Beauty Industry LIES: Why Most Anti-Aging Products FAIL l Debbi Barber & Dr. Jordan Plews l Ep #412 Transcript

(Transcripts are generated by AI and may contain errors)

Episode Introduction and Sponsors

Welcome back, everybody. I am Natalie Nidam, your host. Today's conversation is all about regenerative skin health with a deep dive into exosomes and stem cells with PhD in that department.

We also talk about what it really takes to keep skin functioning just like it did when we were younger. I am joined by Debbie Barber, a repeat guest. It's been a couple of years since she's on the podcast, but you're going to love her.

And Dr. Jordan Plews, the infamous PhD stem cell and exosome guy that I referred to at the beginning. What we do is we break down the biology behind copper peptides, exasome signaling, and the role that stem cells play in skin repair and resilience.

Now, if you happen to get the urge to try anything we discuss on the podcast today, you might just want to do that. You can go to VitaliSkincare.com and use code NAT20 to save a whopping 20% off their amazing products.

Now, this episode is brought to you by Nature's Marvel's natural bioregulators, Manucora Honey and Puri, the cleanest, bestest protein powder, and they actually have also other amazing supplements in their line, everything triple tested, all with special offers just for you.

See the show notes below for details and enjoy the shows. Welcome, welcome everybody to the show. This is a very special episode. I have with me not one, but two guests.

One guest is repeat guest, Debbie Barber from Vitali Skincare. Debbie, I think it's been a couple of years since we've recorded together, right? Right.

Founder and muse for the brand and self-made expert in this whole space. I mean, it is amazing your journey in. And then also we have Dr. Jordan Plews, PhD, who I believe you guys work together and is helping with new product developments, particularly a new project at Vitalian.

So we're going to talk about skin care and copper peptides and all the things. Thank you. So good to be back with that. Yeah. The good news is we have a girl voice and a boy voice, so everybody's going to able to tell when they say it.

But my first question is going Debbie. Debbie, can you just share with us what was going on in your life when you first realized that skincare could actually become a career for you instead of just kind of like a little side hustle or interest?

I need to talk to my husband about that because it was a passion. It really was just a fashion. And you know, Dr. Free is the one that introduced me to the copper peptide, the little foam that I use because I said, okay, you have all these amazing peptides.

What have you got for crepey skin? And she said, Oh, I can get you a prescription.

Debbie's Skincare Origin Story

I could get to, you know, GHK, see you and the phone. And the story there is for the first time, this phone that was not exciting, but after eight weeks, there's something to this that is different than these 300.

dollar jars that I have from Neiman's and all, you know, this is different. This is doing something. And so it really

was Terry's the one that decided that, we need to share this with more people.

I think that we can develop this and we could save money because you're paying too much to the compound pharmacy. That was one of it because it was expensive.

It was all about the costs. And so I have to give him, I don't know if it's the credit or the blame or what, but he's, the one that really pushed this into, we need to share this.

I thought this might last for a year and all my friends that play tennis and everybody that's waiting at the door will get some copper peptides. And instead, it just grew and grew.

We're now five years, Nat. I mean, this started from crepey skin, five-years, and it's exciting. And now I cannot learn enough. My head hurts. from studying and I know Jordan, I mean I wear him out with questions and then after the calls I sent him more questions, and he's been so patient to teach, but it's exciting.

It's excited to be almost 70 and having a whole new career that is totally separate and different from the career, you know 37 years I was in this marketing career and was not even that good in science.

I just want to invite the audience right now to go to YouTube and take a look at Debbie who's almost 70 years old. That's all I'm going to say. Go to youtube, find the podcast, go check out Debbie.

in quotations, almost 70 years old. Walking the walk, talking the talk. You're doing something right. Was there a moment when you felt that this wasn't just about beauty anymore, but it was really about biology and longevity?

Because you're so passionate about it. And yes, we all want beautiful skin. We want to look great. Although we want look how we feel. we wanna reflect that vibrancy, especially as we're aging.

But I think for you now, at some point there's a a flip that happened and moved into not just beauty, beyond beauty. The biology, but health. Yeah. I think it was about the health I totally.

Uh, I got to the point where the healthier I am, the healthy or my skin is the better. It's going to be more beautiful. And so that's why I talk to people about health and even if they use it and immediately they don't find benefits like, Oh, use this 10 days and I'm still whatever I say.

Oh yes. You're improving the health. Your skin is healthier just by applying this copper peptide and taking care of it and not putting junk on it, you know, not getting the bad stuff.

I mean, I feel as strongly about that. So yes, absolutely the biology and the more I study and more, um, hang out with people like Dr. Flu's. The more learn and then the questions you have and I just can't wait for the next product.

This one though, the most excited about for sure. Well, I mean, look, the GHK copper as a peptide is just so freaking fascinating. It's this minuscule little three amino acid with a little copper thing attached to it.

What is it, 4,000 genes that it resets? regulates that. And it's for skin and it is for brain and its for the gut and for nerves. There is no end. It is really high levels in serum when we are young and drops as we age.

Our ability to regenerate skin drops. Its just this amazing thing. This is almost like a hormone replacement. program. Absolutely. Right. Because you're restoring something to the body that allows the buddy to do the work that he was doing before.

Okay. So for Jordan, you haven't said a word yet. We've been taking up all the air. Oh, this way. This way? So what originally drew you towards regenerative medicine?

Like was it intellectual curiosity or some kind of personal, like was a personal health experience thing or what took you there? Yeah, I think most people who get into science are hoping to make a positive impact on humanity.

I did my undergrad in biochemical engineering, and then I worked for Pfizer in their bioprocess development group. And after about a year there, we're doing a lot to cover up symptoms.

We're fixing problems. cellular issues. And so that's what pushed me towards stem cell research and that is what I got my doctorate work in. It just really felt like that was the future here.

How do we understand the regenerative system of the body and what can we do to boost it, help it and support it? Love it. So when did you realize that regeneration could be applied beyond medicine and into longevity and skin biology?

It was really out of impatience during my postdoc. I was doing a post-doc on regenerative medicine at Stanford and I said, you know, I want to apply this science in a practical way.

And as you know, Stanford's surrounded with venture capitalists and people who want to invest. And I had people approach me for investment. When I told them it's a 10 to 15 year runway, probably 50 plus million dollars to get something through the FDA, their response was more or less like, what can you do in four or five years?

And, I said nothing. But then they came back and said, there's some aesthetic products here that are cell-derived. Can you better than this? And I did some umming and aahing over it and I said, yeah.

And so, you know, it's been about 10 years now that I've been developing these cell-derived topical products, but that's where it started.

Why Regenerative Biology Matters

Hey, folks, I just wanted to throw a little message in here for those of you who are sending me all these incredible questions on social media or through YouTube or even on Spotify, wherever you're listening to the podcast.

I wish I could get back to each one of your personally, but unfortunately, And because I cannot, I created, about a couple of years ago now, a membership community where I get to hang out with people just like you.

I do live weekly Q&As, almost weekly anyway. We also do have podcast guests come in to answer everybody's questions and do presentations, you get to interact live with those podcast guests.

We will sometimes do challenges with some of the partners. Like in 2026, we have a mitochondrial enhancement challenge coming up where we're going to be testing mitochondria function.

we are going be to testing people's deuterium levels. If you haven't heard about deutereum, We've got podcasts coming down the pipes on that. And then people will be invited to follow a personalized protocol and then retest their mitochondria on the other side.

We offer that in the membership community and we do it at incredible discounts that you just can't find anywhere else. So if you're interested in hanging out with me and other like-minded people, which actually happen to include some pretty awesome practitioners and even some previous podcast guests who've come and joined the community, then I invite you to check it out on my website natnidam.com slash the dash longevity dash community or just go to natnim.

com and look for the longevity community tab at the top of the page. Click on that. and see if this is right for you. I would love to see you there and we could make 2026 our best year ever together.

