The Science of Aging: How to Live Younger for Longer | Chris Mirabile | Ep. 20 Transcript

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Introduction to longevity and the guest

The number one risk factor for cancer and heart disease and Alzheimer's and Parkinson's, glaucoma, diabetes, sarcopenia, is aging. It's not only about quantity of life, it's about quality of live as well.

Chris Mirabele is a transformative leader in the field of human longevity and the visionary founder and CEO of Novos. With a groundbreaking mission to redefine aging, Chris is unlocking the secrets to longer and healthier lives.

Get ready for an inspiring conversation that could change your perspective on aging forever. You said you had a brain tumor. Did they remove it? Yeah, they did.

Fortunately, I do have a scar that extends from my ear up to my forehead. Longevity. Yes, that's nice, but good health and good quality of life is important.

Aging is something that we have. A lot more control over than most people think. What's your goal for life span? I would love to get to a hundred years old.

This is all good stuff because data is so important. When you increase health span, lifespan will follow soon, right? Kim Kardashian doing some of these tests.

Let's talk a little bit about that. Sure. So the Kardashians. Welcome to another episode of a healthy point of view podcast. Today's episode, we're going to call it younger for longer.

And the reason why is that we have the CEO and founder of novos. Um, this is a great supplement, a lot of science behind it. We have Chris probably here.

So, how you doing, Chris? I'm doing great. I am doing good. Thanks for having me down here. Awesome, man. You came all the way from what, Palm Beach Gardens?

Palm beach, which yeah, all of the ways. It's a 45 minute drive, so not that bad. As long as traffic is good, I got the location off PGA over there, the Liquvita location.

So when I have to make that trip out there it depends on what time of day, right? That's true. So awesome, man. So I've been waiting for this podcast.

We had it scheduled a couple of months ago for today. You know, so I have been excited about it.

Chris Mirabileu2019s brain tumor and health awakening

Um, you guys have a wonderful product that's making some huge moves in the world of age management. And one of the things, I like to always call it age management instead of this anti-aging, because I'm a firm believer you're not gonna stop aging.

We haven't got that far just yet, but we can definitely manage the way you age. And your products that you have is definitely a key component to be able to to do that, so I wanna talk a little bit about yourself first, your background, how you even got into the age management industry, because most people are passionate of age-management in some sense.

Yeah, I'm definitely passionate. So for me, it began, my interest in health, that is, began when I was 12 years old. I started exercising and reading Men's Health magazine and eating a healthy diet.

But at that time it was really just an interest and health from the superficial side. They wanted to be attractive to the girls in school. being in good shape was my way to kind of stand out.

And it wasn't until I was a teenager when I 16 years old that that completely shifted. I on a school trip in New York City and I suddenly got very dizzy and nauseous one day and had a seizure and it turned out that seizure was caused by a brain tumor, a larger than a golf ball brain tumour that had been growing just above my left ear.

And that experience was transformative. It gave me a completely different perspective on life and what I wanted to make out of my life, but also on health.

And so my interest in health went from that superficial side of wanting to look good and play sports well to the biological side health, which was the avoidance of disease.

Right. I never wanted be laying on a hospital bed again, wondering if I would wake up the next day, Which is what they had just gone through. So that planted this seed in me to whenever I was looking at a different health advice and interventions and so on, I always ask the question, is this going to be good for me in the long term too?

And as you know, a lot of the things that are recommended to us, whether it be diets or supplements or workout routines or what have you, it's always short-sighted.

It's only focused on the short term, like weight loss or skin health or muscle building or libido and on. but very few people are saying, okay, but is this good for me in the long term, or is it going to extend my health span, extend lifespan?

And this is something I have been asking since a very early age, and it was about a decade ago that I came to learn more about the field of longevity, the biological field longevity where things really took on a completely different direction.

Oh wow, wow. So those events that you had before, those seizures, do you still experience that? No, fortunately I don't. Technically, and I didn't realize this at the time, but technically I'm considered epileptic because I had a seizure, it hasn't happened since then.

I want to dig a little bit deeper into that. When you said you had brain tumor, did they remove it? Yeah, they did, fortunately. So I do have a scar that extends from my ear up to my forehead.

And yeah, the had to do emergency surgery. The day that they discovered it, it was on a Thursday. They were going to surgery that Friday, but there was a world-renowned neurosurgeon who was coming back from the Middle East.

He was doing surgery on a prince there and he was Coming back to NYU hospital where I was and we decided to wait until he returned on Monday so we went a few extra days, but the doctors didn't even want to Wait that long at first And then, yeah, they rolled me in, cut my head open, and they removed it.

And they had a radiation gun as well to be able to get some of the harder-to-reach parts of a tumor and then stitched me back up. Did they ever figure out what the actual root cause of tumor, why it developed?

Was there something genetic-wise or some kind of gene expression change that caused us to start growing? It's a good question. So my neurologist told me the chances of this recurring are equal to the chance of it having happened in the first place.

In other words, you have no predisposed expectation of having another brain tumor, but I couldn't accept that. I was curious and I didn't want to risk it happening again, so I started to research it myself.

And years later, now we're talking about my early 20s, I got 23andMe genetic analysis done. It doesn't do the whole genome, but enough of it. And then I was able to export that data into different tool sets, and I able then to find specific polymorphisms that I have that actually increase the risk of a brain tumor.

Not by a dramatic amount, let's just say instead of one in 1,000, it went up to one and 500, which didn't fully explain it, but it brought me comfort in knowing that I had at least part of the answer as to probably why I ended up with the brain tumor.

