STEMREGEN ART19

**Speaker:** [00:00:00] The entire body is constantly going through a process of tissue turnover. You get a new skin every [00:00:05] month, a new liver every two, three years. Cells have a specific lifetime. They are replaced and they're [00:00:10] replaced by stem cells. Stem cells have been doing their job and repairing in your body since the day [00:00:15] you're born.

**Speaker 2:** Christian Drepot is a pioneering stem cell scientist whose groundbreaking research is [00:00:20] redefining how we heal and regenerate the body. He's not just advancing science. He's [00:00:25] unlocking the body's ability to repair itself from within. The ability of stem cells to

**Speaker:** migrate and [00:00:30] multiply increases after fasting.

So you take stem cells before fast and after fasting [00:00:35] and you see that they're more effective, which means they act as younger stem cells. The more [00:00:40] we dive into stem cell research, the more we need to realize it's like your immune system. [00:00:45] Any body fluid is likely to have stem cells. They are really everywhere and they are the [00:00:50] body's repair system.

**Speaker 3:** The idea is We're making stem cells in our marrow. How do we [00:00:55] influence the quality of our bone marrow so that we can make more stem cells? [00:01:00] You're listening to The Human Upgrade with Dave Asprey.[00:01:05]

Hey guys, quick reminder. If you're listening to [00:01:10] this on your favorite audio podcast app and you haven't been over to my YouTube channel, check it [00:01:15] out. Just search for the human upgrade or find me under Dave Asprey BPR. I post full [00:01:20] video versions of every episode and a bunch of other cool content outside the pod.

It's a great way to go [00:01:25] deeper into the content and connect with other biohackers like you. So leave a comment for me. [00:01:30] Yeah, I'm actually going to read them. Bye. And poke around while you're there, there is a lot of stuff specifically for you. [00:01:35] It really helps. And it means a lot to me. Why do some people [00:01:40] regenerate and other people just break down?

**Speaker:** I would say it comes down to how many stem cells you [00:01:45] have in your bloodstream. And because this is something that is interesting. If you look at your last blood [00:01:50] panel and look at the range that you have, let's say for platelets for [00:01:55] lymphocytes, red blood cells, any markers, any parameters in your blood.

And the range [00:02:00] between what is too low and what is too high is roughly maybe sometimes a [00:02:05] factor or two or three fold. But if you look at stem cells in at least the work that we've done in [00:02:10] the lab between the person that has very few stem cells, we've seen as low as [00:02:15] 0. 01 percent of your, sorry, 0. 01 stem cell per [00:02:20] microliter.

And we have seen up to five. stem cell per microliter. That's a 500 [00:02:25] fold. So, and this is your normal physiology. Okay. How would I know if I [00:02:30] have a lot of stem cells

**Speaker 3:** or no stem cells

**Speaker:** circulating quite frankly until, and we're working to [00:02:35] develop an assay here to do, I mean, we can do this. It's just that normally it's, it's using, you use flow cytometry to [00:02:40] do this and you need to find a center that has a flow cytometer.

I mean, it's, it will be difficult and you, [00:02:45] you just can not get that done easily. But To answer the question, it's very simple. If you get [00:02:50] an injury, how long does it take for you to recover? If you go to the gym and you, like, crush [00:02:55] yourself how long does it take to recover? Right there is going to tell you how many stem cells you have in circulation.

It's not just a [00:03:00] function of how much steak I eat.

**Speaker 3:** I would say it's how many stem cells you have. [00:03:05] I know that if I eat a lot of steak, I recover faster. You do? Well, I mean, everybody does. So [00:03:10] there's protein, there's mitochondrial function, there's thyroid, there's testosterone. So. [00:03:15] Let's assume that since there isn't really good tests for circulating stem cells unless you're in a university [00:03:20] lab.

And since you make a product that causes stem cells to be released, [00:03:25] we know you can do that. What, is it my fingernail growth rate? [00:03:30] Is it the way my skin looks? What are the signs I have a lot of stem cells or that I need more stem [00:03:35] cells?

**Speaker:** First, we need to understand that we discover stem cells. It's a [00:03:40] discovery.

We're looking at it as something that is new. We need to understand it's your natural repair system. [00:03:45] It's been there since the day you were born. Stem cells have been part, intimately part, of [00:03:50] your life since the day you were born. Well, no, before that, you couldn't actually And before [00:03:55] that, since the moment of conception, I Moment of conception, you were like this absolutely pluripotent, [00:04:00] totipotent stem cell.

Is totipotent a word? Yeah, totipotent mean? Toti comes [00:04:05] from, in Latin, means all,

**Speaker 3:** so it can do everything. That's crazy. I know pluripotent stem cells. I [00:04:10] wrote a book about that kind of stuff, but totipotent's a new word for that. Totipotent. Yeah. That seems like it should be a blend of [00:04:15] coffee.