So once again, that's natnidam.com. Just look for the longevity community tab at the top of the page. Now let's get back to the show. Vitali was built around clinical strength copper peptides, right?

I mean that's your kind of, to date that has been your hero product. What was the moment you realized that there was still something missing, that it was another step?

Because you have, until now, you had a beautiful line of products that is really effective, it gets really great results for people. I'll never forget some of those before and after pictures of people's burns and stuff that you showed a long, long time ago.

When did you realize that you're like, you know, we could take this another step further? Yes. Well, it has to do a lot with aging and basically thinking about when we thought about the next product, what can we do to make these products work better?

You know that was one of the questions. What can you do that can make make it better even without these products. I mean, we wanted something. And one of the things in looking at aging and also stress, Jordan and I were talking about this earlier, there's this thing called stem cell exhaustion.

And so no matter how wonderful if your peptide signal is strong and it's going, but if you're stem cells are exhausted, they're not going to be able to read it.

And it is not gonna perform the way it used to perform. As I age, I'm thinking, how long is this gonna work? I am gonna be 70. It carried me through the 60s, it has been wonderful.

So really thinking about the stem cell exhaustion and how do we address that? What can we do with that. And in the study, I realized that exosomes seem to be the answer to that.

That really seemed to help the exhausted, tired, stressed stem cells be able to read the blueprint. You know happened to be a person who had researched this and we were just so fortunate I mean this was meant to because we we're introduced to him at the right time and I have to say we could not have found a Person who could have worked first of all just worked with us that let me just say that and patient with about how much we needed to understand.

But that is really it. It's because this addresses the situation when you're aging and the wonderful products that are still doing, like if you are 40, probably the GHK is working wonderful, sending the signal, your stem cells are working, but at 70, there, and you know, when I read this about the exhausted stem cell, I thought, I'm tired, they are tired.

Well, I mean, you're adding another signal, right? And I think that's part of where, when you have something like a copper peptide that is so powerful and you start to think about, okay, well, let's look at aging tissue.

And that really what you were saying, the signal is really important, but are the worker bees there? That is exactly, the factory workers need help, they're tired.

They need materials and they- Exactly. That's exactly it. So that is why we were, and we could have had three products by the time we had this product.

But nothing, that isn't, I mean, this has been a long journey, but it is, oh, it's going to be- And it so interesting to me because I think what happens very often, people think, well, if some copper peptide is good, And we don't think it's doing enough.

Well, let's just use more. They might have said, Let's increase the concentration of our serum. And maybe one of you wants to speak to this a little bit, but it seems to me that that's the equivalent of someone who's not speaking the same language as you and just talking to them more slowly and more loudly.

Like their capacity to do what they need to has been met. What they needed is something, a different tool to help them to their job as opposed to just bringing more of them on board.

I don't know who wants take that.

Jordan's Path Into Stem Cell Research

It's kind of a question, No, Jordan, I would say, though, that's about balance. I mean, this is about balancing. And I know that because of that man sitting there.

Really understood that. But, uh, yeah, one of the ways I think about this and, you know, kind of an analogy is if you had your Thanksgiving dinner, right, and you finished your turkey and someone walked in with two more turkeys, are you going to eat those turkies?

Are you gonna say like, um, full, most of us are full. But the next day, you're still going to be hungry, right? And I see a lot of focus on this kind of more is better mindset.

And yeah, to an extent, and you want to make sure you are getting an optimal amount. But beyond that, it's wasteful and it is more about spreading it out over time.

I do think in a lots of areas of biology, more it not better, that's just not how biology works. You were talking about hormone replacement therapy earlier.

If you went to a hormone-replacement doc and they said, well, I'm going give you 10 times the amount that that guy down the street is giving you, You should be scared, right?

Not excited. Run away. A hundred percent. I love that. So if copper peptide signal repair, what do exosomes signal that the, that, the peptides can't, don't or cannot?

Like what, let's, I mean, we talked about it a tiny bit a minute ago, but maybe you could position for us, What's the copper pep tie doing and what's exo-zone doing that's filling the gap or, or completing the job or whatever the case may be.

I mean, we can speak to this for hours, so I'll try to keep it simplified here. There was a paper that was published about six months ago that I'm a coauthor on where we looked at all of the proteins that were being produced by stem cells.

These are peer-reviewed studies that are out there and did a bit of a meta-analysis and looked that particularly the main sources of mesenchymal stem cell that is used like bone marrow, adipose, umbilical, right?

And you can see the overlap in the amount of proteins. And basically what we found was that, yes, there's a good amount of overlap, about 2,100 genes that are all the same.

But then if you look specifically at umbilical, which is often called zero age, and they haven't aged yet, these stem cells have about 2600 proteins that were not detected in the other forms of stem cell.

So I think this is an ongoing area of study to really delineate exactly what is changing over time. But there are now also other studies out there that have shown that younger cells are producing a different array of proteins and biomolecules than older cells, which most people say, yeah, of course, that's common sense.

A younger cell is different than an older cell. In terms of what is actually happening there, we can dive into the different proteins, the growth factors, cytokines, interleukins.

Generally speaking, when we looked at this from the angle of skin, you started putting them in different buckets. What we found was there was an enrichment, particularly in these very early young stem cells, around extracellular matrix proteins.

That has a big deal to do with how quickly you heal, how well you feel, right? You can think about this as kind of the mortar between the bricks where your cells are bricks and the different cell types.

If they don't have the right stuff to grab onto to move in when repair is needed, move into the wound or the damage. They just won't. And cells that produce ECM naturally better, like fibroblasts, are going to out-compete

them.

That's where you end up with a fibrotic scar, with extra collagen, usually collagen 1. It heals, but it's not quite as beautiful or as nice as it used to heal.

when you were younger, right? And so, I mean, again, we could dive in deep on any one of these things, but effectively the groups around immune cell activation, around extracellular matrix, or on things like MMPs, which often dictate how well or how much you scar, these are all higher, they're upregulated in these early umbilical stem cells and hence the exosomes that they are expressing.

Interesting. Well, it's interesting to me because I've used the Vitali serum to heal a surgical scar in the past, very small one on my chest. I used it with a bunch of other things, but I would imagine then from what you're saying, that if I'd had access to exosomes at that time, I was warned by every plastic surgeon who looked at this, you were going to have a scar, like a big scar.

If I have hairline very faint, if you are that close to But I wonder if I'd had the exosomes at the time, if that would have even enhanced the healing even more, right?

Because from what you're speaking about, there's other signaling pathways that might have kicked in. Okay. So let's talk about your partnership here. Let's about Debbie.

Like you said, you don't chase trends. And I know you, don' t chase trend. But what specifically made you trust, and everybody's talking about exosomes right now.

They're the new kid on the block. they're not even that new. What made your trust Jordan in this hype heavy exo-zone market? Because everybody is an expert.

looking at all that there's just so much hype out there and as the more I study this you know and Terry and I decided yes we definitely want zero age stem cells exosomes and so we said we need a stem cell researcher we don't need cosmetic chemist So, that was number one.

We wanted a stem cell researcher and Jordan had over 20 years, you know, experience in this. And that is number 1. But then second, he's a biochemical engineer.

So the beauty there is that not only can he do the research and, deal with the stem cells in the lab, in freezer, etc. but he knows how to take those signals and stabilize and put them in a bottle.

Why Exosomes Were Added to Vitali

and actually put them on a shelf without being lyophilized. And he may talk about that. That was really important because all of our products you can use, put on your shelf and you don't have to send in an ice chest or anything like that, so that biochemical engineer background just made him perfect for what we were looking for.

Love it. So, Jordan, when you evaluated Vitali, what made you feel confident that this wasn't just some other cosmetic brand trying to greenwash, whitewash science and spin it into something that it's not?

Well, you just heard such flowery language from Debbie. It's hard to say no to someone who's a sweet and at the same time, we share a lot of passions here.

