basis to make sure you're on the right path.

The beauty of cannabis medicine is, unless you're on really high doses, you do not have to wean off of it like you have to with a lot of medications, right? You don't.

You can cold turkey at noon. Nothing bad will happen. You can pivot. You can switch products, you can try a different cannabinoid. There's so much flexibility.

And that's what I love about it. The downside to that is it just can take time to find what works best. But I don't think that's much different than when you're being prescribed pharmaceuticals and something gives you bad side effects.

You have to go off of that. You get a new one, right? Change the dosing. It's not really that much different. It's just it would help to have somebody hold your hand through the process.

And I've also written a book that gives some dosing guidelines for adults. What's the name of that book? The book that I wrote is called Cannabis is Medicine.

It's been out for almost five years now, and there is a chapter on kind of explaining the products, explaining CBD, THC ratios, also explaining dosing and mostly for adults.

Okay. Yeah. Let's jump into the conversation about, about the different forms, because I know, you know, obviously

in the in the video that I remember watching about Parkinson's, it was sort of like a liquid tincture.

But I know there's, you know, there's like gummies and then there's the smoking. So I'd love to just get your thoughts on what you've seen, be, like healthy and sustainable for people who are using this in the dementia, Alzheimer's.

Sure. Brain health. So in general, we have inhalation which can be smoked or vaped. And of course, certainly I don't recommend smoking. There's edibles.

So anything that you eat or drink that goes into your stomach could be a capsule. Could be a beverage that they have out now. It could be an edible a candy bar really anything like that that you would swallow.

Tinctures are liquids. Now we use we call them oils, tinctures, extracts, kind of all interchangeable. And those for most people, they'll put them under their tongue and hold them sublingual, or they just take them and swallow it.

In my pediatric practice, parents sometimes mix it with food and give it to the child that way. And then there's topical, which, by the way, doesn't get into your bloodstream.

So it would really just be local for like arthritis type conditions or maybe a skin rash. And then there's other like patches and suppositories, which I don't use very often.

They're a little unpredictable. And so I personally really like to start with tinctures. Those are the liquids because one, you can be very accurate with dosing.

And two, they're just really versatile for people who struggle to swallow pills or who are we're not sure of the dose. So you could start low. You can titrate up.

You can find dosing in between when something comes. Let's say is a 25 milligram capsule. That's the dose you're stuck with and the multiples of 25. Whereas tinctures allow you to really dial in.

You could literally get 10.5mg, right? So you could really dial in. So I really like the tinctures. And edibles are okay too. I do have some elderly patients that take gummies.

The nice thing about gummies, you can cut them evenly so they tend to do okay with those. And because they're sweet, you know, some people who have an add, the tinctures don't taste that great.

So some people who don't like those are able to take the edibles. But we have to remember very something very important. The way you take it changes what we call the pharmacokinetics kind of how much you get, how much you're absorbing and how you're metabolizing it, how soon it is too quick in.

So for instance, inhalation, you're feeling it within five minutes. So if you're nauseous having a migraine, having like rage type behavior inhalation or severe tremors, you might want to take inhalation.

It helps immediately. An edible can take up to two hours to work. And for someone who's suffering, that can be a very long delay. Tinctures are somewhere in the middle, and that's why I like them.

Yeah, that's really interesting. Well, look, I think you've given us all some great starting points to start to think about it. I guess I just love to, like, finish up by just talking a little bit about the stigma, because ultimately, a medicine that seems to have so many beneficial effects in this area.

There's obviously, you know, a lot of it's not available widely because of the stigma, and it's taken a long time to get to its availability that we have today.

Forms of Cannabis and Dosing Considerations

I'd love for you to just dive into, like, what you think is driving it and what you what you see is the future of of cannabis as medicine. Well, unfortunately, the stigma is hard to undo, right?

We've all been propagandized Reefer Madness movie style. People are quoting that and saying, you know, this is bad for you there. There is no question that there is problematic use, but problematic use is not equal to medical use.

It just isn't there. There's a researcher in, who's also a professor at Harvard University who's done research comparing medical and problematic use, and there's no overlap whatsoever.

So the whole idea, though, is that I still see even physician specialists equating the two. And that's the first thing. We don't equate abuse with medical use.

We just can't. Now, of course, there are people who abuse, but in general if someone is under medical supervision, I find they just don't. They're just not abusing it.

I, am part of a research grant right now for the Department of Cannabis Control here in California, and we're looking at over 600 patients under medical supervision amongst four physicians.

And we have had two patients out of over 600 end up in the emergency room, one for a seizure. That was probably, not related to the cannabis, and one was a dosing issue where the product changed their, formulation and it was double dose.

The patient thought they were getting five milligrams when they took ten. And she ended up in the emergency room with no real issues. But we just don't see that under medically supervised patients.

So I really want to drive home that point, which is medically supervised cannabis is just like anything else, medically supervised. It's very it's likely that the patient is getting good advice and can manage.

Now, the other part of it is cannabis is extraordinarily safe. It doesn't really cause fatalities unless there's very, egregious use of it. And, when I say that, I mean, like cannabinoid hyperemesis syndrome, it's been pointed out as a couple of fatalities, and we all talk about there's no fatal overdoses.

There isn't. And so it's extremely safe. And that's the one thing that I think that everybody needs to know. If you go into the scientific literature and you read the clinical trials on cannabis medicine, almost every single study reports safe and well tolerated.