**Speaker:** In a nutshell, we've been living with stem cells [00:04:20] every day.

So now to decide that, now that I have knowledge about it. I'm going to [00:04:25] start to feel them like you won't, you're not going to feel your stem cells no more than you feel your [00:04:30] mitochondria working in your cell. So so how can you see it? It's going to be in the function that stem [00:04:35] cells are adding. So and and again, stem cells have been doing their job and repairing in your [00:04:40] body since the day you're born.

So even that is hard to tell. So what we tell people, you want to see how many [00:04:45] stem cells you have and and how they work. Go to the gym. Trash yourself, like do [00:04:50] something that, you know, the day after, uh, you would be really sore. And we use [00:04:55] as leverage stem region release that puts more stem cells in circulation.

And we just say, take two capsules right [00:05:00] after two capsules before you go to bed and see how you feel the day after you will, you will [00:05:05] have the experience of what stem cells can do.

**Speaker 3:** Oh, that's cool. So you can AB test. [00:05:10] Your stem cells. So go to the gym, get trashed and see how long it hurts. And then [00:05:15] I guess, wait a week or two.

So the muscles aren't stronger. Do it again this time with stem regen, [00:05:20] because you've shown that when you take two capsules, you get 10 million stem cells released and [00:05:25] you get about a hundred million when you do a stem cell IV. So it's a meaningful amount with about 15, [00:05:30] 20 percent survival. So actually it's not a whole lot different.

Interesting. [00:05:35] Okay. So very similar from stem regen and an IV. [00:05:40] And when you're doing this, though, if you recover much faster when you're doing that, then that's, well [00:05:45] then, you know, stem region's working. But you can also tell how, how good your stem cells are. It's your stem cells. So if [00:05:50] you are sore the same amount each time, what does that mean?

I doubt

**Speaker:** that people will, will, it's [00:05:55] because I've seen it too many times. Uh, but it, but it could mean that you've really, you [00:06:00] release stem cells no matter what. You release stem cells. Okay? You, you need to understand stem cell [00:06:05] research has shown. Something that we knew before, but now we know it with certainty and with [00:06:10] numbers, meaning the entire body is constantly going through a process of tissue [00:06:15] turnover.

You get a new skin every month, a new liver every two, three, every two, three years, even the [00:06:20] heart that was believed to mature until about 10 years of age. And after that, whatever you have in [00:06:25] terms of number of cells in your heart, That's, that's what you have for your life. And we now know it's not true.

[00:06:30] You get about 1 percent turnover rate every year in your heart. So your heart [00:06:35] renews. So if you understand that you're, you get a new liver every two, three years. [00:06:40] How old are you now? You've got, you've got a few livers and you're through a lot of livers. You've gone through a [00:06:45] lot of livers. So my point is that if you don't have liver problem, That's because your stem cells are [00:06:50] working.

So stem cells are working, you don't necessarily feel them. So the question is, if I [00:06:55] want them to work for one specific thing, like recovery after, after a workout, [00:07:00] well the question is, are they reaching that area? So now if you don't feel that there's a benefit, [00:07:05] then the question is, Do I have good microcirculation?

So a big [00:07:10] 30 micron stem cells can squeeze itself into a 12 micron capillary to reach the tissue. [00:07:15] Do I have too much systemic inflammation that basically numbs stem cells and their ability to find [00:07:20] where they need to travel? So it's not that your stem cells are not there. It's not that they're not working.[00:07:25]

It's just, there may be other layers to deal with to make sure that stem cells go where they're [00:07:30] needed.

**Speaker 3:** Okay. So the idea is we're making stem cells in our marrow. [00:07:35] Is that the only place they're made? That's

**Speaker:** where they originate. They're, they're pretty [00:07:40] much, I mean, once they leave, well, that's where they're made, but then they reach, they leave the bone marrow [00:07:45] and they will go in every single organs and tissue in the body.

Each tissue organs will have their [00:07:50] own stem cell layer that has some form of proliferation as well. So you can say a stem [00:07:55] cell can come from your liver. It's called an oval cell in your liver. So it's an hepatocyte stem cell

**Speaker 3:** [00:08:00] started in the

**Speaker:** originate from the bomb. Think of that Tony potent stem cells on the day you're born [00:08:05] on the day you're conceived.

And then think of your bone marrow stem cells on the day you're born [00:08:10] from those stem cells. Everything that you are in the future. Came from those stem [00:08:15] cells in the bone marrow.

**Speaker 3:** Okay,

**Speaker:** so they come from there

**Speaker 3:** originally because I am a professional [00:08:20] biohacker I've had my bone marrow taken out twice Not that comfortable but not as painful as [00:08:25] everyone says it just feels weird kind of like, you know That fingernails on a chalkboard [00:08:30] thing.

