Galectin-3 And Prostate Cancer: How Modified Citrus Pectin May Help Control Disease Transcript

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Introduction and Speaker Background

Welcome to the prostate cancer Summit. I'm your host, doctor Geo Espinosa. And it is with great pleasure that I introduce you a friendly colleague. I mean, yeah, everyone is a colleague on on this summit, but this is this is a special colleague because he's also a natural fabric doctor, well known in oncology.

This is Doctor Dan Rubin, whose practice in natural oncology has been integral part of the Phoenix metropolitan medical community for over 20 years. He went to southwest SAS as, oh, excuse me, southwest College.

It was not even southwest anymore. Is a southwest college of the City of Natural Medicine. And in 1997. Wow. And coming up on year. He returned, to complete his residency, there in 2004, he became the founding president of the Oncology Association of Naturopathy Physicians.

Or am, the encamp represented a revolution for the field of natural public oncology, providing for the first time a definition validation, and standardization of the field of natural public oncology.

Since then, Dan has become an internationally recognized naturopathic oncologist. Lastly, Doctor Reuben is co-founder, along his wife, Debbie Smolinski and medical director of Natural Path Specialist in Scottsdale, Arizona, where he practices a full where he practices and have a full time naturopathic oncology practice there.

As a natural protocol oncologist. At present natural ethics specialist observe the clinical and logistical oncology needs of people from all over 50 states and over 19 countries.

Doctor Dan Reuben, thank you. Thank you for being on. What's Happenin. Man, I have to say that, I'm super stoked to have you on this summit. You have been a a leader.

I mean, your bio says it, but I'll say it too. And I think I alluded to a leader in naturopathy oncology before it was ever a thing. And here you are.

You know, more than 20 years later, working in the field and being one of the luminaries in this field, like one of the mean go to people. You I can't tell you how many times I have a prostate cancer patient come to my office and their spouse says, yeah, no, I have breast cancer.

And I see Doctor Rubin in Arizona. I was like, oh my God, it happens all the time. Just happened this week. So I'm super happy to have you on this summit.

Thank you. I'm stoked to be here. It's fun to talk to you. It's great to see you. And I love following your work in that hand. It looks so at the chat.

Thank you man.

What Modified Citrus Pectin Is

So listen, we could talk about a lot of things, but, we'll talk about one, key, nutrient. And you know, I get asked all the time about, modified citrus pectin, modified citrus pectin.

So kind of doesn't make sense. Or is, you know, the way the layperson will look at it. So this is the pectin in citrus. So the peel and so the white stuff in there, should I support am I supposed to eat these things and if so, isn't that like a fiber.

That doesn't that doesn't get absorbed. So would you tell us that maybe that's the modified version. So would you tell us what modified citrus? Citrus pectin is?

Yeah. And you're right. It's from the pith of the citrus fruit. That white part. But if we eat it, it's fiber, right. We can make foods with it, but our body cannot break it down into the small pieces that is required to be considered modified citrus pectin or to be medically active.

And so that's done, by science. And so taking the pith of those fruits and modifying it into like a 13 kill adult. So it's really small. In fact, the better products are the smaller in size.

And those are the ones that, you know, we're studying, you know, very particular products. Some studies I'd like to chat about too, today. Because it's an interesting substance, but, you know, put it in water or you take it in a capsule, you take it in a chewable, you take it into your body, it gets absorbed into the blood, and it has signifi cant biological effect for men with prostate cancer.

And I mean, I don't know what you see. I'm guessing you do. You see a lot more patients with prostate cancer than I do. I see a fair share. And there is some overlap and commonalities with cardiac disease.

And so there's some diseases of lifestyle. And galectin three is not only a marker in people with prostate cancer, but also with cardiovascular disease too.

So there's some overlap. And I think there's some Co benefit when people are taking it not just for prostate cancer but also for other, you know, other parts of their health.

I mean people have inflammation right. Yeah. And so that's what it is. Now you open up a can of worms because you mentioned a term that you think you think, most people know about.

And the truth is most don't. Galectin three. What are you referring to? Collected three. Yes. Thank you. So galectin three is a normal part of our physiology.

Just like hormones are a normal part of our physiology. Or, hemoglobin. There's something called galectin three. And when there's certain levels, we would call them custodial levels.