I think we want to really make a difference and make products that work, make product that are going to help people. This is about improving skin health.

The analogy I often use is I feel like so many products, it's like taking a tree with brown leaves and painting the leaves green. And the obvious thing to do is just water the tree.

And so that's what we're hoping to be more supportive to the natural processes here. That's something we both shared. They're great to work with, so consulting with them has been amazing.

Have you ever had to push back on formulation decisions because of scientific integrity? Oh yeah, all the time. I mean, so many people think that they know this area.

And I've yet to meet a person that doesn't feel like they can go and make a product themselves. Exactly. That's the same analogy I use. When you go to a formulator, they're going to treat your formulation like they are making a batch of cookies.

They're gonna throw it all in and mix it up. And for speed, their gonna turn the heat up because they want to get to the next run. Their gonna blend it as fast as they can.

So I usually have to go in, and be like, okay, don't do that, let's do it in this order. And things that when you really understand it, it's common sense in a lot of cases, but you have to understand the business part of formulating products is speed and scale, right?

And so that's part the expense with making a good product, though, is making sure they're doing it the right way at the All right, so let's get into the science of source here.

We're going to talk about why zero age, why you pick those. You mentioned it a little bit earlier, but what does the biological age of an exosome source matter more?

Why does it matter than consumers might realize? There's so much You know, there's a lot of noise about this out there, and Lord knows. And misunderstanding.

Oh my God, you put five rich people with five different opinions, like professionals, in this room. I don't know if this is going to come out alive. No, we understand that also, by the way.

Yeah. So tell us, Jordan, why? This is something that in the last five years, I've spoken at a lot of conferences nationally, internationally on this, and I feel like the amount of misinformation has only increased.

It's like you're saying, there's a whole lot more people standing up saying that they know what they're talking about here, most of whom have never set foot in a laboratory before.

I'll start with the kind of common sense answer, which is that maybe when you were a child you fell off your bike, you scraped your knee. It happens to all of us.

Now recall the last time you had a similar injury. You might remember that didn't heal so quickly and maybe not so scarlessly as it did when That's kind of where we are right now is understanding that that system is going back to those younger cells and borrowing what their healing capacity, borrowing those instructions that are normally present there all the time.

And, you know, I started making products about 10 years ago with adipose derived stem cells, and that was usually coming from liposuction aspirate, right?

People, we were joking to call this the Fight Club model. You know they're giving away the fat. At the end of the day though, these are not the healthiest people typically, if you're getting liposection done, You're not usually the youngest, your not really the Healthiest.

Yeah. Your inflamed, got environmental and age related things associated, If you really want to dig into the science, I point you back to that paper I mentioned before from about six months ago where we're looking at this comparison.

There's clear differences in what you're producing at a young age versus an old age, and they do tie to known

healing repair pathways. They've even shown in a few studies that if you were to take the exosomes or secretome, the extracellular vesicles from an older cell, and put them on a younger cell, you not only don't get a benefit, but in some cases it can be negative because you're asking a young cell to run an old cell program effectively, when in reality you want your older cells to running the young cells program.

Either less than or equal to the age of your cells is what you are looking for in exosome. Exactly. Yeah. If you were to say, okay, I need a blood transfusion.

And the doctor came in and said, here's the blood of somebody who's older than you and less healthy than. Or you can have the blud of someone who is younger than and more healthy then you.

I don't think you need to be a scientist to know what that choice should be. Right. Yeah, 100%. That's a really good analogy. So what fundamentally differentiates umbilical derives exosomes from adult fat, PRP, or even plant cells?

Because plant cell are all over the place right now. Like the marketing claims that these guys are making. Where does the umbiblical cord population? And maybe we should spend a second just reminding people that we're talking about exo zones, not stem cells here.

That's a massive, massive distinction that I think, you know, and I've had a few people on talking about this, but I if someone's new to the podcast or they missed it, they went to get their snack last time while we were talking it.

I it's really important to lay down that foundation of understanding. We've mentioned it a little bit, but what is an exosome versus a stem cell? What's in this product?

And then what really fundamentally derives these umbilical derived exasomes from adult fat, PRP, or plant stem-cell marketing claims? Sure. Well, so for me, I just think back to when I was doing my postdoc, it was in a heart lab and effectively we were taking stem cells and injecting them into the hearts of pigs after they were caused a a heartbeat attack, an MI, and trying to fix the heart because heart disease is the number one killer and we want to take that, right?

And so I as part of a group that was working on that and, effectively, whether they put different types of stem cell in from different mesenchymal sources or took a stem cell and differentiated it into a beating cardiomyocyte, injected that in.

In most cases, you did see improvement.

Copper Peptides vs Exosome Signaling

But what really stood out to me was there were some groups where they were taking what was being released from the cells. At that time, we were calling it paraquin factors and things like that.

It wasn't being called exosomes at the time. That was put into an hydrogel, inject it in the heart, and that was often as good or sometimes better. And the benefit there was you can't put a stem cell in a bottle on the shelf, right?

Stem cells are growing in very controlled lab environment. You have to control the microenvironment, incubators, etc. has to be done sterile or aseptic.

So this is not practical. But the benefits here is that the exosomes are not alive. they're not cells and not dividing, they are just a packet of information and that vesicle, that exosome vesicles protecting those contents that are otherwise delicate.

And so that can be put on the shelf and saved if done correctly, right? And that was a big moment for me. You know, this whole shift is really, you know towards plant you're talking about, to me reminds me of the history of human stem cell research because the exosome stuff that we see today really was born out of humans stem cells research.

If you go back for a minute, you might remember George Bush banned a lot of stem cell research in 2001. That was overturned in 2009. But then you remember when that was over turned in, 2009, 2010, we started to see this huge influx of STEM cell derived products and people injecting STEM cells.

The FDA was not happy about a of this. because of regulatory reasons and the brand value of stem cells, we saw plant stem cell emerge. And then all of a sudden there's a lot of plant, stem, cell products.

So, you know, the short and sweet answer here is that most of the plant or non-human cell derived things here are trying to benefit from the band or the marketing of what was done with human sell derived products.

You literally cannot sell a human cell derived or often a cell-derived product in a lot of places around the world. So if you're a big brand and you want to sell something, you've got to have another option.

And I'm not going to say that plant exosomes are totally useless, but I don't think that they're really a comparator. It's like if I went in your front yard and broke a branch off your tree, you wouldn't go and run out to inject your blood into it to grow back the tree branch, right?

But many times we're kind of saying the same thing in reverse. Let's take this plant-derived thing and expect regeneration in humans. Yeah, that's really interesting.

I mean, there is a supplement out there that are plant exosomes, but the promise is not to deliver information to cells necessarily. The promise that that is how the plant moves a lot of the phytonutrients and things that we want access to.

And it delivers it at a cellular level because it's in an exo zone, which I think is really an interesting concept. So it is exosome trying to instruct human cells to repair, but it's a plant exasome delivering nutrients at a cellular level, which I think is a different…

It's nuanced. But basically what we're saying is that it is not just that younger exososomes are more active, it fundamentally that they're giving different, better, more youthful, regenerative direction to the cell.

It is reminding the cells, this is what you used to do when you were young, And the cell still hopefully has the capacity to do that. And if we look at Debbie's, I can't believe you're on a 70 face, clearly there's something to it.

Going into this, to the umbilical cord, H0 exosome, did that make the project more expensive or slow it down at all? Or like, why did it still come in?

Oh, yes. I said we could have had three products. It was slow, but you knew every, And it's worth it. In fact, it still, we're like two weeks away, I think, or like when this shows two-weeks away.

But yes, is slower, but it is worth. And because we learned every step of the way what was being done and why it was going to be better. So it kind of like worth waiting for.

Yeah. Definitely more expensive. It was gonna be September, then it would be October. Again, there's a reason. And Dr. Plews was not rushing anything.