Yeah. So I'll tell you, I've had one captain that used to work with at the fire department who had a brain tumour and had to go under the knife. And then I have another friend that looked like she had brain tumors and fortunately, the day of actual surgery, brain surgery They saw that when they wanna go do the other scan that it was no longer there and she didn't have to go under the knife.

In both events, because I know both of them personally, I told myself, man, one thing that I don't want is to ever have go through brain surgery. So I can only imagine you going through that, how that has made you really conscientious of your health from the inside versus how you said where it's superficial.

Those events, what actually, tell me about the time when you decided, you know what, I'm gonna develop this supplement. Where did that come about? It took a while.

So I've always been into, as I mentioned, health. And in my 20s, I got into supplements and experimenting with them. I'm not crazy about the term, but a lot of people hear biohackers, like that whole concept, right?

That idea of trying to achieve a specific goal and tracking it with data, or a ring, Apple Watch, and other devices. so I go into that mindset in 20, About 10 years ago.

So I'm 40 now. You don't look 40. Whatever you're doing is working. Thank you. About a decade ago when I turned 30, I came across this scientific paper in a journal called Cell.

That paper is called the Hallmarks of Aging. And that really transformed my thinking about aging because that paper, it's now considered a seminal paper.

Discovering aging biology and the hallmarks of aging

Everyone in the field of longevity research, all of the scientists and the medical doctors refer to that because it identified what's known as the mechanisms of aging.

In other words, the biological root causes of why we get older in first place, humans as well as other animals. And at the time, they recognized nine different mechanisms.

Those same authors have since republished the paper a year ago and they've added three more. So now there's 12 mechanisms of aging. And some of these you're familiar with and your audience is familiar and others are new novel concepts for most people.

For example, things people are familiar are mitochondrial dysfunction. The power plants of our cells that convert the food that we eat into the energy for the cell to be able to perform its function.

or stem cell rejuvenation, right? So our stem cells which create copies of our cells, as they get older, they either die off or they don't make perfect copies cells anymore, almost like a photocopy of a photo copy of the photocoop, eventually it's not- It's faded out.

Exactly, so similar things happen when these stem-cells get old, but then there are lesser known mechanisms of aging, things like, for example, cellular senescence.

So these are zombie cells that start to accumulate in our tissue and our organs. As we age, they increase

exponentially. It's one of the reasons our skin wrinkles and they secrete these inflammatory molecules that can cause inflammation in and then those inflammatory molecules can lead to additional senescent cells.

So these are just three of the 12 different mechanisms of aging. But learning about these, first of all, was eye-opening to me, which from the perspective of, I think most of us just think of ageing as a black box.

It's just something that happens. We don't fully understand it, but scientists are really dissecting it getting to know why we get older in the first place.

So that was eye-opening. And then the second thing was I came to realize that aging is malleable. It's something that you can speed up or you slow it down.

Most of us know intuitively you could speed-up aging. Like if you smoke a pack a day and you're drinking excess alcohol and your not eating healthy, you are going to age faster, your gonna look older, and most likely you will unfortunately pass away much sooner.

But it's not as intuitive that you can slow down the aging process. And I don't mean simply by like being healthy. There are different things that can be done that slowdown aging more effectively than other things.

So that's when I realized that there is an opportunity here. As it relates back to my brain tumor, the reason I really got interested in it is because the number one risk factor for cancer and heart disease and Alzheimer's and Parkinson's.

And you go down the list, glaucoma, diabetes, sarcopenia. The number one risk factor for all of those diseases is aging. Even more than cigarette smoke causes lung cancer, aging does by about threefold.

So if there are things you can do to slow down that aging process, put the brakes on it, then, theoretically and actually practically in animal studies, we find that you then reduce the risk of those diseases and the result is a longer health span, so the period of life lived without a disease, and, the consequence of that is longer lifespan as well.

Right, right. So there's a few things that you just said that I want the listeners and the viewers to keep in mind, and you said the word senescence. You talk about the senesen cells.

In the world of functional medicine, age management, that's an important thing to understand of those dying cells from aging, right? I'm actually a buddy of mine, Steve Teban owns senescence.com, And I've seen in the years go by, he's actually looking to sell it, last time I spoke to him, and the price of it has gone out the roof.

But we have a tremendous amount of physicians that tap into our network, our IV products, that we sell them over 4,000 doctors that listen to this podcast.

And a lot of these terminologies, when you're talking about inflammation, senescence, oxidative stress, it's important for people to understand that a lotta the different treatments that were doing in a world of functional medicine is to actually correct some of these issues for longevity purposes.

The other thing that you brought up is how you're very in tune to your personal health data. I see you wearing an Oura Ring, right? And you got your Apple Watch also.

So I'm big into, I don't have my Apple watch on right now, but I do have My Ouran Ring here. is understanding your own personal health data. So part of that, you guys have a age test, right, which allows people to really understand their own, personal data when it comes to their biological age.

How is that test done? How does it work? You know, how do you validate this test? Let's talk about that. So a couple of concepts first. So another one of the mechanisms of aging is the epigenome.

The epigeenome is this layer that sits on top of our genes. Okay. And the genes are what's hard-coded. We get it from our mother and our father, right?

So think of your genes as like a piano. And then your epigenome is the music that's being played on that piano. So it's almost like the pianist that playing the piano, and when you're young and you are healthy, it sounds perfect, the Music that is coming from that Piano.