Yeah, just imagine that inside your skeleton that was the feeling of it. And [00:08:35] they pulled him out and said, wow, your bone marrow is so rich and creamy. And [00:08:40] I thought about putting some of my coffee, but I didn't. But how do we [00:08:45] influence the quality of our bone marrow so that we can make more stem cells and then stem [00:08:50] region can release them better?

**Speaker:** This is a, to me, a fascinating field in medical [00:08:55] research because In the whole field of stem cell research, the one [00:09:00] thing that has barely been touched is the bone marrow. So the research on the bone [00:09:05] marrow itself is, is, I mean, there's really not a lot. Of what is known today, [00:09:10] fasting is the only thing that I'm aware of that can help regenerate the bone marrow.

What I [00:09:15] mean here is that if you extract stem cells from the bone marrow and you look at their ability to regenerate, to migrate [00:09:20] into a tissue and proliferate, which is an essential part of what they do. One stem cells is meaningless. [00:09:25] It's one stem cells with the ability, one stem cell with the ability to become a million tissue cells that [00:09:30] is really relevant.

So amplification is essential. So the ability of stem cells to migrate [00:09:35] and multiply, uh, increases after fasting. So you take stem cells before [00:09:40] fast and after fasting and you see that they're more effective, which means they act as [00:09:45] younger stem cells. So rejuvenation of your bone marrow is something that has been seen with [00:09:50] fasting.

**Speaker 3:** With fasting.

**Speaker:** I am, I am, I mean, that's an area of research that I would like to really [00:09:55] dive now, ways to be able to either [00:10:00] reconvert the bone marrow or slow down that conversion process. I think it would be [00:10:05] the single most potent thing that we can do for longevity.

**Speaker 3:** I know that when I had my marrow [00:10:10] taken out I had the most profound cravings to eat [00:10:15] bone marrow, and I'd flown to San Francisco afterwards.

There's a restaurant called Epic [00:10:20] Steakhouse that's there on the water, and I was just jonesing in a way I'd [00:10:25] never have for bone marrow. I like bone marrow on my ribeye, but, so I go to this restaurant, [00:10:30] and I was so tired after this brutal stem cell procedure, which doesn't happen when you just [00:10:35] take stem regen pills, but I was so cooked that I went in and I turned a right into [00:10:40] a fish restaurant and I sat down and I'm like, there's no steak on the menu.

What happened to my [00:10:45] restaurant? And so i'm traumatized over like a bone marrow you recovered I did [00:10:50] recover, but it feels like the way you would increase bone marrow would be eat bone marrow. [00:10:55] Kind of a Chinese medicine perspective, but I think that works because your body at least has the materials [00:11:00] egg yolks, particularly raw egg yolks, fatty cuts of meat choline, sources like that, [00:11:05] making sure there's enough iron and a lot of the micro minerals, trace minerals, things like that.

Those would be [00:11:10] really important for bone marrow because mineral deficiencies are going to block that at the start. And this is [00:11:15] why bone I focus on things like minerals, one of the things I'm doing for longevity, like the most [00:11:20] boring, like have enough minerals, have enough vitamin D, right? So we get that [00:11:25] going and then there's all these different biohacks.

That it feels like [00:11:30] support stem cells, and one of them would be something like PEMF. So you [00:11:35] could possibly eat a bunch of nutrients that support your bone marrow, and you could [00:11:40] use PEMF on the parts of the body that do that. Now, what is PEMF going to do [00:11:45] if you're taking stem region? Do they work together?

**Speaker:** On the bone marrow, you pretty much, like, [00:11:50] mentioned everything that is, that is relevant. So there is, I mean, I, I love to talk about [00:11:55] traditional Chinese medicine and all the scientists coming from observing nature, uh, [00:12:00] from a purely Western medical standpoint, when you cook the bone marrow, [00:12:05] you have no cells that are alive.

Uh, no growth factors are in tact. So all of this is [00:12:10] gone. So technically you would say there's no link between eating bone marrow and what it [00:12:15] would have as an effect on the bone marrow. But I'm not quite sure that it's

**Speaker 3:** that simple. [00:12:20] It's mostly a nutrient thing. Right. And there's a bunch of haters out there like, well, there's no evidence that [00:12:25] eating collagen affects your skin.

I'm like, guys, I don't know if you've looked at those studies. I have, [00:12:30] but there's three different studies that show, oh, many. It's a signaling factor. But [00:12:35] what I do know straight up is if the body needs nutrients to make bone marrow, if you [00:12:40] eat bone marrow, the nutrients will be in it, right? And then you can convert them.

And if you're lacking [00:12:45] something, it can't. So I'm not saying eating bone marrow causes your grown bone marrow. Okay. I'm saying [00:12:50] eating bone marrow means you'll have the materials as long as you can get the signal to make bone marrow. [00:12:55] And then you take stem regen afterwards, which is going to cause the bone marrow to [00:13:00] release more stem cells.

Okay, that's kind of cool. So healthier bone [00:13:05] marrow plus stem regen.