He was doing it right, the way Vitaly would want our products to be. There's clearly a philosophical core alignment here between you guys and between all of you.

That's how you build legacy and products that actually work. Let's talk about some safety regulations and the insider truth here. And you've addressed some of this, Jordan, already.

If a brand claims human exosomes, what is the single most important verification that consumers should demand? Like, let's help people to educate themselves a little bit more.

So what should people be looking for? We could do a whole podcast just on that, but I think part of this is that- Maybe there's a lot of great questions they need to ask and learn what they're looking for.

Sure, sure. I the thing that most people don't even think to asked is, is there any animal derived products being used in the manufacturing? The most common thing if you're in a laboratory around the world growing a cell, a mammalian cell is something called fetal bovine serum.

It's very common. And if you've ever grown cells in a lab, you have seen that, and you probably used it. The problem with it is that we have things like mad cow disease, which is a prion-based disease.

And this is something that can't be filtered out. You can test for it, it's pretty much a risk that you take. I know we've had outbreaks over the years and there's places like New Zealand that have been isolated and their cows have But generally speaking, you know, I feel it's a risk that's not worth taking by using that product.

So not using any animal derived products is an important one in my mind, not only for safety, but also batch to batch consistency. Because if you're going and you are getting something from an animal cohort to feed your cells, That can be different every time and that can have different effects.

And we want a product that's very consistent. The more you have changes, whether it's changes of donors, some people are getting the cell population, maybe it is from plasma, from a different group of people every week, every month, this introduces variability that you just don't want.

Yeah, that's probably the number one. In your case, are you basically sourcing very, like, so help me out with this because, basically people should ask, number 1, Are these human?

Are these not bovine? How do you know there's no contamination? Is the lab basically also working with animal product? But also, from what you just said, how do manage this whole sourcing issue about not wildly variable batches?

Or are you testing every batch to make sure that each batch meets the criteria that you require? Because you can only get so many exosomes out of one umbilical cord.

Sure. We could delve in how you get consistency there. People imagine there's a new umbilical cord or new source of cells every week, every month. That's not actually the best way to do it.

Generally speaking, you're going to get multiple cords and put them into one master cell bank. You're gonna test that cellbank to make sure that there are no communicable diseases in there, There's a standard list of those kinds of things to worry about.

Usually, we go a few steps beyond that testing for things like Zika and whatnot as well. And then every batch, you got to do microbial testing, make sure there's no bacteria or fungus, and that happens multiple times through the process.

Why Source and Age of Exosomes Matter

The whole process needs to be done in a lab that's meeting CGMP standards, so aseptic technique, making sure things are basically as sterile as possible throughout.

And then, like I said, the animal component I bring up because of the fact that it is significantly more expensive to feed the cells non-animal derived products.

You have to use synthetic, chemically defined alternatives and things. That costs a lot more money, generally speaking. There's a reason companies don't want to do that, right?

They're making better margin by using the animal products, but I would say that it's something from a safety and

reproducibility standpoint, every company should be doing.

But if you don' ask, they just won't mention it. Most people don''t know to ask frankly. And that's why we're having this part of the conversation, right?

Because I think the consumer needs to know where the sticking points here, what are the places that people might be cutting corners or whatever. And so would that be a Zeno-free sourcing?

Is that what that term means? So guys, ZENO is X-E-N-O. Um, so you're really trying to stay away from the animal products just because of all of the things that Jordan just talked to us about.

And I'm guessing that, you know, when it comes to like, are there risks in terms of contamination or immune reactions with poorly sourced exosomes? I, there's gotta be, again, and you've just about this, like the sterility and Maybe you want to.

Yeah. I think a lot of what I hear out on social media is often a bit overblown. The scariest thing that could happen usually would require a company to do something malicious.

Uh, I don't think anyone out there is doing that right now. For example, if you were to go and to take a cell line that you knew was bad, like a cancer cell, and you're trying to get exosomes out of that, that would be malicious.

That would crazy, right? I don't think anyone's in that bucket, but certainly there are places where sterility is maybe not up to code. They dont have great SOPs.

When something gets really popular, as exosomes have been, you find people that are not experienced trying to jump on the bandwagon and benefit. And because they don't have that experience, they're going to cut corners.

They're gonna miss steps. Maybe not following known practices. So this is where working with people who've really been doing this for years and have the proper background, usually PhD level, is important, in my opinion.

And the other thing is I think that labeling standards are still not really quite up to snuff, right? So are there specific things you would direct consumers to look for on the label of the products they're using so that I feel like this part is a little bit just education for the audience.

I mean, obviously, this is going to be on all of your products, but what are the elements of labeling that you think are most important people need to look for so that they can at least ensure that it's safe and that at some efficacy?

Yeah, I mean, the short answer is the label is not going to tell you everything that you need to know, unfortunately. That's the truth. You should do a little bit more than read the labels.

When I'm looking at a label, though, where are the preservatives? Because if you're making a topical, you have to have some preservative. If the preserve is right at the top of the list, that tells you there's a lot of preservate.

That's not a good sign and usually it means that there's a lot of active. And so the part that is related to the exosome portion, the active portion that should be towards the top of the list.

Um, and then, you know, there are basic things like we know if you, if we go out in the sun, your son, this one's going to damage your DNA and your skin, right?

It can cause a double strand break. Well, inside these exo-zones got very, uh, unstable molecules. So you don't want the bottle to be clear. You dont want to exposed to sunlight, UV, right?

You want it to oxidized. Using a double-wall airless pump that really keeps oxygen out. This should be pretty basic, but a lot of things out there are using a dropper bottle because it looks scientific.

But every time you open that bottle, you're introducing air, your introducing contaminants from the outside environment. So, when you're talking about a product like this, it should be very well protected.

I do get a lot of people that are concerned about temperature. Yeah, well, because we imagine it must be perishable. Right. Yeah. And in many cases it would be, but you have to remember what temperature is your body, right?

98.6 degrees, I hope. That's more than room temperature. These are floating around in your bodies right now. We found them in every biological fluid from lymphatic, blood, saliva, urine, So it's not temperature that is breaking them down.

Often it is oxidation. It's other things from the environment, you know, vigorous shaking. Even if you combine these too much, too concentrated, the lipid envelopes bump into each other and they can merge.

And there is some physics behind this, something called the Coitre's equation that talks about the physics of these vesicles. Basically the larger the diameter of the vesicle, more likely it to pop.

And so actually smaller is better. So these are all things to consider when you're looking at a product. But again, you probably won't find all this on the label.

One of the things that as I've aged that I started to understand, because we're always talking about skin, skin skin. Yeah, I got to take care of my skin and then it comes to your awareness.

A lot of negative visuals that you are getting on your face that your seeing is really happening under the skin Like, it's not just, I mean, having good skin is amazing, but all the stuff underneath is really what's holding the ship up, as it were.

And so our exosomes, how deep do exasomes go in terms of their signaling effects? Like is this all skin? And you mentioned the extracellular matrix earlier.

Can they really shift your skin aging trajectory over time? What I am going to say to the audience is if you're listening to this and you are under the age of 50 or 40, it's not too soon.

Because the younger you The earlier you slow things down, I didn't start taking care of my skin really until I was about 50. I had good skin until 50, but that was my starting point.

It might take me back a little bit, it ain't taking me to 30. Talk to us a little bit about how deeply the benefits of the exosomes, and we could even bring in GHK a bit here because it may also play a synergistic role, but are we able to affect what's happening underneath?

Yeah, so there's some interesting things out there that have been studied. I think people's default is to say, oh, it can't possibly be getting in. We have a great barrier.

You know, if you talk about it, again, as an engineer, I thing about where are the places that this can get in? What are these sizes we're talking about, right?

If you look at the typical diameter of an exosome, we are talking, you know 30 to 150 nanometers ish, A lot of people talk about Daltons, and I've heard about people saying, oh, anything bigger than 500 kilodalton.

