A New Lever for Brain Health: Reversing Alzheimers 2.0 Transcript

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Introduction to cannabis medicine and brain health

Almost every single study reports safe and well-tolerated. And again, this is medical use, safe, and, well tolerated, it can't be patented. Pharmaceutical companies are a bit not happy with people going off pharmaceuticals onto cannabis medicine.

There's other social biases. People don't want to be seen as stoners. there was a survey that looked at elderly people using cannabis and they didn't wanna tell their doctor because they don' want their doctors to think that they were a stoner.

Hello and welcome. I'm your host, James Maskell. 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 was super grateful to have here for a special interview, Dr. Bonnie Goldstein. She is a physician in California and also a leader in space of 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 we actually ended 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 hear talked about a lot.

I think I've seen videos online of people with Parkinson's tremors having significant changes, like visible changes very, very quickly with cannabis. But why don't you just start at the beginning?

Why is this particular area of neurodevelopmental, neurodegenerative disease 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 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 used. We have a system called the endocannabinoid system. It was only really discovered in the late 1980s, early 1990s.

So we're still in infancy of understanding it. But this is a system, it's a regulatory homeostatic system that 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.

How the endocannabinoid system protects 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 brain 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, I see a lot of patients that come in whose neurologists have recommended various medications and they're just not doing well on them.

We have to remember that 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 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 activate 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 endocannabinoid system is super fascinating because obviously it's relatively new science and understanding. Could you get 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 endo-cannibinoids, our inner cannabis-like compounds.

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

Let me just give 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 a seratonin receptor, we know what happens. Dopamine binds a dopamine receptor. We know it happens well when cannabinoids bind to these cannibinoid 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 those overexcited messages back into balance. Now, what happens is as we age, our endo-cannibinoids system degrades, just like everything else that we have, that were fighting against, right, as age.

So, it can be this, endocrinoide 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. I think 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.

We'll here about all the different things like subsets of root cause that drive neuro-inflammations. it sounds like there's some ability within these plants to affect your inflammation.

Is that right? That's correct. And so what's really interesting, so everybody always focuses on THC. Remember, TH C is just one compound that the cannabis plant makes, and it can be used medicinally.

I use it all the time, medicially in my patients. 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, it doesn't matter, but I treat children with THC who are able to go back to school.

THC, CBD, and other cannabinoids for neuroinflammation

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 research that it has neuroprotective, it an antioxidant, and an anti-inflammatory. We also know that CBG, Cannabigerol, which people are not as familiar with, was initially considered a minor cannabinoid.

I call it a major cannibinoids now, but CBG 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.

Again, I practice in California where we've had medical cannabis for almost three decades now. I treated thousands and thousands of patients and I'm a very kind-of neurotic physician, so I am 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 am just saying that many of my patients who use cannibinoid 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, a 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, CBDA, and a 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.

That's really not the way scientists should think. Yeah, I'd love to get into that stigma in a minute, but I just, you mentioned the carbenoids and you mention 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 effects on the brain and do they 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. We talk whole plant cannabis.

Sometimes we refer to it as full spectrum, meaning everything from the plant. And then we talked 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 study's cancer and in pediatric epilepsy that show that the Full Spectrum, everything Mother Nature packages in the plant, Those types of products seem to be more beneficial than isolates.

I'm not saying there isn't a role for isolites, I am just saying that they seem outperform clinically when you have that full spectrum. And part of that spectrum are terpenes.

Terpene is just the fancy word for essential oils. And these include compounds like bircene and beta-cariophylline and other compounds. Beta-cariophyllanine is a very interesting compound.

It's a potent anti-inflammatory. What's interesting about beta cariophiline, which is one of the main terpenes found in cannabis plants, is that in addition to being a terpene, it also acts like a cannabinoid.

Binds to the type 2 cannabbinoids receptor. The type-2 cannaboid receptor is one of our main inflammatory regulators. So we want that action at the type 2 cannabinoid receptor.

And by the way, THC binds to both type 1, which is why you can get altered with it, but it also binds Beta-karyophylline as a terpene seems to have a proclivity for that CB receptor.

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

Terpenes, flavonoids, and full-spectrum cannabis

These are anti-aging compounds. They are antioxidant compounds, so the plants itself seems have all of these very prominent anti-inflammatory, antioxidant, antiaging, neuroprotectant compounds.

And again, to me, we all talk about eating more plants, right? And plant-based diet as being proven to be less inflammatory and very healthful. Cannabis should not be singled out as the plant that we shouldn't use.

It should be studied and it should used to its benefits. Yeah. Well, let's talk 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 both medically and recreationally.

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

I've spent time in South Africa and you pretty much easier access there and then in England, almost the opposite. So, you know, for, people who are listening to this, who, can now have the benefit of listening, to a doctor that, 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, 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 biggest advantage with the least downsides and if you had full access to all kinds of variants, how would you recommend that people start to interact with this?

Just wanted to take a moment to thank our mission partners for helping bring this podcast to you. As you know, we are in the business of building a network of clinics that can reverse cognitive decline and our partners in that are organizations.

You can find out more if you go to goevomed.com and look at the mission partners. But first and foremost, Truenura. If you got to truenura.com, you can get a demo.

This is the underlying software that will connect this network of clinics and we have an incredible mastermind session, a lot of cool stuff coming out of that company.

And you could see here, Fullscript, thanks to FullScript with Full script where we're going to help you take advantage of the tools that they have. to compete with things like ChatGBT and Function Health.

It's going to be awesome. Go to goevomed.com slash full script. Big Boost Marketing. If you need patients for your clinic or if you have any marketing needs, go evomed dot com slash big boost is our premier supporter in that

world.