**Speaker:** I'm taking a [00:13:10] leap here. I cannot tell you that the science is there. However, one thing that we [00:13:15] completely know in the world of medicine and oncology is that you have people that are called [00:13:20] poor mobilizers and people that are called good mobilizers, people who release stem cells [00:13:25] easily.

The more you release stem cells, the The more your bone marrow gets better at releasing stem [00:13:30] cells.

**Speaker 3:** Oh, so it's like, so that's a reality. You're training your bone marrow to be better at making stem cells.

**Speaker:** In a way. [00:13:35] So what I, the leap that I, that I'm, that I can probably not take scientifically, but it's just [00:13:40] an interesting concept.

If you start to release more stem cells, are you going to [00:13:45] build a stronger bone marrow over time? We know from the work that we have done that if we [00:13:50] test somebody was naive, meaning meaning that person has never taken any of these herbal extract [00:13:55] that we have shown you. Triggered the release of stem cells from the bone marrow and we test them.

On [00:14:00] day one, when it's, it's the first time that they're taking it, then they take it every day and we [00:14:05] test them, let's say, a month later, their response a month later is stronger than, than it was on [00:14:10] day one. Okay. So we have seen that. Got it. But, but can I draw the [00:14:15] conclusion to say, therefore, the more you take it over time, the stronger your bone marrow [00:14:20] is?

I don't know if I can go that far. It's an interesting concept. Okay. But to go back [00:14:25] to your to your question about PMF, there is an amazing synergy with PMF. [00:14:30] Actually, there's an amazing synergy with a lot of modalities. And if I take one stem back first [00:14:35] to put that into the greater context, For most people, stem cell is this, it's [00:14:40] this new thing.

Like we just discovered stem cells. It's an injection. It's, it's, it's new. [00:14:45] And the more we dive into stem cell research, the more we need to realize [00:14:50] it's like your immune system. It's like oxygen in your body. Like it's everywhere. [00:14:55] Now we find them in urine and saliva. It's like any body fluid is likely [00:15:00] to have stem cells.

They are really everywhere. everywhere. So, and they are the body's repair [00:15:05] system. So if I answer the question in a very broad way, I would say anything [00:15:10] that has been documented or experience in the past or our history to [00:15:15] boost the body's ability to repair, most likely it's leveraging in one way or [00:15:20] another stem cell function in the body.

And PMF is a pure example of this. We know [00:15:25] PMF accelerates recovery from injuries, joint, bone, ligament, muscle. [00:15:30] And what we know today is that if you apply PMF, it's going to pull more [00:15:35] stem cells in that area. It's going to boost the ability of these stem cells to [00:15:40] migrate into tissue. It's going to stimulate the ability of stem cells to proliferate, multiply in [00:15:45] that tissue.

And if you apply PMF to a test tube with you, you [00:15:50] enhance their ability. To become like chondrocytes to make bones tendon stem [00:15:55] cells ligament muscle. So, so the, the whole machinery is there for [00:16:00] PMF basically leveraging stem cells to repair a joint. So now you use [00:16:05] PMF and you simply put more stem cells in circulation so you, pmm f can leverage more [00:16:10] stem cells.

So in that way it is an absolutely like strong, strong [00:16:15] synergy. to take stem region release when somebody is doing PMF, like two hours, two hours [00:16:20] before you go for your PMF session, take two, two or four capsules of stem region to [00:16:25] really boost the number of stem cells available to be leveraged. And so two to four [00:16:30] hours is the window.

Yeah, two to four. I would say two hours is an ideal window. Okay, it will, [00:16:35] the biggest increase will be between two to four hours.[00:16:40]

**Speaker 3:** The model that I use for reconstituting the body [00:16:45] with biohacking is that you must have raw materials present. You must have [00:16:50] energy present. So raw materials is what are you eating, right? What are the nutrients you're getting [00:16:55] in? And then how do you get energy in? That's mitochondrial function, and that's Not [00:17:00] really what nutrients you have, they must be sufficient.

You have to have enough calories for that. And [00:17:05] then you have to have a signal. And the signal tells the body you need to change. [00:17:10] And when the signal's there, the body changes because of stem cells. What we're doing here with all [00:17:15] these things is saying, Alright, make sure you ate the right stuff. Make sure that you had enough energy [00:17:20] because you ate enough.

So fasting is good, but if you're totally fasted all the time, you're not [00:17:25] eating our calories. We've both seen people do this all the time. Over fasting is bad for you. Alright, Or calories you just can't use, [00:17:30] insulin resistance, all that. We get into this, all right, do I do squats? Do I do [00:17:35] PMF or any of the other many different biohacks?