When those are under control. Galectin three is like a superhero. It really helps regulate physiological processes for the body. It helps with the immune function.

It helps regulate inflammation. It helps general it help it kind of just kind of roams around and makes sure things are going well inside and outside the cell.

When the levels of galectin three are dysregulated, the superhero can become a villain. And when those levels are high in the body, it really can wreak havoc on the body. That becomes a problem.

So when when there's a too much of a good thing is not a good thing, kind of. Too much is not a good thing. Yeah I agree, well said. So is that so? So when.

So there's dysregulation of galectin three too much made too much created by the body for reasons that we're not sure what it what why it does what it why does that what what are your thoughts on that.

Why does the body you know, sometimes even your immune system rides overactive and can cause things like autoimmune. What's happening with galectin three?

Why does it become dysregulated? Well, it's a great call. It can happen when people have cancer. And we know there's something, as you know, called epigenetics.

And I'm thinking a lot of your listeners right now have are familiar with that word. If they're out there searching in the

internet or consumers of healthcare or health information that genetics like we know or what we're born with, right?

Galectin-3 and Why It Matters

And then that's our genotype, how those genes are expressed, the color of my eyes, my size of my nose, how I, you know, work in everyday life. That's my phenotype, how I'm physically expressed or what I do at the genetics is basically, I think, how the environment is going to influence our genetics and therefore their expression and so influences can affect our galectin three level.

So maybe it's blue light at night. I'm not saying that this is data. I'm just saying how do we get inflamed. Maybe it's too much too much stress at work or at home or on the road, depending on your commute.

Maybe it's not enough sleep, maybe it's not enough food. Maybe it's toxins in your environment. Maybe it's you know, something else. Or maybe it's too much exercise for some people and not enough rest and not taking it off thing.

Maybe it's, you know, drinking too much reverse osmosis water or not having the minerality to, you know, calm things down. Regardless, there are things that can influence our genetics called epigenetic modification.

And therefore one of those things that could become modified is our expression of galectin three. So expression of galectin three can be from disease states.

So you already have a diagnosis. And that influences how our galectin three is involved in our physiology. Or something can happen influenced the galectin three levels.

And that could also drive some chronic disease states. Does that make sense? It makes a lot of sense for sure. So then how does MCP work with regards to galectin three?

Well very easy. So modified citrus pectin or MCP is really the only known, regulator right now, I think, on the market and it's on the nutritional market that can help neutralize galectin three doesn't stop it from being expressed, but it neutralizes it's it's negative activity.

It can neutralize it, sort of soak it up. Galectin three can can be nasty. It's an interesting construct. The way the actual molecule looks, there's two parts to it.

And what happens is more than one galectin three molecule can join together and form like a chain. And it forms literally. Well, first what happens is five galectin three molecules, that of one you get five.

And so you have these sort of like merge in my hand is the base of all of them. And then my fingers are the galectin threes out there. And these can be very prickly.

Well they can join with other galectin three dimers and they can form a lattice network. And that lattice network can be on the outside of cells or B floating around in the blood.

And they're very sticky. And when things are sticky in the blood, it causes change in the way the blood flows. And we know when changes in the blood flow happen.

Now we can't carry oxygen as well. Our blood gets thick, you can form blood clots. You can you you basically get inflamed. I think for all intents and purposes, that's the easiest way to think about it.

We need our blood to flow for all you out there in what's called the laminar pattern, laminar flow means there's one layer of blood, there's another layer of blood, there's another layer, and it's all moving forward, flowing.

But when this gets turbulent, the blood flow and choppy, that's when problems can ensue. And sometimes it's insidious and takes a long time for something to really be recognized clinically.

But it happens. And galectin three can have that happen. When it's inside the cell, it can really disrupt cellular patterns. And we'll get into that a little bit more.

But it's the other thing that it can do is it can really create a biofilm. And so collecting three as these tumors hook together and create these sort of lattice networks in the tissue spaces, bad things, bad biochemicals, bad entities in the, in the body, can form and stick on those because galectin three is really sticky and they can build up and you can literally generate a biofilm that could, you know, that leads to disease states as well.

And those are tough to get rid of. So, you know, I found we do galectin three testing and that's a. Is that a routine blood test? Yeah, it's a it's a it's a blood test.

And I don't want to say it's an average blood test, but it really is. It's easy to order. It's not expensive. And any doctor can order, any, any doctor who's licensed in their state to order a blood test in order to collect in three.

