Introduction and Guest Background

Hello, this doctor, Kevin Holter, for another episode of the Peptide Summit. Today we are honored to have Doctor Joseph Cleaver, who is going to be talking about senility, the cornerstone of longevity.

Thank you, Joe, for being on. Appreciate that on your one of the busiest, doctors I know. And they're all over the country where we have you. Now. You're in North Carolina.

Thank you, sir. And you practice Dallas in your winery in Sonoma, where, you know, we, went to a conference mastermind who was great, but a little about Joe.

We're it it's it's such an honor to have him. He's a fellow of the American Board of Anti-Aging Regenerative Medicine. In addition. He's board certification. Internal medicine.

He's board certified. An anti aging general medicine has achieved certification, by the Abbott. Our, she has a lot of initials after his name. An advanced metabolic endocrinology specializing in bioidentical hormone therapy.

He say he sees patients at, Paradigm wellness medical group. He's in Dallas. Sonoma, but also looks like North Carolina. And I had the honor to be invited to one of his masterminds at his winery, Lou Conda.

Great wines, by the way. I know there's only spots for the wine club, but, we're similar. You know, he done successful wine. I started a beer company.

After medical school, we had a hangover free beer. Double blind, placebo controlled studies. But as soon as you brought it out, the Bureau of Tobacco and Firearms said you can't make a healthy beer.

So we got shut down. But, then we came with an energy beer before anyone had it. And but our business plan was not very good. It costs us $7 to make it at a time.

You couldn't sell a six pack for more than five. So we tried to make it up in volume. I'm a doctor. I don't know these finances, and it didn't work. And we kept losing money, but, it was a great, a fun experience.

But, he's the real deal. Patients come from all over the world, to see him. He is so generous with his knowledge. He trains doctors, from everywhere. He does a lot of, esthetics with with threads and a plasma pen, which scares me.

It's hotter than the surface of the sun, but in his hands, he can work wonders. And it's really neat. So when do a couple of his mastermind, conferences head at his winery, which is beautiful setting in Sonoma.

That it's just some amazing minds on peptides, on longevity analytics, coming together. And it was just a wonderful experience of like minded, physicians that, you know, they're geeky on one end, you know, Joe's Mr.

Suave, good looking guy, but he's also a geek. You can tell he just researches like crazy. He's on the cutting edge of of everything. And again, everything from cosmetics to the sickest person to.

But it seems like his passion is really having people live better, longer. And he has a whole new way of looking at this longevity. We here at longevity or take this, take that, which really goes after, you know, getting rid of your cells that are causing the problem. So, thanks, Joe.

Thanks for being with us. It's an honor. And I just learn so much of every time we we we get together. Well, thank you for that, wonderful introduction.

It's an honor to be here and to be able to share just some knowledge and and and education with my colleagues and, and peers. And, I just thank you for inviting me.

Really appreciate it. Thank you so much. And, yeah, so senility versus longevity. It's kind like, okay, if wants to live longer, but one how do you achieve that or is that kind of the goal or how do you how do you achieve that?

What's what's so important about set Olympics and what is it I guess. Yeah. So the the as we've developed what used to be called anti-aging and we think about the largest, educational, you know, institution outside of medical schools and looking for integrative medicine programs.

The American Academy of Anti-Aging medicine, you know, coined that term decades ago. And we've used anti-aging for a lot of years. And that anti-aging foundation and the fundamentals of, our endeavors to slow the aging process started and still are true today.

With, lifestyle, the purest form of medicine, it really is if we can prevent disease and live a longer life. That's where I really kind of cut my my professional, teeth, if you will, at the Cooper Clinic in Dallas, Texas.

But, you know, back in the 90s, we we looked at, we have the largest, you know, I worked on the, the database there for a lot of years. And we look at the impact of lifestyle on longevity and the mortality data, all cause mortality data is, is, you know, is is compelling.

Is it? It's all the evidence is, is there if we live a healthy, balanced lifestyle I want and set a lifestyle I want the pill we got. We got peptides that makes our body think it's exercising, makes your body think it's fasting.

So, we've we've made a lot of advancements in integrative and regenerative medicine that apply to longevity medicine. So, you know, we've coined the term longevity medicine.

And, the underpinnings of the mechanisms of improving healthspan and lifespan. When we drill down deep into the literature and the science of where we used to focus on, we have to control inflammation.

We still know that we have to control that low grade inflammation and oxidative stress. And we were taking all these antioxidants. And there's still a very important role for it.

But the, the that life's first of all lifestyle, create some of that low grade inflammation. Some of our genetics creates the low grade inflammation. What we, you know, we are certainly what we eat every day creates low grade inflammation, stress, etc..

And, we so we would try to balance those things out with supplements, etc.

Longevity Medicine and Senescent Cells

. What we've become a lot more sophisticated because we know the one of the most important end results and important drivers of premature aging is something called a senescence cell.

And that's in essence, cell is produced in greater quantities from healthy stem cells, healthy cells in the body. If we do those things wrong on a daily basis in lifestyle and we don't pay attention to what we this low grade inflammation everybody talks about, and we start getting genetic or DNA damage in our cells that accelerate the number and, and speed at which you sit back.

And what what is a senescent cell. So senescent cell is a cell in that, that, is at the end of its lifespan in the human body, it's no longer, functioning.

And every system in the, in our bodies has, first of all, healthy Stem cells, stem cells that reproduce skin cells. But the other skin cells, we don't get wrinkles in our heart, so we don't get heart disease or heart failure or our lungs, our brains that we all get Alzheimer's, etc..

And as we age, our ability to, maintain those stem cells, they also age. And over time, the senescence cell or, excuse me, a senescent cell. The healthy stem cell turns into that senescent cell, and it gets stuck in a state of suspended animation, if you will.