But as you get older, certain keys are accidentally pressed and the rhythm isn't perfect and so on. And so what that essentially translates into for our genes is that certain genes turn on, that shouldn't be turned on and other genes turned off, they shouldn be turn off.

And then based on our lifestyles, you're also triggering certain genes to turn on and off. For example, if you smoke cigarettes, certain jeans are going to turned on as a consequence of that cigarette smoke trying to detoxify the body.

So scientists are able to detect things in your lifestyle based your epigenome, but can also detect how you are aging biologically. And so when we think of age, we have two of them.

We have chronological age and we biological age. So chronologically age is how many birthdays you've had, right? That's what everyone thinks of as age but this new concept of biological is essentially how old we are on a functional level, at a cellular level at an organ level and a whole body level.

Depending on which algorithm is used because many scientists have created many different algorithms But depending on the algorithm what you can essentially calculate is your morbidity risk So so your chances of disease your mortality risk and then even quality of life metrics, right?

so if you have a lower biological age, you're more likely to be able to and stand up without assistance and have strong grip strength and be able to have a high gait speed and move quickly and Have a great memory and focus and concentration and so on things associated with being younger So how do but where do you guys?

What data is utilized to figure out what your biological age is with the test? Is that is there like a pool of population pool that's being utilized from other people's tests?

How do figure that out? Right, so first thing to say is that many people use the term biological age very freely and they refer to it based on other markers.

For example, someone might measure your VO2 max and compare it to other people in the population and say that based your vo2 Max, you have the biological of someone 10 years younger, but that's not exactly the best use of the word biological age, because what's really the case in that scenario is that your VO2 max is higher than people your age and is the average person who's younger than you.

Which isn't really looking at all of your organs and how your genes are functioning, which is much more holistic for our whole body. It's just one cardiovascular marker.

So the way that the biological age test, at least the ones that are most respected in the scientific field, they're the most advanced available right now, function is by looking at the epigenome.

And so you're taking a blood sample and then you can look at methylation status of your genes and which genes are turned on and off. And for them to create the algorithm in the first place to your question, they need to take large data sets of many people and look at all different factors so the better biological age clock algorithms have looked at many different markers of health and phenotypes as they're called.

So essentially like the status of the person and their health status of this.

Biological age testing and epigenetics

So for example, grip strength and sit-stand test and the white matter and gray matter in the brain from functional MRIs and a whole slew of tests and then being able to use that to then develop advanced algorithms that are going to be predictive of how capable you are in terms of your health based on these larger data sets.

So since you guys got into business, like how many of these tests have you actually ran? Well, the exact number is confidential, but we've got thousands and thousands of people.

So this is all good stuff because data is so important. When people do this test, are they repeating the test to see how they're improving down the line?

Yeah, so, well, it depends. Many people are. Some people take the test initially just out of curiosity to see- To get the baseline. To the get baseline and to say, is my lifestyle healthy and is biological age in a good place?

And then other people will take it multiple times to if the changes they're making to their routine are actually having even more favorable effects on their biological aging.

Or what we have in our test kit is also biological pace of aging, So that's the trajectory of your aging at any given point in time. So you might be, if your result is a one, that means that every one chronological year, you're aging one year biologically.

If it is 0.8, That means you are aging 20% slower than the average person. And if it's 1.1, You're ageing 10% faster than average. And the nice thing about this is that it's forward-looking.

It's basically what your lifestyle for the last three to six months has added up to, and this the trajectory you're on for your biological age, whereas the more traditional biological-age outputs, which will give you an actual age number, is more based on a lifetime of history.

And so you can still change those, but it is harder to change than looking at the pace of aging. So when people get that, then yes, they oftentimes have motivation to change their lifestyle, maybe add certain supplements into their routine, uh, may be change there diet, their sleep routine their stress management, there exercise and recovery, all of these play a role in it.

Right. And then they retest after say, we recommend at least six months before you retests to see if it improves. That's pretty cool. So, so you know, with all these different type of testing, um, you're starting to a lot more people in the world and the public's eyes, doing a lot of these testing.

And you and I were talking backstage about Kim Kardashian doing some of this tests. So let's talk a little bit about that. Sure, so the Kardashians on their TV show have just recently announced their biological age results in their rate of aging.

They're actually using the exact same tests that we offer at Novo. It's the same laboratory that performs our tests, that performed the tests on that episode.

And so they were able to see that they're aging slower than the average population. And that makes sense because they are probably eating a healthier diet and they more physically fit and their physically active.

It's very much the LA lifestyle that we're living is going to be more conducive, generally speaking, to aging slower. If you compare that to other parts of the country where people aren't living as health-centric lifestyles, those people are going be aging faster than average.

It makes sense, I'm not surprised that the Kardashians are aging slower than the average population, but there's probably a handful of other things they could do to have even better scores if we really dissected some of the things that they're doing in their lives.

Get them some these products, right? We gotta get it in our hands. So do you follow Blue Zones? I don't closely

follow them, but I'm quite aware of them.

In fact, I was going to go to Sardinia last month when the plans changed. What do you think about that? Because we're talking about people's, how they live, their lifestyle, and what they're eating, if they are exercising.

Environmental toxins is a big part of it as well, too. When you start hearing about these blue zones that are out there, people are eating purple potatoes.