If you do those and the [00:17:40] body has enough stem cells, you can change the body. You can change the mind. You can fix almost anything. [00:17:45] And the neat hack that StemRegen has, because of all the work you've done [00:17:50] over the last 20 years, is now we can increase that layer of what's happening inside the body. [00:17:55] So like, great, let's wake up, let's do what I was going to do, add the stem [00:18:00] regen a couple hours before, and then when the body says, okay, I'm all set up to [00:18:05] transform, I have more stem cells to do it.

But if you don't have the signal, [00:18:10] or you don't have nutrient sufficiency, It's not going to be able to build new tissue. If you don't have enough [00:18:15] zinc, how are you going to build it? You can't, right? How do people [00:18:20] know, do I have a problem with mitochondrial function or a problem with

**Speaker:** stem cells? I mean, it's a hard question, [00:18:25] but first, what you described here is exactly, it's, it's, it's all correct.[00:18:30]

But I just want to emphasize one thing. Okay. The unit. in the body. Like if you break down the [00:18:35] body down to like, it's, it's, it's simplest component. It's the cell. [00:18:40] Everything is a cell. I thought you were going to say butter.[00:18:45]

It's a cell. So, so what you describe is right. That cell needs the [00:18:50] right signals to talk to it. The right stimulation. It needs the right. [00:18:55] Nutrients to be able to do what that cell needs to do. Take away the cell, your nutrients are worthless. [00:19:00] It doesn't mean anything. Take the cell without the nutrient, that cell cannot do anything.

So [00:19:05] all of these are essential to reconstituting, rebuilding the body. [00:19:10] But that cell, where does it come from? It comes from stem cells. So it's, it's [00:19:15] something that absolutely has to be inserted in the middle of basically any kind [00:19:20] of health journey, bio acting journey, like, Everything is a cell [00:19:25] cells have a specific lifetime.

They are replaced and they're replaced by stem [00:19:30] cells. Interesting. So in this whole concept, mitochondrial function or cells [00:19:35] or stem cells, they're, they're really hand in hand. And what I mean is that I mentioned that [00:19:40] before a stem cell is act is irrelevant is stem [00:19:45] cell, that, that is released and migrate, let's say in, in a muscle in your pancreas or liver, wherever.

[00:19:50] And it becomes now a new liver cell. is entirely irrelevant. You've got billions [00:19:55] of cells in your liver. You had one. It's irrelevant. What is relevant is that that stem [00:20:00] cell will multiply and will become maybe a million tissue cells. So if a [00:20:05] million stem cells migrate in a tissue and all of them can become hundreds of thousands [00:20:10] of tissue cells, now you've got really a capacity to repair.

So, you know, The, [00:20:15] this process of amplification of a stem cells in your tissue is a [00:20:20] thousand percent dependent on mitochondrial biogenesis, meaning each [00:20:25] cell needs to be able to do its own energy. So it absolutely goes together. [00:20:30] If you boost mitochondrial function in an old cell. It's great, [00:20:35] but it's still not going to lead you very far.

You need to have new cells that are going to [00:20:40] come back and rejuvenate the tissue. Now give strong mitochondrial function to those new [00:20:45] cells. And you're essentially bringing like two powerful things together to make like the [00:20:50] greatest outcome.

**Speaker 3:** It's one of the reasons that in a lot of my books, I write about [00:20:55] mechanisms to induce autophagy, which is let's get rid of the old cells or mitophagy, get rid [00:21:00] of the old mitochondria.

And when the cells are replaced, you have to have stem cells for them to be [00:21:05] replaced. When you're doing intermittent fasting or longer fasting for autophagy, [00:21:10] when do you take stem regen? Before, during, or after the fast?

**Speaker:** Put aside the [00:21:15] sort of the intellectual answer, uh, because we can take it in so many different, [00:21:20] different direction.

By experience, if you take stem regen release [00:21:25] during your fast, Your fast is just stronger. Like, like it's easier. [00:21:30] Uh, it, all parts of your fast just feel more potent. [00:21:35] So I would say just take it the whole time during a fast. There's nothing in it that's going to break a fast [00:21:40] that I'm aware of. There's nothing in it that will break a fast.

I mean, the level of calories and nutrients is, is [00:21:45] meaningless. What we know from a fast is that you will increase the number of stem cells during your fast, [00:21:50] But if you take stem cells from the blood during a fast, you will see that they're sluggish. [00:21:55] Like they're not really proliferating very well, migrating very well.

But [00:22:00] right after the fast, in the refeeding period, now if you take a stem cells from the [00:22:05] blood or from the bone marrow, you realize that they're migrating better, they're proliferating better. So they have [00:22:10] rejuvenated. So the, the, the impact of a fast on your stem cells is really [00:22:15] after the fast.

**Speaker 3:** One of the things that bodybuilders will do is they [00:22:20] will increase their insulin levels.

So you lift heavy Then you have some protein that [00:22:25] increases mTOR and insulin, and then you have some sugar or some carbs that [00:22:30] then drives muscles to grow faster. Is having more carbs or more [00:22:35] insulin beneficial when you release stem cells?