It's one of the ways the human body prevents that cell from becoming a cancer cell. So in one of the phases g0 of, the the life cycle of the cell cycle, it gets stuck.

It does. Well, normally a good healthy immune system can destroy that stem cell through apoptosis and autophagy. You know, is it take in general for a stem cell to become a senescence cell.

So the in the literature supports about a 22 day cycle. That's it. That's it. So about every every 22 days we see this migration of, you know, stem cells, healthy cells turning into, morphing into these senescent cells.

And as we get older, as we go throughout the decades of life, our ability of our immune system to identify them and rid them and, and basically, kill them into apoptosis, becomes less and less, effective.

So we look at ourselves in the, you know, we go from 20 to 30 and say, okay, I was ten years, I age a little bit 30 to 40. We seem to increase that aging process.

It accelerates. And it is because these senescent cells are building up in our body till we get to an elderly population where we're in our older or our later years, and we have so many senescent cells, we have so much inflammation that our quality of life really starts to deteriorate.

And those senescent cells really start to increase about after age 60, where immune system starts to falter. And as this and cell number start to increase, so the senescence cells, when I switch systems and cells, they're not just sitting there.

They're actually causing problems. So true. What happens is every place in our every system in our body has stem cells, and it has a ratio of healthy stem cells to senescent cells.

And those senescence cells become eventually the worst case scenario is they become self cells. And they're secretary, you know, phenotypes. In other words, they turn into a, a basically a factory that produces inflammatory substances that also pollute the milieu or in the environment around this healthy stem cells, and start recruiting those stem cells, stem cells, to become more and more unhealthy and convert to senescence.

It's business cycle, accelerate the aging process. Sorry. So everything is a vicious cycle. It becomes a vicious cycle if we don't know how to target them, those senescent cells, and to prevent them from becoming senescent.

And then if we have them understanding the science as we know today, and we're just still scratching the surface, but we do have, tools at our fingertips to be able to prevent senescent cells from occurring.

And then if we do have them, we understand ways to actually read them from the body. And that is for me, my focus of, approach to my therapy, my, my therapies, with our, my analytic therapies, my longevity therapies for my patients.

Today, in 2020, that's that's the most current literature and science that I know that has a significant impact on, our endeavors to improve our longevity and our health span also.

So I, I love that because, you know, you have this is good for you. This is good for the cells, good for the cells. But you don't want to be feeding these senescent cells.

You want to get rid of them. So all your protocols you don't. It depends on the order of things. Right. Is, you know, just say, oh, this is good for you.

Take it. Now, you got to do this first, this second, this therapy. Can you talk about the the timing of your protocols?

Well, if we look at and understand that we have, we have a group of senescent cells in the body, we have a group of healthy stem cells.

And if we try to nourish or feed or improve the health of a healthy stem cell, the same mechanisms that are improving the health of a healthy cell actually improve a cell.

We don't want to, improve their function. Now we can take a senescent cell and pull it back from the cage, and we can pull it back from that senescence and make it healthy again.

But more often than not, it's just that last step on the, the, on the, on the pathway of senescent cells, that cell that we do not want to promote itself because we do not want that cell to become more efficient in producing inflammatory substances and accelerate the aging process.

It seems like you're taking a step so-called forward, but you're you're causing a, cell that's causing problems to live longer. And you may be better for a bit, but it's going to quit.

It's gonna be one of the ones that has to go back to senescence. So yeah. And that's rare. So the most important concept that I explain to my patients that I understand from, from, you know, the literature and research, which is quite frankly, been around a long time.

Senility is in the literature for decades. It's just coming to the fore now and understanding that this is one of the most powerful, of imbalances. This is one of the most powerful, I think, concepts that have identified in human body that have been linked to premature aging and that premature aging begets, diseases of aging and diabetes.

There's no shortage that heart disease, Alzheimer's, dementia, etc.. Yeah. It's like, you know, a diabetic patients. And if people do like stem cells, like bone marrow or fat, if they that'll work.

Right. Because you just got these crappy stem cells that are senescent. You're just basically giving a more than that. And you know, what's interesting is that there is a lot of research on this.

One is, again, I don't want to be doctor bashing, but, you know, how many doctors even you go to, your standard doctor knows about senescence, you know, and analytics are do they care?

I mean, they're in a they're in a model that if they did care, they'd be miserable because how do you know they're going to take 20 minutes to explain.

No, they already that that's twice their time. They have and it's interesting and like everyone looks for new research, but, you may find this as well.

You look back specially on peptides. There's people going, oh my God, how do I not know about these hundreds of studies? Well, they've been around for 50 years, you know, and it's just gets overlooked because there's no drug rep tapping on their door three times a day trying to get them to buy a drug.

And, and so it's really the old literature and I really think you could go back and look at the old literature, in any specialty except for surgery or something like that for two months, and be better than the specialist, you know, they're just doing the same thing they've been doing in residency.

And because that's what they need to do, you know, where you, are on the cutting edge, and you're always. It's amazing. You know, you're finding new stuff, but it may be old research.

That was done, but fascinating stuff. Fascinating. You know, and this this whole analytics is kind of blown a hole and everything. Oh, take this is good for you, good for you, good for you.

Well, at what time you know, do you want to feed these sick cells and make them better at making you sick? You know. Right. Well said. And that's a the what I've term now is more precision analytics where and the fact that we

have to if we look at all the anything from a natural, occurring substance in Mother Nature, whether it be a flavonoid such as quercetin or visitin or long pepper, that or all these, all these substances actually are very powerful analytics.

And they can, prevent healthy stem cells from becoming they can prevent senescent cells. And they also, in addition, can actually induce a pop ptosis of a sort of a senescent cells, get rid of them.