I heard people say 20,000 kilodelton. You know, I know a lot this stems back to a doctor from 20 years ago. The reality is that the skin is not like a metal plate with holes drilled in it of a specific size.

And I think that's how a lotta people think about it, right? Well, the skin around the eye is thinner. We know absorption there is better than say other parts, right?

And there's a stretchiness in the elasticity. we know we have sweat glands, we had hair follicles, just to kind of put it into perspective. If your typical cell is maybe 10 to 15 micron across and your typically exosome is 30 to 150 nanometers across roughly, to fit an exo zone down a sweat gland, typical sweat, gland typical hair It's like a marble down a well.

We're talking about something thousands of times the diameter of an exosome. So this idea that you can't rub something on topically and get it down those wells is just not true.

Now, in order for this to be effective, you do want to see the exosome making contact with a living cell. You don't want it all to be touching dead cells on the surface, of course, right?

A lot of people think, okay, well, I'll just microneedle it in, that will work. And there is some evidence that that may help with the delivery, and there's other modalities that help as well.

But you would be surprised by how much data from just topical application alone has led.

Safety, Sterility, and Labeling

And so people ask what you've asked, how deep is it going down? And they imagine this little bubble traveling through this Byzantine maze through the cells, right?

When I think in actual fact, what's more likely to be occurring here is that the exosome is talking to the cell near the surface, and those cells are changing based on the instructions that they're giving, then they in turn release their signals to their neighbors, and then you start a bit of a domino effect that goes deeper and deeper down.

And then, of course, as your skin is turning over, over time, you keep doing this, keep nudging in the right direction, You will see fresher, younger, better looking skin coming to the surface.

Okay. But it is still very much a skin intervention. It's not so much in the deeper layers of the dermis or down to the muscles. And I mean, look, great skin takes you a long way, but this is really addressing the health of skin and the appearance of this skin just by renewing the cells as they turn over so that you're ending up with younger, better looking cells.

Yeah. I guess, sorry, let me rephrase that. Will it affect, can it go deep enough to affect wrinkles at all? For sure. Yeah. So this is the surprising thing is that, you know, there has been a few studies looking at histology where you can actually see an increase in collagen, an increasing elastin, and an increased deep, right?

They're thinking of like a full skin punch biopsy and seeing all the way down in improvement. And so this as a growing area of research. But I think the thought is, we can't possibly get down to the dermis.

You can possibly be doing anything more than the surface. but that's not what the data shows. It is showing that, and it may take 12 weeks to get there, right?

But at the same time, it is affecting all the way down the depth of a skin punch biopsy at least. Yeah. And we can't forget our friend GHK. No, I was going to say…

Because GHK-CU, it's getting in there. And if I would think that the GH… I mean, what a partnership. That's what I used on my scar. I have a six inch scar from my spinal surgery.

Of course, you can't talk to them about this, but can I put something? Can I Absolutely. But I used it and submitted my photos regularly and was told that it was a month ahead of the healing of wound because I was using the exosomes and the GHK together and just covering my poor back, which was…

I mean, I wouldn't even look at the pictures for the first week. Jordan, would you say that an exisome skincare could be considered like a localized longevity intervention?

Yeah, for sure. I think of this much more as a treatment product, right? I this is something that is supporting the health of your skin and really just reminding your skincare cells how to look and act young again.

Yeah. So someone would use this for years. We're at the beginning of the runway here. Right. What cumulative biological benefits do you think we might see?

We don't know necessarily. I think, over time, what you're seeing is your lifestyle, your genetics, aging, environmental exposure, they're infecting our epigenetics, right?

Epigenetically, we're basically turning some genes off that used to be on. The beauty here is that if you get that packet of information through an exosome that that gene that you normally were expressing is turned off, now it can still read that message in the exasome and it still get the benefit of that protein, that biomolecule that used to be naturally produced, right?

And all these things are natural, at the end of the day we think natural we can plants, but natural to our cells is human proteins. Because on a human level, we all speak the same protein language, right?

So over time, as that builds up, you're going to stay in a state that is more like when your cells were younger. That's what the science shows, and I think the more we can maintain that, the better.

So in your analogy earlier, this speed at which things are going down is probably going And if the growth factors that you've turned off or aren't producing as much of, now you're going to have more of.

And you got the help of GHK copper in there too. So I think, is it a magic bullet? No. I mean, nothing is. But I the big shift here is that I need to get away from what I would call the hero ingredient model, where we have one ingredient doing like 10, 20 different things and expecting the world from it, and instead need change a lot of things.

We need to have a lots of components. What's in these exosomes, when you look at it from a protein level, we found thousands of different molecules. You're not going to thousands different things on your bathroom shelf.

This is a shortcut to put back a I don't use them all. But yeah, I think that's the other thing to mention here is like when you mix together all these different products, sometimes they play well together, and sometimes, they don.

Part of the goal here was how do we get as much into one as possible that it's all going to be natural, healthy, boosting the main things that your skin is going be missing with time.

you've definitely are building synergistic products within your line. You can't speak to anybody else's, but you are filling synergy in your life. So where do you see exosomes fitting into that broader longevity stack?

The things like peptides and the NAD boosters and this analytics, where does this fit into the whole puzzle? Yeah, well, you see, I go back to the hallmarks of aging and think about, there's a lot of talk about mitochondria, a little talk of antioxidants, right?

I think one of the big step forwards that we're understanding at this point is even if you went and lived in a cave without any sunlight, And so if you're not getting these oxidants from damage from the sun, where are they coming from?

And now I think we understand it's coming for your mitochondria. They're breaking down and they're releasing the reactive oxygen species. And we've been covering up those ROSs with antioxidants when really we need to probably get rid of those cells or push them to recycle, right?

Get rid of the zombie cells, the senescent cells. A lot of that is down to your immune system and the stem cells have a role with the immune systems. So we do know that some of what's in these exosomes is relating back to supporting and boosting immune function.

And so I would expect that you're going to be quicker to get rid of those senescent cells on the surface. So while you are taking all these things internally, most people who care about that also want to look good externally.

And we're attacking it from both angles. I think that's a better, more well-rounded approach. Some might argue if I take enough internally eventually it's going come out through my skin.

But for those who want do everything, why not go from those angles? Yeah, my point of view on that though is also the body deals with things from a hierarchical perspective purely based on survival, right?

The body could not give a flying fajita, how we look, like it just doesn't care. You have a skin, it's got a barrier, its doing its job. I don't if it looks like a prune, I dont care what it look like.

It's there, we've got bigger fish to fry and there will be bigger to fish as we age. So I do believe that, you know, the skincare, good, skin care that's based on good science is going to deliver those nutrients to the skin where you need it, when you meet it.

Like, it's, you now, I think it is just foundational. We wouldn't survive otherwise, right? If there wasn't that hierarchy of needs that the body has dictated and sticks to with without, there's no negotiating.

So anyway, let's talk a little bit about what people see. What's the first thing people notice? Like is it texture, tone, inflammation, resilience, healing speed?

For sure. We've talked about that a ton, but let us talk about aesthetics a bit because we've kind of done the beneath the surface stuff. Like what do people noticed first and how long does it take?

I think that might be a Debbie question. Well, initially, because I was fortunate enough to be using this for several months before the surgery and after.

And during the surgery, my body, talking about exactly what you described, it was totally about building bone. I mean, I wasn't using bone and I told that that is my number one job.

You know, anything I tried to do or talk about, your job is to build, you know do everything to support that. But I had to stop supplements that were very good supplements because i needed the right kind of inflammation.

to build the bone. So I learned so many things through this, but I did have my exosomes. I didn't have to get permission to put them on my face.

How Exosomes Work in Skin

Or, you know, so I was sort of bathing in those. And I'm telling you, my body, it was using so much energy to heal my spine, and yet my skin looks better and it's fuller.

That was what was so interesting. Oh my goodness. My skin is thicker. Yeah. And I did. One day I said, Jordan, does this stuff make your skin thicker?