It's not weird. It's not from a weird lab. It's a it's a commercially available test from the general commercial labs. Or the only hard part about it is actually getting it ordered.

Right? Because nobody's really thinking about galectin three until now. And to do about it is to what their clinician is thinking. Okay, so it's high. Okay. What do I do about it?

Because most people don't know about MCP or any other way of bringing it down. Right. So and that's what actually what is the clinical value for someone who is unaware of MCP?

For it. What do you do about it once you let's say the galectin three levels are high in a patient. Yeah. And that's a really good question too, because like on the commercial lab that we use, normal is anything under 22.

How MCP Works in Prostate Cancer

2, but I seek to keep my patients levels at 13 or below. It's very similar to insulin levels. Our normal values are up to 24.9. That's not optimal for me. We try and keep it under 13. Yeah.

And so you know we're naturopathic doctors and we're talking about, you know, functional physiology here. And so I seek to keep it low. And then there's some people that we have a really hard time getting their galectin three levels down.

And that may be because somebody has disease burden still. And we need to say to reduce and get that disease burden gone. I galectin three is under genomic control.

And so there are some people not unlike other testing that we have done in the last, you know, 25 years. But we've been measuring galectin three for decades.

And the idea is some people just are our higher producers of galectin three. And if now that there's more becoming known and so many studies about collective three, I mean, you look up galectin three in PubMed, there's hundreds of references.

It's really becoming a thing. Doctors who have been or are very forward thinking, those who are starting to use modified, introspective or forward thinking, and consumers who are not physicians or health advocates who are using it, who have used it or really interested.

It is a forward thinking thing. And if you look at what galectin three, how we can wreak havoc on the body and how it can become a villain, sort of taking a just, a basic almost like a daily dose of a galectin three inhibitor like modified citrus pectin may not be or may be a good idea for a lot of people out there.

I remember I just had a Alaves woman with breast cancer and, we saw we we put her on it prospectively. This is prior to me measuring her, galectin three levels in her blood, but just based on her case scenario, I thought she'd

be a really good candidate for it.

This was obviously based on her cancer diagnosis, and we can talk about what collecting three does. And, you know, in terms of malignancy. But after I talked to her the next time when we were doing a report of findings on her lab, she's like, oh, yeah, my osteoarthritis symptoms are like 90% under control.

When they weren't before. And I was like, that's fantastic. And that was from a two time a day dose of an average dose of five grams of modified citrus.

Then. So it does things and people's inflammations. Inflammations show up differently in people and really depends on their circumstances, how they run their life, the exercise they do, their sleep, their patterns, and it can show up differently.

I mean, it doesn't necessarily have to show up as an achy joint. It can show up as being unsatisfied with your life or unhappy. You know, those are inflammatory.

You know, sometimes inflammation in the neurochemicals and how those interact with the inflammatory molecules could show up that way. You know, it could be it could be pain in a muscle.

It doesn't have to be pain in a joint per se, because, you. Know, it sounds like everyone, everyone has at least 1 or 2 of those issues where it's dissatisfaction with their life or, or quality of, lifestyle and so forth that maybe, maybe I actually, I need, I think I need to start checking galectin threes in my, in my clinic for sure.

How does it work in prostate cancer? So when you talk about stickiness and things like that, I'm thinking metastasis. Does it create a breeding ground for for for cancer cells to move around and so forth.

So you got you were thinking correctly. Absolutely. So I call it the rids effect okay. Our ideas it's and I like to think of it like that using sort of an anagram because we want to rid the body of these things and I think modified citrus pectin by neutralizing the galectin three effect can help rid the body.

So one galectin three can can really help or it really regulates things cellular. So when it comes to cancer, there's a lot of dysregulation that it causes, whether it be in proliferation or the survival immune evasion these types of things. There's a lot of cell cycle regulation.

And so the when it when galectin three wreaks havoc on the body in terms of regulation of cancer cells, if it induces the cell to enter the cell cycle, that means the cell is going to proliferate more, which is a hallmark of cancer.

As we know. The I when the first die stands for immunosuppression. So when it's when galectin three is well-regulated, we can get some benefit to the immune system.

When it's dysregulated, we do get a significant immunosuppression. It's really at the level of the T cells. A lot of this galectin three to more cross-linking when it forms that lattice network can actually tie up the T cell receptor.