So that's where diet comes in. And then there's supplements that actually can enhance that. But the what what the the, the science shows, and that's all I base my on of my, my, my therapeutics on the literature, and take clues from, many, many decades, for, well, not forgotten, but there's so much literature out there that we have to go back and actually, to revisit some of the very powerful science that has been forgotten, such as even in peptides, peptides are very powerful in analytics and in many areas of application of regenerative and integrative medicine.

So. Oh, yeah. Now wait a minute. You're an anti-aging doctor. You're not supposed to look at the literature. So much you have and so much of that literature, so much of science, so much of the basic science that those mechanisms of action and the science supports the, the, clinical application in many, in many, in many ways, anecdotally, there's so much science that supports what, how we approach longevity.

And it's interesting. And and again, I don't like kind of going soapbox with the whole health care machine. And but it's like, you know, you get the less a doctor knows the more adamant the right.

Like, okay, that's wrong, you know, okay. Well how much have they read? And I'm like, you know, I read more in a day that they do in a year, you know, and and I'm sure you're the same.

And, and that's, that's what you got to do, you know, and it takes a long time, but, and and it used to be, I remember, like, you know, going to the library and, like, picking out the journal and then going into the damn fax machine and then, like, a few other journals not there or whatever.

Now it's information overload, right? It's so much stuff coming at you with 80% of it is just, you know, whatever. Just political stuff. And, and so much is hitting that really the consumer, the lay person, the person in your patient who will, you know, contact you and talk to you through, you know, my my patient satisfaction is in my patients, for example, in Dallas or word of mouth.

I do, you know, advertising. I just do my best and follow my passion taking care of my patients. But they will come in with so much literature, so much, so many ideas that they see on, on, you know, online.

And then and I feel that one of the most important jobs that we do as integrative medicine physicians is to be the gatekeeper for them. You know, we have to be able to, you know, we through way through all the all the, all the, potentially dangerous things that they, that they find that they want to try and find them the most effective, safest and cost effective therapies for them.

Right? Yeah. And that's possibility and I agree I tell patient, go to the internet, get all the stuff. There's great information. There's misinformation. Bring it in and we'll talk about it.

So many doctors are they. Here they go. Oh are you the doctor now. No. You have to be an active participant in your health now. And if a doctor tells you stop reading the internet run because they can't support their therapies.

I, I think it's great. And I get patients bringing in obscure journals. Look at this and like, oh that's interesting. Well, yeah. You know, and and, and there is so much great information that is just bypassed because there's not a patent on it, there's no drug wrap.

And, you know, and that's where all the excitement is. And I'm telling you, the excitement in this and I hate the term anti-aging or alternative. I hate that the more, you know, because like, oh, there's no evidence, like, are you kidding me?

Protocols for Clearing Senescent Cells

It's, you know, I'm very evidence based. I've always been. And but I was told never go to this alternative. And I went and I'm like, oh my God, they're more evidence based than you know.

And, and a lot of doctors rely on societal recommendations and you look at levels of evidence. So you got your double blind, placebo controlled study, you got your meta analysis, you got your single blind and you got case studies, you know, anecdotal.

And then below that are societal recommendations. And why is that? They've shown to be wrong, you know, such a high percent of the time because they don't change for 20 years.

They're very biased. They're looking at one side and they're terrible. But what do doctors quote? Oh, the, you know, American Academy or the Endocrine Society says go by the TSA.

Okay. Well, that's I got one patient that says it's not true. That's better evidence than the societal guidelines. You know, and so, you know, all physicians, I think, as a profession collectively, are some of the most dedicated, professionals, you know, on this earth.

And we're all just trying to do a good job. Just that our toolbox and our tools may be a little bit different. And our our, our thought processes, the way we approach patients may be a little bit different.

And what we our depth of knowledge and our understanding, we're just trying to do the best for them. I just know that I'm, I'm, compelled to get up at 4 a.m.

in the morning and comb through. I know what you do. You know, I can text you 4 a.m. and find out what are you looking at? And bug bad, right? I'm still up, but I can't get up. Right.

You see, there's no incentive for these doctors, because they're in a system that they can find a cure to cancer. They can't do it, you know? So why should they find these things?

You know? And so I get mad at the doctors, but I used to be kind of just so angry. But they're in a, untenable situation. They. If they want to, they're going to make themselves more miserable, you know?

Yeah. No. And I, So true too. Well said. And I think the that balance that, that is even more finely honed in longevity medicine and analytics is the fact that, we as I mentioned before, there is a lot of science out there, but we are just getting an early on and just scratching the surface on longevity and how we can improve our, you know, just our quality of life.

And, but the, it's, it's it's, it's more fine tuned because we don't have the luxury of waiting, you know, a whole lifetime to see how. Well, our, our approaches work.

We know that, you know, short term, the same, parameters that we use in longevity to you certainly improve lifestyle hormone balancing. If we take a closer look at bouncing hormones in men and women, there's literature out there that the support that, you know, the humans do live longer when you do, a balanced sex hormones.

But and then you little deeper in the basic science. You see that that hormone balancing has a direct effect. For example, mitochondrial health and function and efficiency.

It's like, well, okay. Yeah, you can define balancing as a longevity approach. Yeah. And and you look at, you know, the doctors will say, oh, don't take hormones that cause cancer.

Well yeah. Synthetic hormones do. If you want to give a woman breast cancer, give her synthetic progestin. If you want to prevent breast cancer, give her progesterone and you know.

And would you say most of the things work at the genetically or change that gene, expression. Yeah. And I think there's a lot of, unknown epigenetic epigenetic phenomenon occurring.

And, you know, all our therapies that have just haven't been discovered. And one of when I give, one of my talks on, presentations on longevity and peptides, and I love referring to the GHQ or copper peptide because the, the Broad Institute at Harvard has over 4000 studies looking at the impact that copper peptide has on, genomic and genetic expression and resetting your human genome to a healthier, a reset, healthier, set, and down regulating cancer genes, upregulated anti-cancer genes.