People are living longer because of purple potatos. What are your thoughts on some of these blue zones? So I think that there's a few things that that we need to keep in mind first before we even dig into the lifestyles there first is that Oftentimes there is common genetic traits within these Blue Zones Loma Linda, California is perhaps an exception to that but when you look at Sardinia and other regions in Costa Rica, in Greece, Ikaria, and in Japan, there's a lot of similar genetic pools in those regions.

Now, I do want to say that when it comes to longevity, it's, a vast majority based on lifestyle and environment, about 70 to 90% is lifestyle, an environment and only 10 to 30% Is genetics.

But when you look at centenarians and super centenerians, people living more than 110 years, That's where genetics takes a larger play into that exactly.

So they're more in that 30% plus Category whereas for the average person that might be more like 10 to 20 percent genetics. What's your goal? for lifespan?

I would love to get to 100 years old and have the option to be healthy enough to like, all right, I wanna go another 20 years. I want to go to another 30 years, but I'm not the type who's like I wanted to live forever or I'd want live until I was 250. Let's check back in when I am 100. That's 60 years from now.

And then I have flying wheelchairs back. Life might be absolutely amazing at that point, in which case I'll wanna live as long as I can. I saw a video yesterday, actually, Dave Asprey said that he's gonna live to 180. I'm like, wow, that's a big ask.

But listen, if he could do it. It's just that these numbers are just kind of picked out from the sky. Where do you get 180 from? Why not 150, why not 200? And if you talk to serious scientists in the field, they will acknowledge we have a long way to go to be able to get there.

So what we're talking about in that case is increasing maximum species lifespan. Right now, the maximum life span for humans is 122 years. The record's held by a lady named Jeanne Calment.

She's a French lady who passed away not too long ago. And as far as we know, that's the max that a human is capable of living. Now, if you look at the hardcore longevity scientists, when they think of the word longevity, they're not really even thinking about like increasing health span for the average person.

They're literally thinking of increasing maximum species lifespan. And to get that 122 number up to 125 to 130 to 150 and so on. And that's what we see in scientific studies.

If we look at, for example, animal studies, mice, and we the lifespan of mice and then we have these different interventions, it's always about looking at hey, can we actually outdo caloric restriction or the prescription drug rapamycin.

These are two of the more significant interventions that have extended lifespan in mice more than others. And so that the standard that we then compare all of these other interventions to.

I'm more pragmatic about it and our company my company novus is more problematic about which is let's extend health span for people and By extension of that when you increase healthspan Lifespan will follow so right right if you're not getting if normally you would get sick at 60 and then you pass away at 72 And instead you don't get

second till you 75 then you pass away at 77 or you know more optimistically you don't get sick until you're 85 and you Pass away At 87, you can increase these numbers like that is more Practical pragmatic because I think people want to live very long lives as long as you have the caveat that they're not going to be sick during that period, that they're going to be able-bodied, self-sufficient, not require assistance, and fully present in their mind and their body.

If you can give someone all of that, then most people don't wanna go. And with me, it's like longevity, yes, nice, but good health and good quality of life is important.

Because listen, I don't want to live to 80 if I'm going to be a vegetable and my brain's not working and I can't think or speak or remember anything. I would want good health and good quality of life.

You know, go out to dinner with your loved ones at 8 p.m. and stay out until midnight on a Friday night or later, right? And enjoy life and experience it.

Maybe have a glass of wine, maybe have that pizza that you've been craving, whatnot, there are some people in the field who have highly restrictive lifestyles where they have their dinner by 12 noon and they're only eating within a two hour or three hour eating window.

And they eat the same exact foods every single day. They go to sleep at 6 p.m. and all of these things. That's not living in my estimation. It's only about quantity of life, it's about quality of live as well.

And so my question is, how can we optimize both of those, right? We don't wanna sacrifice too much of either. And if you think of Pareto's principle, the 80-20 rule, How can get 80% of the benefits while only having to sacrifice or invest 20% to achieve those?

Right? You know, that kind of goes to like, you know when you get so picky about it has to be at this time.

Blue Zones, lifespan goals, and quality of life

And it's almost like a whole nother level of stress now that, yeah, like when I used to do bodybuilding, you got to measure everything out down to the little grams and you're scaling everything.

I did it for the competition, right? But that's no way to live. For me, it's like, I just want to know the healthy things to eat, you know, portion control, kind of see it with my eyes, but I don't want have to weigh out every single thing that I eat.

You know? Count the exact amount of almonds that i'm going to need as a snack. It's crazy. To me that is not a good quality of life. Yeah, it's not long-term sustainable.

You know, like if it to your hobby and you're into bodybuilding and You're gonna do it for two years five years, whatever it might be That's that's great.

And that your Hobby, but that not something you going to be able to sustain until you 80 years old and 90 years. It's realistic right? So the question is for once you get beyond that hobby or that profession how do you then live your life?

And you need to be able to balance it. And one of the things you mentioned was it can induce additional stress. So that's one point to focus on, and the other is relationships.

When we look back to the Blue Zones, these long-lived people, we also have to look at their lifestyles. They have low-stress lifstyles, And they are also very engaged interpersonally.

They have very strong community engagement. For example, in some Blue Zones, the grandparents are caring for the grandchildren while the parents are off to work.

And the grand grandparents, you know, are outdoors and they're with these young children. So they feel that young energy and the positivity and happiness that comes from that.

and they're not living these very high stress lifestyles. I mean, I used to live in New York City, and my first job out of college was in private equity, investment banking, like, you know, your working from 9 a.m.

until past midnight, midnight. That's high-stress, for sure. Yeah, working weekends, very, high stressed. And I lasted one year before I then turned to entrepreneurship, which is actually, And as you age and mature, you find ways to be able to cope with it and you set everything in relative balance.