**Speaker:** I don't know if I can answer that question directly. [00:22:40] However, what we know is that.

There's a direct link between how many stem cells in [00:22:45] circulation and a whole slew of age related diseases. If you have fewer stem [00:22:50] cells, like you count the number of stem cells in people with heart disease, arterial [00:22:55] sclerosis, vascular disease, erectile dysfunction, a whole slew of problems. They all have fewer stem cells.

[00:23:00] But diabetes, you see the same thing in diabetes, but diabetes as a A different [00:23:05] relationship, meaning that you have fewer stem cells in somebody who's diabetic, [00:23:10] but also the higher glycemia creating glycation also [00:23:15] suppresses stem cell release. So glycation suppresses release. the [00:23:20] natural role of stem cells in the body.

So

**Speaker 3:** you

**Speaker:** don't

**Speaker 3:** want elevated sugar for a long period.

**Speaker:** Correct. Correct. So [00:23:25] the moment that you have elevated sugar over long periods of time and you increase the production of, uh, [00:23:30] of, of, um, what, what, what is called, um, like Asians. Yeah. Yeah. Um, advanced [00:23:35] glycation. And you produce that in the body, it will

**Speaker 3:** suppress Stem cell [00:23:40] mobilization, yet another reason not to chronically eat sugar.

Correct. So you could be moderate to [00:23:45] low carb, low glycemic, and then you work out and you've taken your stem regen right before the [00:23:50] workout or two hours before. After the workout, you can have carbs and your blood sugar will go [00:23:55] up. It should go right back down. Correct. Going to get a lot of aging from that, but you might get more muscle [00:24:00] recruitment.

**Speaker:** Correct. You need to rebuild glycogen. You need to support normal physiology of muscle. [00:24:05] Uh, just be aware of. Long periods of time, I do believe, and I know it's, [00:24:10] it's a, it's something that is almost impossible to test, but I do believe that longevity can [00:24:15] can be predicted if we could measure how much time in your life you spend [00:24:20] with higher glycemia, if we could measure that, It would probably like the [00:24:25] best market to say, I was going to be your health, you know, when you're past 60, it definitely makes it.

So I [00:24:30] would say, keep your glycemia as low as possible. You can have these spike, [00:24:35] but with a good insulin response, so they come back down and you can time them, you know, with, with [00:24:40] muscle activity or physical activity, because yeah, you need to rebuild glycogen. No question.

**Speaker 3:** There's a [00:24:45] 1970s doctor who says you exercise 2 3 hours a day, and [00:24:50] the only thing that matters is muscle mass, and it's like exercise, exercise, exercise, as a path to longevity.[00:24:55]

What does overtraining do for stem cells?

**Speaker:** I don't know if overtraining [00:25:00] has a negative impact on stem cells, but there's one thing that is clear. When you [00:25:05] do exercise physically with intensity, You really stem cells, right? So [00:25:10] somewhere you could say, well, physical activity is a way to for longevity because you really [00:25:15] stem cells.

So you have more stem cells in circulation. But if you really look at [00:25:20] life, like people who have trained over long periods of time, they don't [00:25:25] necessarily out of the physical activity that they did when they were between, let's say [00:25:30] 15 and 40 years of age, when they're 60, they don't necessarily have are [00:25:35] Protected against all these age related problems.

If not, it's probably more. Yeah, look at the triathletes. [00:25:40] Correct. They're not doing well. Correct. So I think that you release stem [00:25:45] cells, but you also create such an environment in your body with so [00:25:50] much repair that is needed by the constant assault to the body that at the end of the [00:25:55] day, I think that you're sucking up.

A lot of your healing potential toward a [00:26:00] multitude of micro injuries that at the end of the day, it may not be like a positive sum.

**Speaker 3:** [00:26:05] Yeah. There's also high cortisol from overtraining. What does high cortisol do to stem cells? Yeah, you go. It [00:26:10] suppresses stem cells ability to migrate into tissue and to proliferate.

It's one of the [00:26:15] reasons that I ended up after about 10 years of running upgrade labs, [00:26:20] look, let's make sure that the environment inside the body is primed. Let's put an intense [00:26:25] signal, whether it's for cardiometabolic or for muscle, but a brief intense signal. [00:26:30] And then let's make sure that we have a strong recovery, so cortisol doesn't get too elevated.[00:26:35]

And then the stem cells can really do their job. And I'm seeing better results [00:26:40] from less stimulation, as long as the signal is clean that's [00:26:45] signaling it. And I think that's a good path to longevity. And I've definitely seen the numbers [00:26:50] improve in people where they're, you know, losing weight, bone density is increasing and all the things that you'd expect.

[00:26:55] What is your exercise?

**Speaker:** I don't do a whole lot. I need to, I need to increase that and [00:27:00] do, and do much more right now. Shame, , shame, don't you? More exercise there, .