So you start thinking about those patients that are on the immune checkpoint inhibitors. Those those drugs are trying to unencumbered the T cells. If there's galectin three and these immune checkpoint inhibitors aren't really doing anything about galectin three, you might want to you know, some doctors might want to think about using galectin or anti collect in three strategies like modified citrus pectin along with that.

So you can get, you know, undo that suppression and really open up and help make that helped make that work. I know that I do. The other eye is inflammation.

And I put that in the middle there in the ribs framework because for me, I remember in 2001 being invited to go speak in Canada about prostate cancer, and they gave this whole lecture just on inflammation and prostate cancer.

And I know you know better than I do in terms of how the central components of inflammation and prostate cancer,

I mean, you just you can't separate the two.

I mean, you can't separate inflammation from chronic disease, really. But inflammation, it's a big, big player. We've talked about a little bit before here on this interview.

Inflammation is right in the middle. The D in the ridge framework is it drives metastasis. Exactly what you just said. You are right. And it can lock on and it can kind of shuttle those cells along to improve the metastatic spread, which we don't want to do.

And then the s in that ridge framework really stands for Stem. This one of my favorite terms. It's a big buzzword now. It's growing in popularity. We're talking about cancer stem cells.

There's a lot of talk and social media out on the internet. In the chat rooms about the stem cell theory of cancer, the survivability of the stem cell fractions, what's called EMT or epithelial mesenchymal transition.

When you get these cancer cells that, start to migrate out of the primary tumor space and enter the blood or the Fedex system, and they have to down regulate their, you know, sort of terminal differentiation, phenotypic aspects.

And they become more cells, which are akin to stem cells. And they, they spread and they spread in the stem cell like fashion. And, you know, our immune system isn't really going to bug stem cells.

So it's sort of a cloaking device. So galectin three helps induce the stem ness effect. So you can use modified citrus pectin to really reduce that stem this effect.

And that's really the ridge framework. So there's some fascinating data out there.

Fibrosis, Metastasis, and the RIDS Framework

I'm encouraging people that if you're hitting PubMed or you're running into an article that you think is important to know is important, but you can't really understand, print it out or send it to your doctor.

Bring it into your next consult and discuss it, because there's there's a lot of good data coming out. But another thing that we need to talk about too is fibrosis.

Galectin three is a fibrosis agent and fibrosis is a big deal. Fibrosis is when things hard enough. Let's face it, we fibrosis, we age. It's part of the aging process.

We get, you know, I. Don't know, it's true. I mean, you saw there's things you can't see, but there's things you can feel. It's like, man, I'm a little stiffer. My joints.

Oh, you know, it is brutal. Now, not to completely digress. I mean, there are always things to do about it and kind of slow the aging process. I said, look, if you have a body, you're an athlete.

So kind of train like one. And is that I love weight resistance training. You know that from the Instagram post. But oh yeah, what you don't see is the stretching that I do.

I'm stretching all the time because things are just stiffening up more than usual. So go ahead. No, I see, I see what you do, I follow you. I'm completely impressed and I understand it's it's that part that you don't see.

It's the physical therapy component. It's foam rolling or stretching, all that devices and heating and cooling things that we have and and part and parcel that's driven by collecting three.

And so recovery from athletics and promotion of improvement, can be helped, by blocking galectin three in a clinical sense. So fibrosis is a big deal in terms of oncology.

The picture that I have in the context of my framework and how I think is there's a sort of there's two important things. There's there's fibrotic insulation of cancer cells and there's something called and then there's something called mechanical transduction, kind of advanced considerations for the general public.

But when you think about, tumor tumor cells forming a tumor, so multiple cancer cells forming a tumor and they work in concert. Well with galectin three at the helm, wreaking havoc in that area, you know, improving or reducing cell cycle regulation, reducing the immune system effect, increasing inflammation, driving metastasis, improving, the stem or improving, increasing stem activity.

These cancer cells really like to embed themselves or insulate themselves in fibrosis, sort of like this moat of this fibrotic ball of tissue buildup.

So fibrosis is fibrotic tissue, but it's like scar tissue build up for intents and purposes. Right. And they can insulate themselves. And so what happens?