It have the impact it has on misfolded proteins and making the cell healthier. There's there's so much not a literature on a peptide that is, I think, overlooked in addiction.

I use a lot of it in mice, in my in my, in my programs, just as a, just to improve skin health and and so. Yeah. Okay. And, for everyone out there, you know, it's a copper peptide, a tri peptide.

You'll see it a lot, for skin. It's a little blue, or it should be, now, are you giving an injection? I do, I use it systemically and topically. Yeah, it makes sense.

It's doing the same thing. And really anti-aging the whole body. Or do you want the just the skin? And can you talk about, like the so-called theories of aging and how sit analytics fits into that?

Well, I, I, you know, the, the end result of the theories of aging, where we're looking at might or excuse me, DNA damage. The end result is, is a senescent cell.

We can just as we mentioned, copper peptide can actually reverse some of that damage. Telomerase activator actually can go into the mitochondria and help reverse some of the mitochondrial DNA damage.

But fundamentally, every day our DNA is being stored hundreds of thousands of times. I mean, depending on what literature you refer to, where our collective DNA damage it results in, essentially our demise and how how we protect our DNA and how we, maintain and manage our senescent cells.

Because remember those senescent cells I mentioned that all the inflammatory substances that are produced go back and in the, in the environment, in that stem cell environment, cause DNA damage and accelerate to other cells to become senescent.

So it's a vicious cycle you were referring to before. So, yeah, protecting DNA and and in and in, in an environment such as we have with pesticides and UV radiation, irradiation and radiation in this world is is one of the fundamental reasons why why we age.

Yeah. I think we're in a more toxic environment than we've ever been. You know, I mean, it's, you know. Yeah. Pesticides, plastics, you know, pollutants, the emfs, you know, all this pandemic stress, and stress, stress is a killer.

And it's interesting, all the theories of aging, you know, you got your, you know, free radicals that are nuts, but they do all kind of come down to and they argue over all these things.

But wait a minute. It's all about the senescence cell. Like they're arguing over here. Right. But the common denominators over here. Yeah. And that that took that term calling inflammation aging is the is really the result of all those insults we were talking about.

And that's, that's a that's a term in the literature that that has been used for many, many years and, and is adopted by, you know, many physicians in integrative medicine that talk about inflammation.

And because we want to prevent disease, we need to address inflammation because that inflammation is linked to those diseases of aging, which are you they're everywhere.

They are pandemics, diabetes, heart disease, etc., and cancer. Yeah. And it's all it's all about inflammation. They look at like diabetes, inflammation, hypothalamus causes diabetes and get insulin and leptin resistance.

They're you know the receptors are inflamed. They don't they don't see the leptin and the insulin. You know. And and you lower that. And lo and behold, they're they're better.

Interesting. What types of things do you, do or how do peptides play a role in this and the order of things? How does that work? Sure. That well, certainly if I start with it, because I'm really not going to get into it.

There's some very exotic, to peptides that are cell penetrating peptides to get into the DNA in the nucleus and can reprogram themselves to become healthier or can target senescent cells.

You through various mechanisms in the body, such as p53 and and and and and induce apoptosis if but if we want to swing back the other end of the spectrum in terms of prevention, and we always falls on a healthy immune system.

The one of the major reasons why we develop cancers and our and our demise later in life is the fact that our immune system starts to falter. And, the thymic peptides are integral in maintaining immune vigilance and preventing immune senescence.

And you can certainly there's supporting evidence and science as as it shows that synergistic if we, restore thymic peptides to a more youthful level, that our immune system becomes more vigilant and can see a cancer cell starting in the, in the body, for example, and to then be able to identify it and eliminate it.

So, those are some of the most important peptides. And, you know, I think in this analytic space, in the longevity space or the thymic peptides. Yeah. And it's interesting and look at that studies and you look at this is what I hear all the time.

But say someone gets, metastatic, colon cancer and they go, oh, you're cured. And I'm like, you know, I didn't don't tell them this, but in six years, it's going to come back.

You know, a cure is five years, right? So and what they have found is after chemo, your chance of relapse is totally dependent and directly dependent on the level of your immune system.

For instance, natural killer cells monitoring your body for cancer. So the chemo, wipe that out. And now you don't have anything monitoring. So of course it's going to come back right.

And, you know, you have a bunch of senescent cells that they could be there, which are so uneven, like with chronic fatigue syndrome, they found that 25%, have low natural killer cell number.

Okay. They're they're, you know, most of their. But 75% have low natural killer cells function. So it doesn't work. The cells are just dysfunctional, you know, and, and it's amazing that that's not not addressed, but it's a it's key to getting that immune system.

Well and that's on the. Yeah I agree. And that that is one of the key components on the prevention side is to prevent senescent cells from developing and and identifying them, destroying them.

So it's one of the, fundamental cornerstones of longevity of medicine and longevity therapeutics. The, you know, the overview of said Olympics draws on, so many areas of, of therapy that are really quite different.

I mean, there were, as I mentioned before, there's some very natural therapies that are very powerful analytics. There are mitochondrial, peptides. We get into peptides.

We talked about the thymic peptides, but there are mitochondrial peptides which I don't use a lot of. And I if I do, I use them after I've wiped out those two.

There's no senescent cell population in the in the body. And think about how do I want to optimize mitochondria. Mitochondria. We talked about theories of aging before.

We talked about DNA and DNA and mitochondrial function are the fundamental underpinnings of a healthy stem cell in longevity. So, you know, they, they, they you connect the dots every single time from lifestyle, exercise, optimizing a mitochondria.

There's certain things we eat in, in in our, in our, in our diet are helpful to mitochondria. Then we move into nutraceuticals. That help improve mitochondrial efficiency.

Whether it be, you know, alpha, resveratrol and and activating Sirt1, etc.. To, to, optimize mitochondrial function.