Like I look at one of the tools I use for myself is I looked back at me having a brain tumor and then also look back at me losing my mother to cancer.

And I look at the stressors I'm going through and I ask, is this really harder or worse than those stressers were? No, it's not. After those stresses, I smiled and was happy and had great times in my life and so on.

In other words, those structures eventually dissipated. and I was able to be happy again. And so why should I expect that this stressor is any different, especially because by comparison, it's not that bad.

So that kind of sets the context relative, and that really helps me to move on, as well as my dog, Mia, who you just met. That's a beautiful dog. Collie, smart dog too.

All right, so let's jump into the product. Let's talk about, the first one that I tried, when I connected with you almost a year ago was the NMN product that you guys have.

So in one of the things that I personally noticed taking it was more energy, right? And I felt sharper throughout the day, you know, like just my brain, And I'm big into like cognitive health, you know, so I use different products, everything from NAD and R.

And when I started taking it, who knows, I thought, okay, maybe it's just in my head. Then Dr. Davis started talking and he's like, dude, this is a good product.

put me on the phone, let's get on a call here, put on me the on phone with them. So let talk about it. Sure, sure, so that product, it's called Novos Boost.

It's one single ingredient, NMN, nicotinamide mononucleotide. I'm not gonna try to say that. Yeah. It's a tongue twister. A lot of people call it MNN, like M&M's, but it's NMN.

And it is a precursor to NAD. NNAD is involved with the Krebs cycle. So going back to the beginning of the conversation, we talked about the mitochondria, the power plants of our cells.

So the Krebs cycle takes place there and it's converting the food that we eat into energy so that our cells can function. And NAD is a critical component of that.

As we age, our N. A. D. levels go down. NMN is the direct precursor for Nad. So by ingesting the NmN, we can increase our Nad levels. Now a common question is, well, why don't we just eat Nad?

And the reason is that we can't absorb it orally. Now you can get it through IV. That's one way to do it. And IV is great to get high levels of it, the only thing with that is you then need to maintain those higher levels.

So in between visits, having something like NMN is a great way. It became very popular because the longevity scientist at Harvard, Dr. David Sinclair, who's somewhat of an influencer in the field, He did research on it and he shared a lot of information about it.

He's been on the Joe Rogan experience and so on talking about NMN. And in addition to being able to help with

energy production, which if you think about that, like our brains require 20% of our body's energy so that might explain why you found more energy from it in that sense.

It's also something that can lead to the production of these enzymes in our bodies called sirtuins. Sirtuins can repair our DNA. Our DNA is constantly being damaged.

UV rays, for example, and pollution that we breathe in and even just metabolism or metabolic processes can cause damage to our And so these sirtuins are repair enzymes, proteins essentially, and NMN is able to help to produce more of those sertuins.

Is there any effect on your telomeres? So I have to check specifically, I don't know offhand, but it would make sense because if you have less DNA damage, your cells are going to be healthier.

If your cell are healthier, they're not going be damaged to the point where the body needs to remove them and recycle them through processes like autophagy or apoptosis.

And your telomeres are essentially getting shorter each time the cell needs to be replaced, right? So every cell replication process, telomeres get a little bit shorter.

So telomares are the end caps of our chromosomes, they protect all of out DNA, and so as you replicate a cell, it's getting a bit a shorter every time.

And so it makes sense, if you're not having to replace your cells as often, because the DNA is not damaged, then your Telomere should by extension not get shorter as quickly.

Right. You know, Chris, one of the things I really appreciate hearing you speak here is you really go into the science behind this. And this is something that has truly been missing in the allopathic world where I don't see that many physicians in traditional medicine.

where they actually start talking about methylation, the Krebs cycle, you know, your metabolic pathways. Like that's how your body functions. That's your bodies biochemistry.

So, when we're talking these different supplements, how they work, this is not something that you're just walking into like a grocery store and just buying it off the shelf.

There is science behind what you guys have done here. And, you know, I've had the opportunity obviously to dive a little bit deeper than just looking at the website, obviously the relationship that we have here, but you have a lot of scientists and doctors and you research happening at universities.

So tell the viewers and the listeners about some of the science that you guys have and research that continue to do. Sure. So to your point about doctors and the approach that they tend to take, like doctors are really focused on, I mentioned the word before, phenotypes.

This is essentially the manifestation of all of these processes. What does it then result in? How are our organs functioning? Is there something wrong?

Let's try to fix it. Whereas scientists are oftentimes trying to figure out the root cause and look at the mechanisms, the things that are happening microscopically to understand all of these processes.

And both are important in their own respect. We as a company have taken the approach of starting at these fundamental scientific side of things, these biological processes, and then working our way with experimentation to then determine whether we're having favorable effects on the phenotype, so on organs, on tissue, and on whole body.

So that's the approach we take. We start with experiments on a more mechanistic level. Studies we've run, for

example, with our Novus Core product, which we haven't discussed yet, but this is our flagship product.

This is the strongest of our product formulations. The first study we ran looked at DNA damage from irradiation. So think of like, for example, UV rays are irr radiation and DNA damaged causes things like skin wrinkling.

And so we were able to show that we could reduce DNA by as much as 77% from a radiation, which the lab that ran the study had done $7 million worth of studies prior to us with pharmaceutical drugs, with individual ingredients, including individual ingredient in our own formula.