Immune system can't get in small molecules maybe can get in. But a lot of the nutrients we give might not be able to get in. And if we can't get the immune system there, if we can't get certain medicaments there, then you've got a nicely insulated, embedded tumor that's allowed to exist and grow.

That's the insulation effect. The mechanical transduction effect is there are methods by which cancer cells survive and grow. The example that I usually give to my patients is, let's say that you're at your house and you decide you want to make a sandwich, but you don't have any bread, you still won't make the sandwich.

So you got to go to the store and you get to go get bread. So what does that enable you to leave your house? You get to get in your car. You got to drive there. You got to get in the store.

You got to get the bread, pay for and then reverse. So that's a stepwise fashion. Metabolism is like that too. It just doesn't happen. So just don't proliferate or survive.

They have various steps that they go through. That's called signal transduction. Signal transduction involves the secretion of biological mediators stuff in the body.

But you can also achieve those those similar steps using compressive forces. So as tumors get embedded in this insulated sort of fibrotic bed, the the forces of the body are also pushing in.

Tumor cells are pushing out. And at the same time you have a, you know, equal reaction pushing in. Well, that pushing in accordion style can induce that transduction.

And you can get instead of signal transduction, get something called Meccano transduction, which is not something that's talked about. That's another reason to really look at galectin three levels in the body and try to reduce those with MCP and or your other techniques clinically that you're using for your patients or that people are doing on their own.

How do you use it? How do you use, modify introspecting. So I do remember you. So I do know that a powder, this pills, a lot of pills to get five grams per dose. Right.

So do you typically use the powder and mix it with a drink. How do you use it? I, I almost exclusively use the powder for a couple reasons. As you would know as a clinician.

One, it relieves somebody of a lot of the pills. Obviously if they're traveling, they might want to, you know, take some pills or if they're going to take, you know, multiple doses per day, maybe they stick a few pills in their pocket.

The powder tastes good. I think, of the, you know, the stuff that we use in our clinic tastes good. A lot of people just want to keep taking it. So they either feel that it's doing they subjectively know the benefit, or they like the taste, or it's just it's a pleasant taste.

It's something that you do in the morning. And oftentimes, again, 10 to 12 hours later, because it's got a reasonable half life in the body. That's it.

You know, the secret to making the drink not gritty is to either use room temperature or preferably a little bit of warm water. And then you put the powder in there, you stir it up.

I can then. Use it with tea, or you can. Use it with tea. And it doesn't necessarily have to be hot, you know, warm water's fine room temperature works really well.

But the secret to room temperature, I tell patients, is mix it in and then go away for 10 to 15 minutes. Come back and it'll be nicely absorbed, maybe stirred up a little.

And you have a it's a drink that's nice and it's a little thicker than water and it goes down. Really. No, it feels a little bit creamy and, taste is wonderful.

So we use. Any GI distress.

MCP Dosing, Evidence, and Clinical Use

I do, I do remember some people getting some GI distress from five grams. But if you lower the dose. But we don't know if that's the effective dose or not.

So I guess the question is a side effects adverse events from it. And do you think two grams would work. How do we know that five grams are nothing. Yep.

So thank you. Great question. And that's great for your audience. Yes you do. I'd say clinically what I see is about 8% of patients do have some GI distress, which you can then reduce, or have people take it with food which can lower that, but they might not absorb the full dose.

Or you can lower the dose. And basically you're watching two things. You're watching if you're running galectin three levels, you're watching how you're modifying those, and then you're also watching disease states.

And however you're following disease. Galectin three can be used as a biomarker in people with prostate cancer. And it's sort of the tide is rising on that.

Even even alongside PSA, sometimes we can see galectin three levels rising before we see a return of PSA. And so that's showing biological processes before you actually see the product.

If you have somebody with the PSA positive prostate cancer. But you're right, you can modify the dose. And in clinic, sometimes getting the clinically tolerated dose is better than taking none at all.

Awesome final words on MCP and prostate cancer then. I mean, this was this was great. I don't know if you have any thoughts. Any other thoughts in mind.

Let's just say for example. Well, let me ask you a question before we park. You know, there's Gleason six prostate cancer, which some are saying, well, that's not even cancer.

So it was so low risk. You never die from it. This intermediate risk is high risk. People aren't ADT. And then there's metastasis. You know I don't want to give five grams of of this you know twice a day for the person that has a Gleason six.