Peptides, Hormones, and Mitochondrial Health

Then we get into mitochondrial peptides like I don't use, you know, I the literature says they're all good and they're supports, the, the function of certain peptides that improve mitochondrial function.

So, you can even look at telomerase activator. Telomerase activator, it lengthens telomeres. But when you look at the non-canonical, functions of telomerase activator, it it has the ability also as, as in when we were talking about GHQ before, but it has the ability to, to impact mitochondrial DNA and repair mitochondrial DNA.

And that's one of the reasons why my telomerase activity is extremely important, I think, to telomere length is is a surrogate marker of stem cell health and longevity.

But if you have very long telomeres, doesn't mean you're going to live, the equivalent of the, you know, the my telomeres are twice what they should be.

I'm a 15 year old. I'm not going to live another 100 years. But it is a great marker of, I think, mitochondrial health and mitochondrial DNA health and where the how far that gets you in terms of longevity, no one knows.

But the fact is, is when we improve mitochondrial DNA, mitochondrial efficiency, it actually has a positive feedback back to, telomere health and healthy telomere ends on the on our DNA that, help also to promote longevity or contribute to our ability to, live longer or potentially live longer, I should say gotcha, gotcha.

In the mitochondria. You know, we're taught medical school, you know, that other mitochondria just for energy, but, sick mitochondria, they do. So much more, you know, they sense, danger.

They call a danger response. And they start pumping out, you know, basically, you know, all this oxidation and sickness. So, yeah, you're better off getting rid of that cell than, you know, trying to stay.

Can can you just mention real quick, like, what is it? Telomere. Well, telomeres are the end caps of our DNA, and they are, identified or measured in units.

And let's say we, assign when we're first born. Our telomeres are, ten units long. And, each time a cell reproduces, we have to, you know, read our DNA.

And our. And when that happens, our, our telomeres at our end caps become slightly damaged. And the amount of telomerase we have in our body, which is we have more early on in life, as you build, you go in or into that telomere and it, it help heal that injury.

So it doesn't shorten. But each time a cell reproduces itself, the telomere shortens a little bit. And it's kind of like it's a it's a clock of aging and one that every time they replicate shortens.

That's right. Each replication of telomere shortens. And when we reach three units that cell can no longer replicate. And in essentially we've we've reached the end of our lifespan now does that.

So just sit there until there's a signal to die. Or is it still functioning or the fact that it can't replicate? Does it automatically go to a up ptosis?

Does it die or. Yeah, I and I think there's a there's a parallel between the two. I, there's, there are cells that, will reach senescence earlier on because of, of DNA damage.

But your telomeres may or may not be as short as cell death. In other words, that cell is still viable, is still alive. But it took it when it when it converts to a senescence cell and the body can't, it becomes very resistant to death, actually, so it's it's still in a, it's still a cell that's a living, but it's not contributing to, the health of tissue any longer.

It's a detriment. And we have to get rid of it. And it does. Doesn't necessarily mean the telomeres have reached that, that, that those, those three unit, lengths and actually crotchets.

So it's not a defining thing as, as you were saying. But it's a marker correlates with, with everything. And and I mean, there's this thing, there's so many things that, you know, I think of theories of, and there's so many things that but they're all taking little parts of it.

What what do you like to do? To, I guess, get rid of these senescent cells first before you use your quote unquote longevity therapies. Right. Do to rid the body of senescent cells.

One of the most powerful things we can do is intermittent fasting. We basically starve out of senescence. So we if we, create protocols that integrates intermittent fasting periodically throughout a calendar year, for example, we can maintain a lower level of senescent cells because we basically starve them out.

And I add the various analytics to, for example, an intermittent fasting program and an exercise program and all the things we can repeat over and over again, nauseum.

But, that is one of the most potent ways, in most powerful ways, to clean up senescent cells in the body. I've actually done two hours ones. Does that work?

So interesting comment. So, you know, in my and this is a topic of conversation in so many blogs and webinars etc., etc., my experience with senescence and look and literature is there is a, there's a cut point in about 15 hours that will improve metabolic health, may impact senescent cells to some degree.

I personally use a three day fast on my patients or I'll use fasting mimicking diets. So five days where they still get some, still get some caloric or calories, they still have some food, but they do enter certain a certain states that will create that cycle or start that cycle of cell senescence, cells, senescent death.

So that so that fasting is the lack of nutrients that, that kills. Or is it something else, or do we know? I don't think we know. It's you know, I think senescent cells do not like, a key tonic state.

The but in simple terms, if and when I speak to my patients that we're basically starving out those senescent cells, they're, they, they succumb to, that state of, of, it's not starvation, but that state of fasting where they can no longer survive.

Gotcha. And you said you do a three day fast, so you actually not eating anything for three days, just water or what do you do. Yeah. So, you know, my patients can do that.

They do. We do water fast. Three day water fasts. And you should do it under physician supervision, in my opinion, because we can have some concern about electrolyte imbalances.

And if there's any sugar, excuse me? Blood sugar issues or glucose issues and diabetes. We have to certainly. We certainly need that medical management and intervention, but even have healthy patients.

They can become dehydrated. They don't drink enough water, they become hyponatremia. That the longer you

fast, obviously, the longer we can, run into those, those issues, we can develop those issues.

But a three day, fast is pretty safe. And in the science, in the physiology in the human body shows that we start to really start that the inflammation really starts to drop off after about three days.

And the same thing in one of the most study diets is the fasting mimic five day fasting mimicking diet that has been shown to, you know, decrease inflammation dramatically on day five.

Improve your cholesterol profile, metabolic health, and, all the things that we see that, improve when we wipe out a population of senescent cells, then we come back and we want to start up regulating mitochondria with NAD.