**Speaker 3:** I, [00:27:05] I, I'm 20 minutes a week, dude, but I do it upgrade loud. So, I, uh, I, I think [00:27:10] this idea that more exercises better isn't born out in research, but.[00:27:15]

Fitness is good and moving like walking is good. But the idea that [00:27:20] you have to do zone two cardio for eight hours a week to live forever, it's not in the numbers.

**Speaker:** My [00:27:25] physical activities essentially. I walk a lot. There you go. Uh, I walk a lot. I I live [00:27:30] on the, on the, on the, On a farm, on a piece of land where I need to chop wood, I need to [00:27:35] shovel snow, I need to carry chop trees, carry them, like, like, it's just a lot of work on [00:27:40] the land.

For me, that's the physical activity that I really like. Like, it recruits every [00:27:45] single muscle of your body. It's not that hard. targeted to one thing. So that's the physical [00:27:50] activity that, that I like to do. I, I canoe. Uh, so it's really good for the core. Um, [00:27:55] so

**Speaker 3:** that's, that's what I like. Have you heard of the Japanese high intensity [00:28:00] walking or interval walking?

I've heard of it. It's kind of funny, but you're getting better results [00:28:05] than 10, 000 steps a day or even better results than some zone [00:28:10] two cardio. And it takes a half hour a day and it's like walk fast for three minutes, walk slow for three [00:28:15] minutes. And that's going to create a lot of mobilization, gets all the tissue flowing, it [00:28:20] changes the water in the cells so that you get microcirculation.

And if you stack that with, [00:28:25] say, stem regen that actually is a really important signal. And I [00:28:30] don't think you have to go, you know, sweat it out and, and suffer the way some people do. I don't, [00:28:35] I don't fetishize suffering that way, especially if to live a long [00:28:40] time, if I have to spend eight hours a day on my longevity practice, you need to extend your [00:28:45] life by 50 percent just to make up for all the time you spent, you know, miserable doing that stuff.[00:28:50]

So. I like, I like your practice. Move is important and make sure [00:28:55] you have adequate strength, adequate muscle.

**Speaker:** I think you're pointing to something that I think is, I think the [00:29:00] science is there right now. We used to think that the more time you spent [00:29:05] exercising, the better it is for muscle mass and, and, and just longevity.

And I think it's [00:29:10] clear now with. a lot of science and longevity. It's not the intensity that matters. [00:29:15] It's really, uh, the, the, the consistency of just how you move your body. [00:29:20] And there's an stem cell bring a very interesting new thing in that picture is that, [00:29:25] you know, when you look at it, like muscle cells are very well known to be multi nucleated.

[00:29:30] Most cells have one nucleus. Muscle cells have many nuclei. And the [00:29:35] reason why they have many nuclei is that they grow through the fusion of satellite cells with [00:29:40] muscle fibers. So in satellite cells are muscle stem cells, right? So, so [00:29:45] the process of hypertrophy, like your muscle growing after physical activity [00:29:50] is entirely driven by stem cells.

So the moment that you had stem cells to that [00:29:55] component, again, you can leverage the little bit of activity that you do to basically [00:30:00] amplify what you gain in terms of muscle mass.

**Speaker 3:** There's other things that you can stack from the [00:30:05] world of biohacking with STEM Regen, and I've got a really interesting story that involves [00:30:10] you and another guy who presented on stage at the biohacking conference.

So you talked [00:30:15] about STEM Regen, and Dr. Jerry Tennant talked about electrical stimulation of [00:30:20] tissues for healing. Now, Dr. Tennant is a legend [00:30:25] in the field. He figured out the voltage of healing. [00:30:30] 25 years ago, and when my dad was in his early fifties, he started getting [00:30:35] macular degeneration, and this is when I know that you know what that is.

But a [00:30:40] lot of our listeners may not. This is when inside your eyes. It's a leading cause of blindness where you [00:30:45] have problems with the macula. that involved mitochondrial function. So [00:30:50] I knew about Dr. Tennant's work and I said, Hey dad, you should check this out. So we did. And he did it reliably for [00:30:55] six months.

It was eight minutes of stimulating acupuncture points around the eyes and it [00:31:00] cured his macular degeneration, but it took months. Well, [00:31:05] I was with him two days ago and he said, you know what? My macular degeneration [00:31:10] finally came back. He's been on stem region for a year, actually, maybe two years. You guys have been sending it to him [00:31:15] and they, they are.

My parents never say that things work. We can't really [00:31:20] tell. And they said, we think that one's working. So, they like STEM Regen. With [00:31:25] STEM Regen, and he took out his old Jerry Tennant thing, and he did his eyes again. In two weeks, [00:31:30] the spots he had where he couldn't see, he said, the spots are gone. I just have a few little sparkles on the [00:31:35] edges, but I can see in the middle of my vision again.