And then please also check out Freedom Practice Coaching. Built and scaled a very successful brain health practice and has been instrumental in helping practitioners with the non-clinical aspects of running a practice doing this.

These are our mission partners, these are people that I know well, These people are top of their sphere and really excited to bring you the rest of the podcast.

Enjoy. That's a great question and it's 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 YouTube… 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 non-medical use of THC. That is a component of it, but I live in the medical side, and on the 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 are RNs, and there is a lot of people out there who are licensed healthcare practitioners who can help you sort out your specific situation.

And one of the things that's very important, James, is that although there aren't many serious cannabinoid drug interactions. We know that a 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. 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.

Practical guidance on dosing, forms, and administration

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 a side effect. 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 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, unless you are on really high doses, you do not have to wean off of it like you have do with a lot of medications, right?

You don't. You can cold turkey it and nothing bad will happen. You pivot, you can switch products, 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 difference. 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 dosage 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 the different forms because I know, you know obviously in the video that I remember watching about Parkinson's, it was sort of like a liquid tincture, but I there's like gummies and then there is 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 dementia, Alzheimer's brain health structure.

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, it could a beverage that they have out now.

It could an edible, a candy bar, really anything like that that would swallow. Tinctures are liquids. We call them oils, tincture, extracts, kind of all interchangeable.

And those, for most people, they will put them under their tongue and hold them sublingually. 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 we're not sure are the dose.

So you could start low, you can titrate up, and you find dosing in between. When something comes, let's say, as a 25-milligram capsule, that's the dosage you're stuck with and the multiples of 25, whereas tinctures allow you to really dial in.

You could literally get 10.5 milligrams, 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 gummys, you can cut them evenly, so they tend to do okay with those. And because they're sweet, some people who haven't had, the tintures don't taste that great.

Some people, who don' like those, are able to take the edables. But we have to remember something very important. The way you take it changes what we call the pharmacokinetics, kind of how much you get, how you're absorbing and how your metabolizing it, and soon it is to quicken.

So, for instance, inhalation, you are feeling it within five minutes. If you were nauseous, having a migraine, have rage type behavior, or severe tremors, then you might want to take inhalations.

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'd just love to like finish up by just talking a little bit about the stigma because ultimately, you know, for medicine that seems to have so many beneficial effects in this area, there's obviously, a lot of it's not available widely because of the stigma and it has taken a long time to get to its availability that we have today.

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

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

It just isn't. who's also a professor at Harvard University who has 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.

Stigma, safety, and the future of medical cannabis

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 six hundred 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 10 and she ended up 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 supervise. It's likely that the patient is getting good advice and can manage.

Now, the other part of it is cannabis 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 has been pointed out as a couple of fatalities and we all talk about there's no fatal overdoses, there isn't.

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, since it can't be patented, pharmaceutical companies are a bit not happy with people going off pharmaceuticals onto cannabis medicine.

There's other social biases. People don't want to be seen as stoners. elderly people using cannabis, and they didn't want to tell their doctor because they don't their to think that they were a stoner.

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

themselves ongoing?

It seems like once you've had a bit of familiarity and experience, it's not so critical to always have it be medically oversight in a way that you probably would with SSRIs or something like that.

That's exactly right. I have patients who have been with me for many years. They want to continue being under a medical umbrella. But I had many who leave after a few years under my care who continue to use it, who stay in touch, to let me know that things are going well.

And I've always told them if something occurs, you develop something new and you want talk about what the research shows about cannabis, feel free to reach out to me.

You know, I joke around, much ado about nothing. Cannabis is when used appropriately, when you use 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 a practitioner.

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

How does healthy aging happen and what role does cannabis play? And at what point in the patient journey is a patient integrated and given cannabis or introduced to it and educated about it?

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

So of course, if you're eating garbage and you are 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 other conversation, is how the endocannabinoid system influences the microbiome and how 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, their exercising, trying 90% of the diet is clean and meant for health full 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 mouse models of Alzheimer's, animals who started taking cannabinoids before the insult that led them to the Alzheimer 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 that, 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 let's say, augment and enhance that endocannabinoid system, I definitely see cannabanoids as part of that anti-aging process.

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 I created a free program for clinicians to be able to, you have to license, 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, that patients come to me and their clinicians are still telling them, oh yeah, no, don't use cannabis, when it is clearly indicated.

And the evidence in clinical trials shows that it would help with pain, it will help dementia symptoms, helps with autism, and helps epilepsy. And when you think about all these conditions, what do they have in common?

A lot of it is neurologic. We've not found a lot benefits for neurology conditions and there's no question that cannabis can help. Well, look, 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 country that you live in, ultimately, you know, most of us are trying to do whatever we can to help those around us reduce suffering, reduce pain, reduced your 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, course, and we'll make sure to have all of those available to you.

It's interesting, we did a functional forum in 2017. I think it's the number one watch one of all time that we get on medical cannabis. That was something that was put out and you're right, it really continues to move very slowly given how potentially valuable it could be.

the levels of, it's very difficult to remove the stigma and it seems like doctors should be 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 hope 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 you think would be needs to hear this, please share this with them, this recording.

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 cognitive function and 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 are, you know, working on this topic.

So thanks so much for tuning in. I've been here with Dr. Bonnie Goldstein. Goodbye. So that was the podcast. What an epic session and just a reminder that coming up in April we will have version two of our Reversing Alzheimer's Summit and we're going to have updates on some of the new studies from Dr.

Bredesen and be charting a path forward for the reversal of Alzheimer and cognitive decline. Thank you so much for tuning in to the Evolution of Medicine podcast, we'll be back again next week and thanks so