If you want to do energy, protocols, you want to use, nicotinamide by the side, but whatever. You know, I there is some benefit, I believe, to, to some of the oral supplementation that improves, nad in the body, as we age, we start levels of NAD, which is a fundamental, substance, we'll call it that.

You know, in mitochondria that mitochondria need to create or produce ATP and produce and maintain cell health and mitochondrial health at age 60. We have about half the NAD in our bodies that we did when we were and we were 20.

And one of the things that, is overlooked, in my opinion, is there's an enzyme in the body as we age, naturally, we increased this enzyme, called a cd38 enzyme that just wipes out NAD.

So I don't and NAD is, you know, to start a protocol, whether it be subcu or you're anything you don't, you, you hang IVs and you in your practice, you want to control that cd38 enzyme because as fast as you get nad, you're going to be destroyed because of the cd38 enzyme.

So to control that cd38 enzyme, one of the natural flavonoids is quercetin. A physician works also, these are natural flavonoids that are found in, you know, our our cruciferous vegetables, but in supplemental form, in supplement form.

They've been, very integral in decreasing the cd38 enzyme. That's when I'll start after I wipe out senescent cells, give them course and they give them the in the visitin they have it on board already.

And that's what I'll give you. That's when you get your most benefit. You bang for your buck. Yeah. For the berries chewing it up. And you're like doing these long IVs.

It's like, okay, you're just. Yeah. And it's it's interesting with the flavonoids. I don't know if you do a lot of genetics, but, my genetics is like every answer was flavonoids.

It's like, okay, right. You've got a weakness. And this, you know, this gene flavonoid, I haven't, I haven't played I'm like, oh my gosh. Yeah, yeah. But they're potent.

And, they have a lot of, you know, they have a lot of, mechanisms of action and longevity. So if we, you know, certainly if we we took all the science that we've been talking about for the last hour or so on analytics, and we just look at, the, the blue zones and how, you know, the most at the best longevity, on this earth, are driven by genetics, are driven by social networks, are driven by, exercise, daily exercise and, and nutrition.

What we put in our, in our bodies every day. So, because I think there's, Mr. Wood thinks the genetics determine the person. Right. And that's my knock on these genetic tests, like, oh, my gosh, I'm going to get this, but you get identical twins.

And this person has this environment and, you know, this type of lifestyle, this person totally opposite, totally different. So what is it about 80% is, you know, basically malleable to lifestyle nutrition, you know, environmental factors where genes are okay, what the hand you're given but what you do with it and you can turn them on, you can turn them off and you get it.

Yeah. And that's I think the key. Right. Those, those studies are wonderful. There's I always referred to a finished study that looked at identical twins and, and different lifestyles and compared telomere length actually over, over a lifetime and saw and and compared their lifestyle with stress and what they have endured, if you will, in terms of that allostatic load on what how they've focus or not focused on, healthy lifestyle and the, you see shortened telomeres in the, the identical twin that did not take care of themselves versus the, the identical twin that lived a very healthy lifestyle with exercise, etc., etc..

Yeah. So your genes aren't your destiny. You know, people freak out. They have, ApoE4 gene. Oh my God. And we get Alzheimer's. But there's so many things that you can do now, you know, to, to, basically, prevent those things, with the mitochondria.

Have you done five amino one MQ? Just curious. It's hard to get and I'm loving get it nowadays, but I do not know. I, I have use a lot of mitochondrial peptides.

Gotcha. And you like any of the brain peptides? Through releasing Cmax, you link you like those?

Telomeres, Fasting, and NAD Support

Well, the, one of the areas of interest I have in my practice is chronic inflammatory response syndrome, which is a, it's an innate immune system, imbalance, we'll call it, where our innate immune system, which our first responder, kind of like that ancient part of the immune system that's, you know, responds real quick to try and knock out a virus or a bacteria, but never gets handed off to the rest of the immune system and shuts the whole, the whole.

Oh, you just love taking the easy patients. Negative response. Yeah. Well, those are the tough. Those are tough patients. Yeah. So getting to that, those analytics are newer tropes.

There's there's a, we've done a, we've created a small database and followed some patients with some, neuro testing, cognitive testing and short term memory.

Yeah. Executive function, etc.. And we use a, we get a baseline because of what I just described as a systemic inflammation. But we know that that same information is also ongoing in the brain.

They have more glial inflammation. So they start losing memory. They start losing their ability to, function. They eat and then their livelihood. So we're using a a neuropeptide, called the Hexa, which, that is, it through the mechanism of hepatic growth factor, we have the ability to increase feeds on brain derived or trophic factor.

And everyone knows that that is basically Miracle-Gro for neurons. And we know we can grow neurons now. We can heal, heal the brain and decrease that inflammation.

And anecdotally, in this short and this small database, we've had some, very significant success. And I believe it's anti-inflammatory, not just the PDF that shuts down an inflammation.

And, and within 30 days we see their short term memory improve. It's part of a protocol that we use for our patients in addition to yeah, there's a. Exit.

Yeah. Yeah. So you know it's a great studies are all simmers and it's, analog of angiotensin to a angiotensin is a Bayesian AC. But it makes so many things. But, it, yeah, there's a number of trials that that, coming out and it's, it's amazing.

Like all these trials, I'm like, okay, when are they going to finish? You know. Yeah. And there's a lot of trials and it's, it's a it's always a moving target.

I believe that, you know, the, the FDA is, is not fond of those three and currently, but there's there's probably more studies on that as a, Oh, I do a trial in the 35 countries, no side effects.

And they made it a biologic, you know, so you can't do it as an injection anymore, but you can get it orally. Now, which actually, EEG study shows that absorbs and, one capsules equal to about two cc's.

What? I think that's one of the, promising, new, developments in peptides. We're we're moving off the sterile injectables and moving on to oral peptides, intranasal transdermal peptides that, become more and more effective.