So any idea of dosing during the different stages. Maybe because I do remember for example, and I do know that five grams three times a day is also a good thing to do therapeutically.

Well, I want to save that for the guys with advanced disease as opposed to the guy on, with low grade disease. So

how how can people make more sense of best utilization of MCP?

It's a great question. I think this would be a good time to really talk about the data, because it was a pretty landmark study that was done where patients with biochemical relapse were actually looking at six months or 12 months.

Sorry, it was six months of use of of, modified citrus pectin. And they were showing such promising results that they offered all 46 of those participants.

Another 18 months continued. Continued trial. And so, I'm sorry, it was another 12 months. So the total between both trials would have been 18 months.

And in that second trial, there was some phenomenal. I think it's groundbreaking data. You're talking about people, men with prostate cancer, whether it be a six, seven, 8 or 9 and the Gleason score.

And these are all men who were pretreated, whether it be with ADT, surgery, radiation or a combination of radiation and ADT. And every one of these patients showed what's called biochemical recurrence.

That's when the as you know, that's when the PSA comes back. And it's showing evidence that there might be disease recurring in these patients. 39 of them, in that 12 month trial, that second arm were actually given five grams three times a day, exactly what you just quoted.

And there was an 85% overall response rate. That's a huge number. What does response mean? Rate mean. That either means the PSA stabilized. It didn't go up, the PSA decreased, or the patient scans that they sorry, they had a an increase in their PSA doubling time.

So that lengthened. And they all had negative scans all of those 85%. So 90% of the patients across the board, whether it's aggressive disease or not, aggressive disease, 90% lengthen their PSA doubling time.

When we're talking about Gleason six all the way through Gleason, nine and 90% of them also had radiological negative scans at the end of that 12 months.

So it's it's amazing. And also, I think importantly, is that 36% of these people, actually in 100% of the people in the poor prognostic risk group, these are the people with the, you know, Gleason 8 or 9, these people had an increase of their PSA doubling time.

So it took longer for their PSA to rise. So in terms of figuring out what the dosing strategy is for your patient, it sort of depends clinically where you are.

So like you said, if you have a patient newly diagnosed at a Gleason six, you measure the galectin three level and it's above 13th May want to put this person on twice a day.

They might have other comorbidities or other risk factors or other reasons for the galectin three to be up. So using galectin three as the biomarker to help drive your decision making would be a good thing.

And I'm going to encourage people who are not patients of doctor G or not patients in mine to, but who are patient of another doctor to go ask for your galectin three levels to be measured.

But I agree. Clinically speaking, five grams once a day might be very is very reasonable for something who is under the care, who is otherwise healthy and you're just trying to stop that ridge effect, in prostate cancer and then agreed.

You might I mean, I have some people on more than ten or more than 15g a day. These are the people with tougher disease, more advanced disease, and stubborn galectin three levels.

And so we have people up to 30g a day, and that's under a physician's care. Sure. Doctor Dan Ruben, final words.

And where can people find you and or your clinic?

Oh. Thank you. Our clinic is in Scottsdale, Arizona, and we have a URL, and it's very easy to remember because it's listen and care.com because we listen and care really the physician needs to listen and the whole clinic needs to care.

It's a great model. Listening Caricom or phone numbers (480) 990-1111. And my final words are that, it's really been great all these years to be your colleague.

Closing Remarks and Contact Information

And to be able to be proud of a colleague in this, this big but small community that we have. And to watch how you've really focused your time and specialized in this field and what you've brought to the profession.

And I think everybody who's on this, or the guests and all the people that are benefiting from listening to they're just really fortunate. So thank you for having me on.

Well, I did not expect that. So I really appreciate those words. Thank you. Thank you, Dan, for for saying that. And vice versa. We could have a serious bromance here going on.

I, I really, so thank you, everyone, for watching this episode of the Prostate Cancer Summit with with Doctor Dan Rubin. He talks about modified disrespect.

And this is, one day you ask about all the time. So we got an expert to talk about it. So thank you. And thank you for, eco eugenics for also sponsoring this summit.

I'll see you next time. Next episode. I mean, just keep it. It's keep it flowing. We have the best of the best on the field. So thank you for tuning in.

Spread the word with your colleagues, with your friends, support groups, spread the word. It's only getting better. This is Doctor Geo Espinosa signing off.

Talk to you next time. So long.