And again, this is medical use, safe and well tolerated. And so we just have to drive home that point. I think unfortunately, you know, since it can't be patented, pharmaceutical companies are a bit not happy with people going off pharmaceuticals on to cannabis medicine.

There's other, you know, social biases. People don't want to be seen as stoners. There was a survey that looked at people or elderly people using cannabis, and they didn't want to tell their doctor because they didn't want their doctor to think that's era stoner.

I mean, this is it's really all about education, James. That's really what the key is. It's all about education. Do you think do you think a typical journey for someone is to start off with a medical organization in order to, like, reduce the downside risk and make sure that they're within the right zone, and then they would be like educated and empowered enough to take care of themselves on going.

It seems like, you know what, add a bit of yeah, ameliorate and experience. You know, it's it's not so critical to, you know, to always have it be medically oversight and in a way that you probably would with XYZ or something like that.

But that's exactly right. I have patients who have been on, like patients who have been with me for many years.

You know, they want to continue being under a medical umbrella, but I have many who leave after a few years under my, care who continue to use it, who stay in touch, who let me know that things are going well.

And I've always told them, you know, something occurs, you know, you develop something new and you want to talk about what the research shows about cannabis.

Feel free to reach out to me. But, you know, I joke around Much Ado about Nothing.

Stigma, Safety, and the Future of Cannabis Medicine

Cannabis is, when used appropriately, when used medically, when you have some knowledge about it, boy, you can really get some great results, and you don't necessarily have to stay under the supervision of, of a practitioner.

So many people do very, very well. Once they understand the compounds, they understand the dosing, and they understand how they react. So just give us finish off here by giving us your vision of a completely integrated cannabis as medicine ecosystem.

Like how does how does healthy aging happen and what role does cannabis play and how well, what point in the patient journey is a patient integrated on given cannabis or introduced to it and educated about it?

And how do you see it playing a role in in a healthy aging journey? So I see it playing a role as just part of an overall healthy, you know, healthful regimen.

So, of course, you know, if you're eating garbage and you're not sleeping well and your gut is a mess, cannabis can only do so much. Right. And one thing we didn't talk about, which is probably a whole nother conversation, is how the endocannabinoid system influences the microbiome and how the microbiome interest influences the endocannabinoid system.

They are very closely tied. So I do find that patients who are paying attention to all of these kind of puzzle pieces, if you will, of their healthful regimen, they're exercising, they're trying.

90% of their diet is clean and meant for healthful purposes. Adding cannabis if you are struggling right now, I'm not saying that everybody should take it, but there is like people ask me all the time, what about prevention?

Well, there's some evidence in the animal literature that animals in in mouse models of Alzheimer's animals who started taking cannabinoids before the insult that led them to the Alzheimer's physiology was protective.

So why do we want to wait until we are ill? And so there is something to that. We're a long ways away from getting the research that shows up. But again, because cannabinoids are safe and well tolerated, and because there are many clinicians out there who are willing to help people get on a low dose regimen to help, let's say, augment and enhance that endocannabinoid system.

I definitely see cannabinoids as part of that anti-aging process. One thing that my one of my goals, James, before I leave this earth, is to help practitioners be able to have a conversation with their patients when the patient asks, what about medical cannabis?

Doctor? Right now, hardly any clinicians can answer that question. And I know clinicians are inundated with information every day in order to try to keep up with their own specialty, I created a free program for clinicians.

To be able to you have to be licensed clinician. Anybody with a state license can sign up, but it's a full free certificate. Course advice, mentoring, the whole thing because frankly, I am tired of the fact that and I'm frustrated the fact that patients come to me and their clinicians are still telling them, oh yeah, no, no, no, don't go, don't use cannabis when it is clearly indicated.

And the evidence in clinical trial shows it would help with pain, it will help with dementia symptoms. It helps with

autism, it helps with epilepsy. And when you think about all these conditions, what do they have in common?

A lot of it is neurologic. And we've not found a lot of benefits for neurologic conditions. And there's no question that cannabis can help you to feel well, like, I really appreciate you sharing that and bringing this topic to our attention.

I think that wherever you are in the world, whatever the legality of it in your state or in in the country that you live in, ultimately, you know, most of us, trying to do whatever we can to help those around us reduce suffering, reduce pain, reduce their inflammation, and live free of these kind of scourges.

And so I really appreciate you sharing it and all the resources that you created, your book, your course. And we'll, we'll make sure to have all of those available to you.

You know, it's interesting we did a functional forum in 2017. I think it's the number one watch, one of all time that we did on medical cannabis. And that was, you know, something that we put out.

And and you're right, it really continues to move very slowly given how potentially valuable it could be. And, you know, the levels of, you know, the, it's very difficult to remove the stigma.

And, you know, it seems like doctors should be at the, at the front lines of this because they have access to, the data that's coming out. So thank you for all your hard work.

And I know that this will be valuable to everyone who's listening to it. And yeah, if you found this interesting, if you have friends and family that you think would be needs to hear this, please share this with them.

This recording might give them an opportunity to join us here today on the, Reversing Alzheimer's Summit. Over the week, we are talking to experts across all areas of of cognitive function, laying out our true neuro methodology for supporting and reversing cognitive decline.

And I think this is a tool that should be in the toolbox of clinicians around the country who, you know, working on this topic. So thank you so much for tuning in. I've been here.

We talked to Bonni Goldstein. This is being the reversing Alzheimer's summit. I'm your host, James Maskell. Tune in for more awesome sessions today, tomorrow, and the rest of the week.

Thanks so much for tuning in. Goodbye.