And none of them had the same effects that ours. We had greatest effect of all of the studies they've ever done with the $7 million. That's amazing. Second study we did was again looking at DNA damage.

This was done at University of Bologna in Italy. And the researchers administered two different chemotherapeutic drugs. So one was moderate intensity, the other was very high intensity.

And as opposed to oxidative damage to DNA, with chemotherapeutics you actually, you mutilate the DNA. You actually have what's called single strand breaks and double strand brakes.

If you think of the helix of, of DNA it's breaking them. And so chemo, as anyone who may have had chema or know someone who does, it is really destructive to the body, including healthy cells.

Novos Boost, Core, and Vital supplements

And we were able to protect a significant number of those cells. This was in a human cellular study. We did another study that looked at cellular senescence, which we talked about before, the zombie cells, and compared to the prescription drug rapamycin, we've talked before.

It's the gold standard longevity drug because it has the best effects of any drug ever studied for extending lifespan and health span. we were able to reduce the size of senescent cells by the same order of magnitude as rapamycin, and we're over the counter, rapomycin is prescription.

We did another study at the Salk Institute in California, where we looked at this process called oxytocis fereptosis. Oxytosis feroptosus is associated with Alzheimer's, Parkinson's cancer, I believe even metabolic disorders like diabetes and high blood glucose.

And we were able to reduce the levels of ferritosis, oxytosis by more than half as effectively as a prescription R&D drug that's not even released yet.

It's being specially formulated to target this process. And were more that half effective as that drug, again as natural substance. We reduced cellular inflammation in that same study.

Then we did a mouse study, which I can't say too much about just yet, but we were able to show that we could successfully extend mouse lifespan by a very significant margin.

We'll be publishing that soon. And then we do the human case study where we administered our product, NovosCore and Novo Boost, so two of our products, to people age 39 to 77, males and females, half and half.

again the epigenome and looking at the biological age, the rate of aging, by the equivalent of one month per year. And for the one quarter that did not slow down their aging they also did speed up.

So you would expect some people might have been living less than ideal lifestyles during that six month study and nobody sped up, so that indicates there's a potential that we're actually even being protective for those people.

That's awesome. These studies, if people want to read them or get more, where are they, were they published? So if you go on our website, novuslabs.com, and then you mouse over the science section in the main menu, you'll

see an area called studies and you can see all of them, the summaries of the them in links.

Which we'll include the links below on the podcast and stuff so people can get quick access to them. That's awesome. So all right, so we were talking about the Boost and mentioned slightly the Core.

Yes, these are the products. This is Boost. Okay, that's the boost. Just two tiny little pills per day. Then this is the core. So Novus Core is a daily drink mix.

It's 12 ingredients in one. And you tear it open. You pour it into water. For example, this an orange flavored version. Its naturally sweetened with Stevia, no calories.

But we also have an unflavored version for people that don't want Stebia. and you can pour that into like a smoothie or a juice. And this is the very first formula to address all 12 of the mechanisms of aging.

So all twelve of these fundamental causes of ageing we target all of them in this formula, the first in the world to do so. We filed for patents on this.

And this is what we've done most of the time. Yeah, I take that every day. I put it in water and everything. It tastes good, too. Now, you guys had…

I don't know if you still have one with no flavor also? Yeah. That's the unflavored. You can mix it into a smoothie or into juice. If you put in it water, it'll have a little bit of a taste, almost like a very light tea.

I'm not a fan of it in water. But if you put it into like a protein shake, a smoothie, juice, you don't taste it. Okay, nice. And then the third product is this.

This is our newest product. So this is Novus vital. So Novo's Vital are these tiny little chews. I like them. They're like a little snack. Because I'm not like, I don't eat a lot of sweets and stuff.

And I always reward myself. So now this has become like my little reward. That was the intention. When we're creating these products, we are not only thinking of the very health minded people like you and me who are okay with taking a dozen pills a day, right?

We're also thinking of the masses, of, the average American who doesn't want to take pills. And they are tempted by these hyper palatable foods, things that just taste delicious and they crave them.

So why not create something that tastes delicious that you can crave that's actually really good for you? And for people who are well-disciplined like you and me, who we're not having desserts most of time, this is something like a nice reward.

are already having the sweets if you can like substitute some of those out for these sweets, at least you're having a favorable effect on your health.

So I've actually have heard from the team at one of our clinics that the few patients that they've initially put on the product, that it's supposed to last them a certain period of time, and they're asking for refills sooner than what they are supposed too.

So you know that they taste good, right? So that's one of the things we also saw with some, I helped a buddy of mine develop some nutritional, very healthy gummies called Excite My, just regular supplements in them.

And before we started offering these gummy products, and just like the oral ones that we have here with Novos, is people would go for like, they'll buy a month worth of oral supplementations, it'll be like two months later and they still have them.

And now it's like they're the opposite, which is good because that means they are compliant, but at the same time

we don't want people overdosing on it either.

The ingredients inside of the product. Let's talk about it. Sure. So first of all, the difference between Novus Vital versus the other products is that this product is formulated to focus on specific organs that decline as we age.

Brain, eyes, gut, right? Yeah, yeah, exactly. So there's seven organs that we target and we want to help you optimize those organs as they start to decline as we get older.

For example, brain, eyes, gut, heart, liver, kidneys, and muscle. So there are seven ingredients in here that can target all of those. So for example, trehalose, which is a very unique form of sugar.