Because I am really, I'm feeling this, and feeling like my skin's like, my daughter's skin. So how long did that take before you started to notice, do you think?

About eight weeks. Okay. That's what I was wondering, right? So you're talking about texture, tone. What about things like beyond wrinkles, like barrier strength, redness, immune function?

Can people expect to maybe see some of that? Like people that are have those kinds of issues? And is it a two month, three month? Obviously everybody's going to be different and it depends on a million things, but how long do people, first of all, can they expect to see any improvement in barrier strength, redness and immune?

Absolutely. Jordan, you can talk more. You've seen the studies longer. I know Terry has a red face all the time and this is definitely toned down. We have seen this on Terry because he's Irish and he has got this red look a lot.

And this has really made a difference. So Jordan you could talk about longer studies. Well, what I would bring up is that we put in a biomimetic of ceramides.

So there's a blend of ceremonies that is similar to the ceramide that your skin naturally produces to make its natural barrier. And if you're scrubbing or you are using too many hydroxy acids and things, there are a variety of reasons you might have destroyed your barrier, once you get to that place and bacteria and inflammation is getting in there, it's hard to get it out and it is hard for those cells to produce more ceramids again.

So by putting ceramides in the serum, you're almost having this biomimetic bio band-aid, if you will, to put that barrier on while the exosomes and the aloe and green tea and things that are calming, calm down that redness and inflammation and give your skin a chance to rebuild that area.

Otherwise, people get caught in this cycle where it's just red over and over again, it seems like. How should expectations differ? And we talked about this a tiny bit.

We touched on it between younger skin and older skin. Because as we age, we want our skin to go back to being bounced right back. But so how do we manage people's expectations who might be starting a product like that in their 30s, their 40s their 50s and beyond?

Yeah. I mean, from my point of view, if you're in your 20s and 30s, this is prejuvenation. You're probably not at a place yet where this going to have a big move of the needle for you.

This is probably more for, let's say the 40 plus, but some level of stem cell exhaustion, some of obvious aging that they've seen on their face, right?

I think in general, you should see fine lines and wrinkles go down. You should redness improve. you Should see some improvement in fullness and a lot of that could be extracellular matrix like collagen, elastin matrix underneath the skin, slowly strengthening and rebuilding properly.

Those are the types of things, but the very first thing usually is tone and texture. And I have to remind people, your skin turns over, not overnight.

It takes a good month or more for the skincare to turn over. through at least a couple of skin cycles. So when Debbie says eight weeks, I'm thinking that's a a skin cycle.

It's only gonna get better after the third and the fourth, right? So give it at a least couple months before you pass like a big judgment. But I will say most people do within the first four weeks see something that is visibly different and improved.

even if it's just calming. Yeah, that's really good point. Thank you. Softening. I think soft. That was the other thing, both with GHK with the copper peptides is soft, there's a softer texture.

This is interesting. To younger women listening to this, this weird thing happens as you age where the texture of your skin changes. It becomes a little rougher, especially below the mouth.

When you're using good product, you will notice that it will start to smooth out. Or dry. And dry, yeah. It's dry for sure. You really need to do something about that early.

All right. So what kind of feedback from customers impact you the most? What kind just sets you back in your chair? That's the kind feedback that just blows you away?

You mean like makes me excited? Yeah. Well, I mean I know the answer because you've sent me the pictures. I

mean, there's healing, but there'd be the healing of the surgical wound on your back, number one.

No, that's number 1. But no, people who have had problems all their life, and now this is more with the copper peptides because we're just now reducing the exophones.

But when we're solving a problem, people who said, I always had bad skin in my young life, and now people are noticing my skin, it makes my day. And then we had someone with a flesh-eating bacteria from Costa Rica.

that she was in this clinical trial and she heard about copper peptides and reached out to us and I immediately sent her the 3% serum and the picture she showed us, I mean she had been in the clinical trials so her skin had calmed down but she has all the scarring.

And this was after just like four to six weeks. She said, I can tell a difference. The scar is starting to… She had been dealing with this for a year.

When she started applying the serum, she could tell the difference within four or six week. And she just said I cannot believe the different. Yeah. I just want to frame this to the audience.

Just, just so you guys hear the flesh eating disease had been basically treated. She was now left with the damage. Yes. And, and I think what's important about scars too, this is a different question also maybe, I don't know if it's exosomes or GHK or both, but what about old scars?

Like can these products help with old scar? Cause this a fresh scar, the body is still going at it. So which is the perfect time to go at. Clearly. But what about older scars?

Have you seen that it can be helpful? Do you need to irritate them a little bit to bring attention to it? What are your thoughts on that? In my experience, it is better to agitate the scar tissue a little bit.

So whether you're doing a nano-needling, a micro- needling something that draws the body to say, oh, this is still injured. We need to get back to the healing cascade.

Otherwise it can, I have seen it improve without it, but it's much more slow. Yeah. Well, it's interesting. You know, I have a scar on my cheek. Actually, It's a birth scar.

And it has, over the years, has improved just the last few years of using these types of products. I've used the GHKCU for a long time. i'm pretty excited to see with exosomes and maybe I'll give it a little poke every once in a while, but it is almost invisible.

now, which people used to come up to me all the time and say, Oh, you have lipstick on your cheek. All right. Um, have you ever seen a transformation that you're like, oh my God, this is like beyond cosmetic.

This is next level. Because people are going to respond differently, right? Maybe based on their genetics, maybe based their diet. Like, who knows? Like have you ever seen a transformation that's just maybe made you go, oh, holy wow, this is crazy.

I mean, now we're going go back to GHK because we just don't have the track. We'll talk about this in a year or two. I have a lot of before and afters where I've seen skin look significantly better.

It's on your website, right? It is on the website and I had people who write me and talk about, you know, and they don't have to do this. They make a point to write and how their skin feels.

I love to touch my face again. things like that. And I call that a transformation. I was hit by a golf club when I 60 years or 50, 55 years. And I started putting the serum on and I didn't microneedle or anything because it was a scar.

I put it on twice a day and put the oil on top of it and it truly did. It's barely there but it's significantly flatter. Yeah. And I've had people, actually the person who does my hair, she came and said, I wish I could hold up my sweater and show you my breasts.

I'm like, what? And she said I'd been using the serum and she had had this procedure 10 years ago and one place where the scar did not heal and the one that did.

And so she used the serum. I mean, she uses it as four or five weeks, not five minutes.

Results, Expectations, and Scar Healing

And she said, it's totally flattened out like the other one. She was so excited. So I have a lot of people with a scarring in GHK. That is probably wound healing is where it just shines.

Absolutely. For sure. Okay. Let's talk about the more is better myth. We talked about it a little earlier. You can only eat so much turkey in one sitting, but many brands are like, oh, we've got billions, trillions, hundreds of trillions of exosomes.

Why can higher numbers be biologically meaningless? Do we have any idea what the threshold or saturation point is on signaling molecules like this? Yeah, I think the reality is that from cell type to cell-type is very different, right?

We got to remember it's not about the number of exosomes. It's about that cargo inside the exo-zones, and so if you have a bunch of boxes of junk, you don't want that, spend a good time working in this field, you'll know that you can get more exosomes out of a cell by agitating it, treating it in a negative way, basically upsetting it and roughing up the cells.

You can more of these particles that can show up by an NTA analysis as exasomes, and they're not good. They're containing inflammatory markers or they not actually a benefit, right?

Like the secret sauce for me is, you know, how are those cells being treated in the laboratory? It's kind of like the old physics adage, every action has an equal and opposite reaction.

Well, You need to push the cell in a right way to produce the good stuff. If you're just trying to maximize for a number of particles, number exosomes, your not likely to get the right blend.

And so, yeah, I think from a marketing standpoint, this is what a lot of companies go with. But as I mentioned before, in biology, it's rarely a more is better.