And to be sure that we can use them to a, you know, to greater degrees in an integrative medicine practice. Yeah. And but they, let me tell you, we're doing a lot of studies on bioavailability, and you think, you know, just a tiny tri peptide is absorbable, and it's not like the just throwing everything sublingual and say, oh, it's going to absorb.

You don't know. You know, you have to look at the, the chemistry. We've hired, CRM that basically works with all the big pharma, to develop these ways to make these things absorb.

And when you look at, I mean, Big Pharma has been trying to do it for 20 years, right? I mean, everything's exponentially getting better and better at it, but it's it's a lot tougher than, you know, putting something in a way for and putting it sublingual, you know, I mean, we have you know, we have so many disease processes that have, just a paucity of, of therapeutic, success, you know, so we look at, TBI, for example, or post-concussion syndrome in the chronic state.

And there's I think there's probably some significant effective therapies in peptides and, you know, one of the products that, you know, I'm a I work with right now that, we're we're looking at, in treating TBI, where we have hypoxia in the brain, etc..

And, the current therapies are just false. So. Sure. And, if not, I'll go home and die, right? Yeah. And, sorry I cut you off the. Oh, no, it's fine. It's just that there's, There's a lot of TBI researchers out there that are, you know, are all ears looking for that?

Just a, a therapy that has the, the promise to, effect a an improvement on, on chronic TBI or post-concussion and, you know, the players coming out of, you know, professional ball, military, etc.

that, you we need to approve those therapies. Yeah. And it's, I mean, not just the, you know, the football player. I was at a stem cell conference, and it was the NIH did a study.

It's Spect scans. They can tell what position the football player played by. Whereas brain damage and but it's reversible you know and exome stem cells peptides.

And I know you've been working with powdered oxygen there, there is a, there is a product that, is under study right now, doing research at, in, in various, settings that, have been, showing more and more efficacy to, increase, oxygen levels in tissue with, a product that is actually, has benefit by, oral ingestion.

So we if you think about the possibilities of being able to drink oxygen and oxygenate tissue, it is a, effectively, in, in, in various settings, acute and chronic settings.

The, potential is enormous. And the potential benefit after we get these studies underway and human studies, etc., and everything from, just the just sports performance to, traumatic brain injury to wound healing, etc., and even diabetic foot ulcers.

The, you can say limbs. Yes. Yeah. The, the you know, the product's been around nine years, been studied, for, for quite a while. And it's, it's ready for we're really getting to more and more human studies, that, that are going to have a huge impact on, on, a lot of, global humanity.

The the fact is, if you can oxygenate tissue and, a world that has, a shortage of, of options such as blood to be able to resuscitate, you know, about, you know, a injured, human injured body with powdered oxygen.

It's a it's it's a, when those studies are complete and and they, they, they certainly, be, come to fruition where I think

we're going to see a huge impact on, on the, on, on those, on those issues where we have those, those, lack of blood supply in the world, for example.

So that's where the profound ones that I, that I think of, but no credible because, you know, covering one, you need blood supply there and then two, you need the lungs working now.

So you need like, what about copy patients there? You know, if they can get off their oxygen and just drink it. Right. That's that's pretty amazing. Where altitude if you can't altitude hypoxia.

Sarcopenia. There's a I mean, it shows the impact long term of, hypoxia on the body is in COPD. COPD is a long term and. Yeah. Oh my God. My head's just spinning.

I just think oh this is different things. Oh that's that's very cool because I was like how the heck. Okay. Because when you under tremendous pressure you can make the liquid.

But how the heck do you make it a powder? Right. So I'll leave that to the patent. But, that's that's awesome. It's exciting. It's exciting. It's very exciting.

And if we think about applications in regenerative medicine and even longevity, if we have, the ability to improve mitochondrial efficiency, I, you know, in the future, at some point in time, I see it even playing a role in, in a, as I said, a lytic or longevity to, improve stem cell health if, if we, if we put a, an injured athlete in the hyperbaric, as you know, we, we accelerate healing if you make an acute injury because of the increased oxygen, oxygen tensions.

Yeah. And I think there's going to be secondary pathways. It's like, okay. And that makes, you know, nitric oxide, all the things it does. And, and I think it's going to be like, yeah, a trophic effect where you have more oxygen and you have healthier tissues which stimulate good genes. And, you know.

Right. Where I think because you get hypoxia, that's what all inflammation and bad stuff gets secreted. Right? Right. Interesting. Yeah. I love to hear more, more about that. So, but kind of in summary, what what peptides do you like in general?

Brain, Injury, and Regenerative Applications

You know, certainly a large part of my practice is, esthetics, regenerative ascetics. So, he's, just mentioned I'm on the cutting edge of always esthetics.

And I knew the FDA approved, but they're from, like, Italy. These threads, I got some look at that. So I'm such a wimp. But they're so painless. I just do. And I mean, everyone is.

I mean, they were clamoring to get at you like they treat me. I mean, you know, so, he's an artist as well. Really with with with his, with things. And, and I was amazed you can pick out, like, exactly what someone needs.

Is it, it was very interesting. Like, I don't I don't have that, that sense, but, and just always looking for new therapies as well. Yeah, they certainly, you know, the applications of, peptides today and and that isn't actually I've been around quite a long time.

And, we, kind of repurposed them a little bit into hair restoration. I've been used to doing hair restoration for quite a few years, and we just dig into the science of the thymus, for example, Gchq, BBC, all of them collectively, can repair the scalp as an anti-inflammatory, increasing subcutaneous fat with TV for, activating stem cells, improving their migration down to the hair follicle bulb and moving a hair follicle into an antigen phase and starting hair growth again.

So peptides are a key to esthetics just starting in the scalp. And the, you know, has been around since 1870, and studied endlessly for as a topical cosmetic, and if you look.