It's not like a typical sugar, and it can have a lot of health benefits, including increasing levels of autophagy. And autofagie is this cellular cleanup process.

That happens when we fast, for examples. Right. Trehalos is very, it's a sugar that's found, in mushrooms, if you taste very slight sweetness in the mushrooms it is from the treholose.

Interesting. We've got inulin. Inulin is great for the microbiome. Raw apple cider vinegar. So we have a very significant dose in here. If you think of some gummies on the market that advertise apple cider vinegar, they're giving you a fraction of what you actually need.

This is a significant dosing. And so it can help you with the metabolic process with digestion and so on. That's really based on acetic acid, which is the acid that's found in raw apple apple, cider, vinegar Rudin and lutein, so these are great.

Sorry, rudin is great for muscle. It's an antioxidant. Luteine and zeaxanthin are good for the brain and the eyes. So, for example, the pigment in our eyes as we age decreases.

As a result, our vision declines. For example, in a study, they were able to find that people who supplemented with lutein and zeaxanthin, had better night vision.

Really? Yeah. Interesting. And then finally, natto kinase. Natto is found in the Japanese fermented soybean called nato. And so natokinase is an enzyme that's produced through that fermentation process.

And natto has really promising cardiovascular effects, everything from blood coagulation and even the calcification of arteries and so on. So if you do some research on nato, you'll see a lot of really- Yeah, I know that Dr.

Davis got a little excited about that ingredient, obviously being an interventional cardiologist. All great stuff. So these three products that we mentioned, are we, I know the answer to this, but I want people to hear it.

Are we doing just one of them or is it doing all three? Yeah, so it depends on if you want to go all in and have all of the health benefits, then yes, you all three.

I personally take all 3. Same here. My family member is great. If you wanna just get started and you're only going to take one product, I would say that should be Novo's Core.

Okay. If budget is an issue and you can only afford a less expensive product, I would say maybe start with Novo's Boost. Novos Boost is very simple, easy ingredient to introduce into your routine.

How much does this typically cost when we're talking about budget? Yeah, so Novoscore is, as I mentioned, it's like 12 supplements in one. If you buy just one single month supply of it, that's $109. The prices can go down if you purchase multiple at the same time.

Boost is $44 per month, and the prices can go down if you subscribe to multiple. And then Novos Vital, I'm forgetting the number off the top of my head, but I believe it's $59 for one single month.

Again, prices could go up. So roughly 200 bucks, take care of your health. Honestly, you know you can't put a price tag like that on your health like your help is too important I always tell people the most valuable currency on planet Earth that you wouldn't trade out for anything is your So you have to invest into it because people are so easy to go spend money on you know, junk food or, or going out drinking for happy hour, something that's going to cause severe oxidative stress, right?

That alcohol versus something like this. That's gonna actually enhance the way you feel, the, what you look, that way. You think your energy levels, you, know your performance will be on point, especially for a lot of people that are, biohacking their health.

A lot athletes like, this is good stuff. This is what they need. That's a great point. So first, you're right. Like a lot of times people are spending $109 in just a week of buying Starbucks or going out for drinks one night, they spend 109 or more dollars, right?

So if you look at it that way, this is good for your health. And in that sense, it's not very expensive at all. But second, It's important to think about the short-term benefits.

It not only about these long- term longevity benefits that we've been emphasizing, But people that take NovaScore, the most commonly reported benefits from it are, number one, improvements in sleep and energy as a result of better sleep.

Number two, improvement in mood. So people who tend to be a little bit more anxious or their minds are all over the place, this can help to calm people down and help them focus.

And there's a few ingredients that we can talk about as to why that happens. And then number three is improvements with skin health. So we have some ingredients in here that can help the skin from the inside out.

People are typically just applying topical formulas, and that gets into the epidermis, but it doesn't get into deeper dermal layers. And when you take some of the ingredients that are in the NovoScore formula, and you have it internally, it makes its way into the skin from the inside out, and people report better complexions after one to two months.

In fact, we did a preliminary study, I didn't mention earlier, where after six months of use, you found on average an improvement of skin firmness by 22%.

That's pretty cool. So this is great for even you know, like liquid Vita We have wellness centers where we're focused more on the functional medicine side But we also have a whole division where you do a lot of medical aesthetics and for a Lot of these physicians that are tuning in that have Wellness centers to have med spas This would be a great supplement for their aesthetics patients as well.

Scientific studies, app features, and future plans

Oh without question so how do we help the doctors that are wondering how did they properly implement this in their medical practice? How do they start?

Great question, so first is a question of whether they're interested in offering biological age testing. That's one area that… I feel like that's a must, like they really should.

Right, right. And so the biological aging testing is great to get people to understand where they stand on that epigenetic aging dimension. What we haven't talked about is that we also have a mobile app that recently launched.

It's called Novus Life. Available on iOS and Android. And we have three primary features in that app, all completely free. But I think practitioners can actually benefit from this as well if they have their patients use this.

and then they can collect insights about their patients and guide them based on it. So the first output is biological age based AI. As opposed to it being based the blood sample, which is the best way to do it, we have one that's based in AI from a questionnaire and it's trained on a data set of tens of thousands of people and its actually found to be very accurate.

more accurate actually than the first generation epigenetic blood tests like the Horvath test. So we provide that first. The second thing is a lifestyle score.

We can tell you how conducive to longevity your lifestyle is and we can then from there make personalized recommendations. This can be helpful for practitioners to really be able to pinpoint whether the areas that the patient can use the most improvement in their daily routine to improve their health span and lifespan.