And this why really we want to nudge the skin in the right direction each day with a reasonable dose, with something that's more balanced. In your mind, what's a If you're talking about hundreds of thousands of exosomes, you are probably too low.

You should be in the millions or more. Now you start talking billions, trillions, hundreds, it's getting pretty wacky out there. I know of one company that within the span of five years went from selling you a hundred million to multiple trillions And the pace at which they were moving forward, I really question that that's true, right?

It's very easy to just keep adding a zero on to whatever you're saying. And, you know, the proof is in the results, though. You know you were talking about results before.

I've seen a lot of different exisome products over the years, and in many cases, a lots of skeptics. The thing that really stood out to me was some would actually do a split face.

and put it only on half the face for eight weeks and had many people come back going, okay, I have to stop because I look like I had Bell's palsy here.

I got half my face is like lower than the other. This is, this is a great sales tactic. If you can get people to commit to that, but most by four weeks or eight week send, they see that difference in their own skin and you.

Yeah. You can't make me do that. It's not happening. I'm not losing eight weeks on half my face. It's not going to happen. So would you compare exosomes to hormones, powerful in the right dose, harmful or wasteful in excess, right?

Look at the experiments that were done. I think it was a Japanese researcher on water and speaking to water with kind words versus speaking water angry words.

And it actually affected the physical structure of the water molecules. Yeah, and I think you definitely need to think about what you're doing very carefully and how you are treating the cells.

And how do you treat them does determine what they produce. What we're trying to do effectively is to trick these cells in the laboratory into producing the right blend.

So they are reacting thinking that damage has occurred. and producing a specific balance of exosome and exasome contents based on that, whereas others might starve the cells or subject them to different forms of damage that could result in a profile that's more inflammatory.

I even was on another podcast a while back with a a trainer for injections and does a lot of facial treatments and lasers. And she found that if you get exosomes from the wrong cell source, they can actually keep you in that inflamed period longer, not less.

So you're red longer and it's actually not necessarily in your benefit. There are some examples of this, but I think it it about balance. I the analogy here is more like We understand if you had a set of multivitamins, right?

You want a little bit of everything so that if have something that you're in deficit of, you've got it in there. It's not about taking 50,000 times the dose of one vitamin, it's like you make up for something else that your lacking.

Yeah. I love that. Perfect. Let's talk a bit about what else is in that? Y pair exosomes with vitamin C glutathione and SOD, superoxide dismutase 2 specifically.

Yes, I'll talk real briefly about the vitamin c because probably the number one question I've had in the last five years is how do I use vitamin And we know we want to keep them apart.

Yeah. Yes, we do. Well, if it's ascorbic acid, and that's what most people have been using. But I've learned, as you said, when the light bulb went off, I studied and learned that there are other sources of vitamin C that actually are much more stable.

They're all base, so they actually absorb deeper into the skin than the water base. And we decided, okay, I'm going to solve this vitamin C problem for everyone because we also have copper peptides in our exosomes and our Vita product.

Not a heavy amount, but we have a good amount to balance. Again, because if they're using the serum, they need to continue. using that for the same purposes.

But the vitamin C that we have added is stable and it is in the product, so you do not need to buy another vitamin c when you use this product. You have two stable THD-Ascorbic and MAP, which are two-stable sources of vitamin-C.

And that was my first request, and I know that sounds funny, but he says, okay, we had the first formulation meeting. I want vitaminC that works with copper peptides.

Can you Well, I mean, it's interesting with vitamin C, right? Because people think of it as an antioxidant and all the

things, but vitamin CC equals collagen.

Yes, absolutely. It's crucial for collagen, so. Absolutely. All right, Jordan, over to you. Yeah. No, and I was just going to say, yeah, that I think we all understand the importance of vitamin Certainly the low oxidizing forms of vitamin C are better specifically when mixed with GHK and you just generally don't want something like ascorbic acid that oxidizes very easily floating around and they're doing damage to other ingredients and often turning brown and it causes a lot of effects around it.

So coupling it with glutathione and kind of extends the life of the vitamin c as well acts more like a time release because in our cells Glutathione helps to recycle vitamin C and E through our cells.

So that is a bit of a stabilizer and helps it elongate the value of this. Instead of the game of I need a really high percentage of ascorbic acid, you can actually use a lower amount of these low oxidizing forms and get a kind of time release effect.

Great. And the SOD2? I love this. Yeah, this is not something we're adding in as an external ingredient. This is actually something that stem cells are naturally producing.

We highlight it because in the body, that is the ultimate antioxidant, really. I think there's a lot of attention given to vitamin C and glutathione, but when the cell needs to perform an antioxidant activity, that's its go-to.

And so you're getting that as a side effect, as natural benefit of the stem cell exosomes. Okay. So if I understand it, the way these ingredients are working, they're like supporting actors, right?

We've got the signaling, we've go oxidative protection, and we got cellular energy. You're basically making sure that there's the right situation, everybody's got what they need to deliver on these instructions that are being delivered by the exo-zones.

That's perfect. You said that perfectly. And you don't have to buy 20 bottles. I mean, if you want to do that, you can, but that's one thing people like to simplify.

Or some people- Oh, so it's doing a lot of work. Yeah. There's a lotta work by the combining of these ingredients. You don' have have as many ingredients, You Don't Have To Have The Separate Seed.

Ingredient Synergy and Formulation Choices

And the vitamin C. Did I ever tell you the story about having a vitamin c serum that was supposed to resurface my face that I spilled on a polished marble counter?

at a house I was staying at. It completely ruined the polishing of the marble. And when they sent the guys in to fix it, the guy looked at me and said, you put this on your face?

I'm like, I don't know. I might be rethinking my strategy right about now. Are there any ingredients on the floor that you guys thought you really wanted to use that?

You're like yeah, no, not going to work. Sounded good marketing wise, but just didn't like any hot ingredients that maybe you might've been, you know, You might have said, well, we should have this.

Everybody's got this in there. Like salmon sperm, for example. Yeah. I mean, this is something, you know, I think there are things like that, that you, know again, a bit of a fad product right now.

And I, think, there is some evidence to how it can help. And people will talk about the A2A salvage pathway for that and there's ways to rationalize how it works.

In my mind, it's more like you're taking DNA from a salmon and you are putting it in your face and your immune

system is going, this is not mine. And in the process of booting it out, its probably cleaning up the area and a lot of the benefit is probably there.

So it wasn't something that made sense for us with this product, but certainly there was a lot of peptides. And when you start going through what's out there, the companies that sell the peptide are marketing to you and you've got to be careful.

Some of the science there is really wishy washy and they can put together a beautiful one sheet saying what it does. So we did go through a lock that looked good on the surface.

But then after digging in, it didn't have a But we did add some peptides that have been proven that support collagen and elastin as well for that extra oomph.

We've got things like brightening agents, like licorice root extract. There's a specific form of it that has been shown in a few studies to really do a lot more.

I think most people are looking for a brightening effect. So this is not a pure bright product, but does support that bright effect as well. And you brought up longevity and NAD.

Niacinamide really plugs right into that NADA pathway. It helps to draw blood flow to the surface, helps with absorption, great with blemishes and cellular energy.

So I wouldn't say this is everything that I would want to put into one single product. But if you were to go and buy all these and mix them together, chances are they won't emulsify.

They're going to pill up. And there is limits there. Well, you talked about this earlier, right? I mean, the temptation to putting it all in without paying enough attention to what are the pathways that we're stimulating here, what makes sense to do at the same time.

There's something about timing. of delivery and of instructions. And I'm a big believer that if you give too many instructions all at once that are not centered, that aren't all moving in the same direction, you could end up with either wasting or just like kind of confusion.

So it sounds to me like what you've done is you have identified this stack of compounds that work together to get us to an objective. Is this the product that's going to be the one product anybody ever uses ever again?