Yeah, it has a, how potent it can potentially be as a systemic peptide, not just, know for the minute things we mentioned before, but, all those, all those mechanisms of Gchq.

Yeah, they, they also work on the stem cells, you know, the immaterial stem cell, the, the fibroblasts. So, it makes sense to apply it topically. For sure it works, but why not systemically if we have a, you know, a decrease, you know, increasing, excuse me, a successive decrease in our GHQ as we age, so.

Well, I, I'm, in LA, so you can just have beautiful outside. But if your insides just deteriorate, they don't care. Yeah. It's like, but I'm telling you, every time I see your hair, like, you have more and more air.

I've never done a not once ever. This is my hair. Thank God I'm blessed. But, Yeah, the hair restoration is a lot of fun. The, the sciences are integral in in esthetics, in regenerative.

Is that it's practice. And, the, not only for a topical, application, but we know that the ability to accelerate healing is a systemic phenomenon. And so we can use peptides.

There is evidence that using systemic peptides such as Tb4 or even VPK or oral BPC one, five, seven are very effective in, in, in restoring or accelerating that healthy injury that we use in esthetics to restore, restore skin, restore tissue to a more youthful state.

Nice, nice. So you, you you take you know, I love that you take the application. I think that it is lacking so much in medicine is doctors learn this, but they don't take this and apply it over here, you know, and and purpose medications all the time.

It's it's it's yeah it's balance in their, in their own little thing. You have to guess or allergies that the cardiologist you got the neurologist. And so patients go to all these different things and it's like you know come in with, you know 22 diagnoses.

And I'm like what do you think? It's likely more likely you have 22 separate diagnoses that aren't related. Or there's something one thing underlying, you know, but, I, I love that any new therapies on the horizon, I love this, powdered oxygen.

I think we're going to be looking at, you know, one of the areas in, in regenerative medicine, obviously, are biologics. And whether we use cellular rise growth factors that used to be called exosomes, the stem cells, there's always a moving target as to their application and, how you can use them and when you can use them.

But more and more of those products are becoming, being, reinvented, if you will, or redesigned as topicals. So, looking at combining, for example, in wound care, as you mentioned before, diabetics, but just in esthetics, the post procedure, healing time is of extremely key to your success.

And if we can combine a topical biologic with a something like a powdered oxygen that supplies that wound and that healing with oxygen and those growth factors and all the things we need to accelerate the healing without dampening down that inflammation too much.

Because we want to call on those stem cells, naturally, to come in here. And I think we can find that balance and accelerate that healing and effect a great outcome, taming those stem cells with the with the, with the peptides.

So in addition, that tell that stem cell to go down that path of healthy, healing laid down the right college in college and three and college and one and not going off and creating scar tissue.

So for me, that's that a very exciting area of development going forward over the next 6 to 12 months. Yeah. And I think what peptides are so synergistic with some of but especially, you know, stem cells.

And I've given a lot of talks on the synergy. Even with the, latest virus that's out, I want to say it because the rest is, you know, with the, Ovid. Okay, whatever.

Pig Latin. But, is that stem cells are reversing that especially added with peptides. And, you know, the stem cells will secrete peptides, whether it it needs to be anti-microbial peptides or actually thymus ins.

And then all the like the thymus in the BBC stimulate the stem cells, you know, so it's they're really a nice combo. And I think you get, you know, one plus one equals five type thing when you use them together.

Okay. Wonderful synergies there that need to be explored. And and and and created into products then and utilized and you know, all these areas we just yeah.

I just word the FDA is so, you know, they're really the, enforcement arm of big pharma, but, you know, if you have something that's exceedingly totally safe and works.

Yeah, they're probably a drug taking away, but, but anyways, this has been fascinating. I, I just love all the stuff you're doing and just your your passion.

And I've seen you work in person and lecture and, appreciate your, just your, basically generosity and sharing everything that you do. And, yeah, just to see that everyone huddled around you and and there's no shortage of free models for you, but, Yeah.

So, I mean, you're doing great work. Keep it up. And, again, all the mastermind conferences you have, please keep them up. I just learn so much and just meet so many interesting people that, are very cool, but a little nerdy side, you know? And, it's it's so far, we.

Well, we've been very successful. Our next one is going to be the end of February, and then we're going to have just the, all things regenerative medicine coming up in May.

So, yeah, we all we already have people signed up, and, we're excited for the, just, you know, put on the next conference. Nice. And afterwards, you get some beautiful wines.

The conda we do. And, do you have any more thoughts in your wine club? We, Yeah, there are some spots left. Just have to call. My, the the main number.

My winemaker will, will set you up because the, we know that. I mean, the wines are speak for themselves. You've you've been to the winemaker dinner at at location to conference.

And I think that's certainly the big draws. Everybody says when they leave the conference, like I learned a lot. And I feel like I was on a mini vacation.

And, yeah, this guy's relaxing. I'll touch a Paradise. And you obviously use your your power of geekiness to sell the wines to and the scientific. Yeah.

And you know, I get to see you in there like, you know, analyzing to get that that ultimate wine and it comes through, but again, they're just doing some great things for people and, you know, and, and I think song even at see you like, like they probably don't realize, hey, I'm going to live ten years longer and not in a nursing home.

You know, what's that worth? Right? It's. And when? Well, what is it now? 80% of the money is spent in the last year of someone's life, you know, and they're just sitting there in a nursing home or ICU at the time, coming in and out, you know, a liver transplant.

And, you know, you can prevent that. You know, we we endeavor to invest, endeavor to make sure that our patients don't end up in those nursing homes prematurely.

Yeah. So, you are, a godsend to so many people, and I thank you. I'm proud to say your colleague and friend and, thank you for all that you do. Thank you.

Thank you for having me today. I thoroughly enjoyed and thank you. Thank you. I know you're just so busy running around, so, I do really appreciate it.

Thank you, thank you, thank.