And then can guide based on that. Then the third is we've integrated an LLM, which is essentially like a chat GPT, into the app which has trained on longevity data and the content that we have on our website that's written by PhDs and MDs.

and that then gives the patient the ability to ask questions and get some answers and direction in the meantime. That's pretty cool. So these are some of the things that we offer and then getting or having a patient go from taking these tests, either the paid version or with Novosage or the free version.

And then integrating the recommendations that we make through the app experience, as well as integrating our formulations and then perhaps retesting after six months to 12 months.

The only thing to be considerate of if you do it within six month is seasonality. So people's lifestyles can change dramatically like Christmas time versus July 4th, right?

Like very different lifetimes. So just be mindful of when that person is taking the test because there are confounding factors that you wanna try to minimize.

And so if you take the tests in the same month each year, that's going to minimise it, but a lot of people wanna test sooner, so just being mindful about that.

So the app, is this part of it now or does it connect with your wearables? So wearable, s that actually one of our next features. Okay. a couple of months we'll have, in fact, we're doing beta testing internally right now, so just yesterday they asked to connect with my aura ring, my dev team.

So yes, that's going to be integrated, and what will be really cool is that we will then integrate the chat GPT instance into your wearable data, you know show me my activity on a chart compared to my sleep numbers or my Sleep Metrics on the chart for the last six months and it can show you and then say like what would you recommend I change about my Activity and my sleeping it and look at that data and that's pretty cool.

That's like very forward thinking what you guys are doing. So with the app and the wearables, when you bring that version two of that app with a wearable, does that feed into your actual age test as well too?

So the age test is going to be integrated into the app. Right now, it's not. When you get your age-test results, you can view it on the dashboard on our website, and we also produce a PDF report that you print out or look at on your phone.

But in due time, we're talking about probably, I'd estimate around late Q3, early Q4 of 2024, will then have the the age results integrated into the app as well.

Awesome. I mean you guys are definitely, since when I first met you, you have added new products, now you've got the App, what else are you up to? I know you got to have a few other things that you might not be able to talk too much about.

What I can hint at is that We're really, although we're over the counter and provide supplements to people, all natural ingredients, we are more like a biotech company than a supplement company.

Most supplement companies are really more on the marketing side than they are on a science side. We are a lot more of the science than we on marketing.

And so we running experiments at labs to make brand new discoveries. So rather than looking at ingredients that have already been validated and you can read about in scientific literature, We're trying to make brand new discoveries about combinations of different ingredients to then be able to create entirely new, unique, patented products that we can then deliver to our customer base at affordable prices.

That's amazing. So Chris, if you had to pick one influential person that you would love taking your product, let's say they come across our podcast, who do you want to see taking the novelist product?

Oh, wow. It could be any celebrity, it could a musician, someone that you would just love to see. Could have been someone you were watching growing up.

Oh man, I feel like in this politically charged environment, it's hard to actually give an honest answer on this, but all right, this isn't what I would normally answer, only because of what we talked about before and the Kardashians getting their biological age results recently.

I'd say let's get them taking Novus because then we can actually see the before-after and how they improve even further from what they currently have.

That'd be awesome. Let's make that happen. We'll do it, we'll get it to them. So awesome. Is there anything else you wanted to touch up on? I guess I would just say one thing, which is that what I found very empowering in this journey is to understand that aging is something that we have a lot more control over than most people think.

And there are many pieces to the puzzle. We try to uncover those pieces through our website with our blog articles that publish. on Instagram and social where Novus Labs is how you can find us where we share a lot of different pieces of the longevity puzzle.

Supplements are one of those pieces, but they're not the full story. As we talked about before, there's stress management and exercise and diet and recovery.

There's multiple different piece.

Closing thoughts on aging control and wellness

Advice being thrown to you from all different angles from different people with different motivations and so on and So we try to stay true to this to the science and we provide references scientific references for all of the recommendations we make and as a public benefit corporation most of The advice that we give excluding the supplement side of it is actually things that We can't even profit from so We hope that people come to our website, download our app, use the resources that we create for the general public to start to improve their health spans, improve life spans and slow down their aging process.

And Chris, what you guys are doing is a positive thing for industry, for community, everyone who is into health and wellness. And, you know, how you mentioned earlier, there's not just one thing.

There's that one magic pill that's going to make you live longer. At least not yet, right? And that is why here at Liquivita, one of the things that we do is we bring the best of best and bring it together to give our patients the type of treatments so they can get the results possible.

So this is something that the doctors that have their wellness centers, this something's that's gonna feed into your current treatment plans if you're doing NAD treatments, if your doing chelation, phosphatocoline, all of this stuff to

remove toxins.

If you doing cognitive health treatments. This is just something in addition to to enhance those programs. And that's something that not just the patients that are taking these supplements, but also the medical practitioners have to understand.

You want to bring good quality products to make sure you're giving someone that full circle. I agree with that Chris. I appreciate you coming on the podcast man.

If people have to find you Where do they find? You I'm on on social as slow my age and I also have a website slow My age comm where I share my personal results and my lifestyle and so on awesome or just Google this guy man He's all over the news.

That's actually how I came across he was like Man, who is this guy? He's making some moves. And then I look up, he's here in South Florida, in our backyard.

So you guys are doing it right, man. I appreciate you. Guys, make sure you follow, like, comment, share this stuff, follow Chris, and let us know what you think.

We'll see you for the next one.