No. Does it do a lot of heavy lifting? Absolutely. And I think that's reasonable. That actually makes sense. We should not expect. Okay. A couple of more things.

Do you think the skin aging can serve as an early signal of systemic aging? How deep do you that relationship goes? The aging inside the body reflected in the scan?

I might have something to say after you're done, but I'd like to hear your take on it, Jordan. Yeah, I mean the short version there is yes. This is something that often your nails, your skin, and your hair are the first sign that something internally is not quite right.

I think there's, you know, we've all experienced something in the course of our life that showed up on our skin and we're like, what the heck? I think the better we get at connecting those dots, the off we are.

But I still think there's a lot of work to be done there. I can't tell you the number of times I just kind of overlook something and don't think anything of it.

And then later on, maybe that was because of this, right? Mm hmm. Yeah, I love that. Well, i mean i've just gone through a bit of a i'm not going to go into detail about it.

I've gone Through a really major health event over the last four weeks and part of it was that my skin and my Skin barrier got attacked and I would say that in the Last two weeks my, skin has aged from the inside you know, without sun or anything.

And there's no doubt in my mind, we're going to turn this ship around and make it better. But at the same time, it is remarkable to me how a systemic issue can show up in the skin.

It can do that fairly quickly. I'm just putting my two cents worth in here. I think our skin is an expression. And I it's part of how people with some of these chronic skin conditions like eczema or psoriasis, they get into so much trouble because there's so many energy being put on suppressing the symptoms and so little energy brought to what's happening within the body to drive it.

know, the conventional medicine can poo poo all they want skin care, but at the end of the day, if you're not taking it, I mean, going at it also from the inside, you are not addressing the problem.

We see things going chronic and really getting people into trouble. Dr. Free is our medical advisor and she has been wonderful because I answer so many people the notes when they write what their situation is.

If I can answer it and I've seen how it works, yes, but there's so much I shoot over to her and then she will start, oh no, this is totally an internal situation that blah, blah.

You said earlier, as your scar was healing and your job one was to heal bone, all that energy was going there, but what you were doing was topically applying, bringing it down to the face at the same time.

Absolutely. And with love. I mean, it was, you know, We know you, we know it. So how do you think, and maybe this is for Jordan, how might future topical therapies communicate with deeper tissue and immune systems?

Have you ever kind of thought about them? I mean, I'm sure you've thought Well, I mean, the skin is the largest organ, right? So I think it gets kind of relegated as this aesthetic thing, but it's our first line of defense for so many things.

So, and it is, depending on how you look at it, this skin has a lot of different cell types. I thing people think fibroblasts, keratinocytes, you know, some people say seven cells, there's really more than 20 cell type depending how look it.

A lot them are immune cell-types, so these immune cells are scavenging. They're looking for zombie or senescent cells, they're look for invaders. You want your skin to be on guard, you want body to on be guard but sometimes it goes too far or not far enough.

Again, this is where biology and balance is really the name of the game and making sure that you don't have any bottlenecks in your biochemistry where something is missing and holding things back.

I think what's going to happen in the future is we're going figure out ways to copy and paste the program of youthful immune activity and other things into the body.

There is a well-known stem cell researcher that I'm familiar with, Dr. Hans Kierstedt, who runs a company called Immunus, and they're basically in phase two right now with an immune secretome that is meant to do just that by the sounds of it.

You're taking an injection of a secretome that's boosting the immune system. And so I think technologies like this, where we're thinking more broadly than the single molecule, are really going to change the way we age in the future.

They're exciting, right? And there's multiple opportunities here to that now. I love that. All right. Last three questions, people. Where do you see exosome technology evolving in That's Mr.

Jordan. Again, I think we're moving towards a place where you're going to have maybe an exosome or secretome for the immune system, for this skin, or the brain, the kidneys, and the heart.

Future of Regenerative Skincare

You start going in organ systems, what we start to realize is that each system has its own progenitor cells, its' own conductors that dictate a variety of things in that area.

The more we can grab the whole set, and apply it correctly, the more we can regenerate and boost what's there naturally. So I see maybe some narrowing happening where we're more specific and not narrow down to like say one molecule, but maybe instead of a whole soup that is different from company to company, we are going to circle around, okay, this is the optimum soup we were trying to grab and here's why.

Could personalized exosome therapies become possible? Like I'm sitting here thinking, when a baby is born, we harvest their cord. We store it properly.

Thoughts? And Jordan did that. Yeah. I mean, this is something. Well, yeah, the umbilical thing, I think this something that makes sense. But at the same time, if you look, like a lot of my doctorate work was literally about molecular de-aging of cells.

And so we're turning cells from an adult state back to an embryonic state. From there, you can go forward, right? These are called IPS cells, and these cells can be turned into whatever you want and effectively be your own donor.

Now, there's a lot of technical difficulties in that, but I think once that technology is more perfected, you know, that's where we'll end up. And the other way to look at it is kind of the way that a lotta David Sinclair's work has been, where it's building on the same research and saying instead of four factors that we know go all the back, we take three and we will de-age across the body.

Now, the problem we have with that is how do you de-age everywhere? How do get something everywhere, right? It's sort of like being a Gattaca baby where we put something into you at the embryonic stage, I think it's going to be tough for those of us that don't benefit from that.

But I do see a future where some of that research is leveraged. to literally de-age cells. And I think what we're doing in the meantime is copying and pasting from young cells onto our older cells to try to keep them in this younger state.

Hey, Haven, I love that. Last two questions. What scientific breakthrough in regeneration excites you the most right now? Immunist sounds pretty darn exciting.

Because if you can keep your immune system young, that's pretty… powerful. When I look at these technologies, like Yamanaka won the Nobel for this reprogramming work in 2012, and I think Exosome's got the nobel in 2013. But it was basically this idea of using these compounds to literally de-age is very exciting.

If you really understand it, there is this possibility of at least with the four factors, cancer, right? We know that. I think it's a double-edged sword, when you look at the cells that are growing endlessly, naturally, that don't have a natural limit, those are embryonic stem cells and there's cancer cells, so I How do we get past that and control that, control for that prevent that?

But the most exciting things in my mind are also arguably the more dangerous. The other thing that's really exciting is more near term is a company called Mesoblast that got a stem cell treatment approved I think end of 2024. for graft versus host disease, if I remember correctly.

And I think that was a big step to get any mesenchymal stem cell therapy FDA approved. Big step. I mean, we're only a few steps away from that being something where we were maybe injecting exosomes instead of stem cells

because anytime you're inject cells, it could have a capillary blocked up or something like that.

Exosome don't suffer from the problem. They're arguably inherently safer. I think we're on that path where maybe that's the interim exciting technology that will come next.

Love it. Last question, and this is for Debbie. You said the Exosome is a standalone product if people want it to be, but let's say somebody is Vitali user, what's their order of operations here?

Is it ExoSomes first? No, that is very good question. I don't want to close it up like that because No, absolutely, and we actually have that on the box.

Exosomes first and then the GHK. And then moisturizer, eye cream. Moisturizer and the eye-cream and, you know, the body cream, yes, Absolutely. Would you put the Squalene, because you have the hydration boost, where do you do that?

I use it every day. It's last, so you use almost like as your finisher. You talked about using it, it almost acts as a primer under your makeup. It is under sunscreen or anything, but I use that every day no matter what.

I put that squalane because it's most like your own skin cells. It's amazing. And it is a simple product. One ingredient, wonderful product that helps finish it off.

All right. Well, ladies and gentlemen, it's been an absolute pleasure. Thank you both so much for your time. This has been deep education and inspirational.

So Debbie, thank you for you're inspired work in this space. Jordan, Thank You for joining forces with these people and bringing your inspired working to the space folks.

If you want to get your hands on some Vitali product, which I would say, would be, could be a worthwhile endeavor. You'll want to go to Vitalyskincare.com and you'll wanna use code NET20 to get 20% off.

Thank you again, both. It's been a totally amazing time. Thanks so much.