I think that's because stem [00:31:40] regen plus electrical stimulation did that. And so the idea is you can amplify [00:31:45] your biohacks with this. And, uh, I'm guessing he'll probably hear this, but Dr. Tennant, [00:31:50] that's 25 years of progress in my family, so thanks. It was an honor to have him on stage. [00:31:55]

**Speaker:** You know, stem cells can become everything, including cells of the eye, cells of [00:32:00] the cornea.

The only problem with the eye is that access to the eye is [00:32:05] very limited because of poor blood circulation. So the moment you do something around the eye to enhance that, [00:32:10] yeah, stem cells can repair. I've been doing some work lately

**Speaker 3:** with tennis professionals, like [00:32:15] super high ranking ones. Stem region doesn't have any ingredients that are banned for sport, right?

**Speaker:** [00:32:20] We have now a version of stem region release that is called sport, and [00:32:25] that one is NSF certified. Beautiful. And it's only because the original stem [00:32:30] region release formula has colostrum. Colostrum is a natural source for insulin growth [00:32:35] factor. And insulin growth factor is on the water list. I don't think you would ever test colostrum.

[00:32:40] Positive, but NSF will not certify a product that contains cholesterol. So [00:32:45] sport would be, would be what to take.

**Speaker 3:** Well, if you're not a professional athlete, you can go to the [00:32:50] WADA list for a list of all the things that work really well for human performance and longevity [00:32:55] and WADA, you guys need to get your heads out of your asses.

The enhanced games are coming for your jobs and I'm with them. [00:33:00]

**Speaker:** Some of it is ridiculous.

**Speaker 3:** Yeah. And when you tell an athlete that they're not allowed to heal using the [00:33:05] things everyone else has, it's because you hate the athlete. The reason [00:33:10] I was thinking about all of this is, what do we know about either cardiorespiratory [00:33:15] function or muscle synthesis with stem cells or with stem regen?

[00:33:20] Have you seen Improvements in the rate of change from taking it?

**Speaker:** Yeah, like, like I [00:33:25] was mentioning before, stem cells will go from the blood, reconstitute the [00:33:30] stem cell layer of muscles called satellite cells, which are a crucial component of [00:33:35] muscle hypertrophy. So muscle growth. So, so the more stem cells you have, the more you grow, but [00:33:40] you grow your muscle.

But to me, the story around this is a little bit [00:33:45] deeper in the sense that as you, let's say you passed 40, any injury that you [00:33:50] have is happening at a place where you had previous micro injuries, [00:33:55] micro lesions that did not repair properly. Every single time that you go to the gym, [00:34:00] And you, you, you feel that you cannot go full out.

It's because you have these micro [00:34:05] lesions in your body. Micro lesions will inhibit full muscle contraction as a protective [00:34:10] mechanism. It's a nervous system protection. So if you can accelerate the repair of [00:34:15] these micro lesions, Every single time that you go to the gym, you will get more out [00:34:20] of the time that you're spending in the gym.

And also by repairing all these micro lesions, you protect [00:34:25] yourself against future, future injuries. So to me, the role of stem cells [00:34:30] in, in recovery. After physical activity is really all into [00:34:35] hypertrophy, but also like protection and gaining more out of the time that you spend in the [00:34:40] gym.

**Speaker 3:** Another area that's really important to me is traumatic brain injury [00:34:45] and Nick Foles has been on the podcast.

Anyone who is. [00:34:50] played football, played soccer, hockey, combat sports. The [00:34:55] list goes on and on. I'm on Dr. Daniel Amon's board of directors who [00:35:00] actually showed that long term concussive damage is an issue. And then we have all of our combat [00:35:05] vets. So I've been for years working on what do I do before I'm likely to hit my [00:35:10] head?

And what do I do right after? Uh, and I've certainly had my own TBIs I've [00:35:15] talked about on the show. So. What do stem cells have to do with preventing or [00:35:20] recovering from brain injuries?

**Speaker:** In 1996, so in the very [00:35:25] early days when I was working with this blue green algae, not understanding how it [00:35:30] was working, we later discovered that it act as a stem cell mobilizer.

But [00:35:35] all of this started like the whole quest started when I got a phone call one day from a clinic in [00:35:40] Albuquerque, they were doing a neurofeedback treatment for [00:35:45] soldiers coming back from Iraq war. That's pretty unusual in 1996, 1996. [00:35:50] So they were still having like PTSD, mild traumatic brain injury, which affected like so [00:35:55] many things in their lives.

And they were using neurofeedback. to help in the [00:36:00] treatment of, of, of this condition. And then they showed up two of their patients [00:36:05] recovered from mild traumatic brain injury in record time, like five to six weeks. [00:36:10] And they wondered why. And as they went back to their medical record, they saw that these two [00:36:15] guys randomly were consuming this blue green algae at the time.

So it, it, it started the [00:36:20] whole research project where at the end we had about 150, uh, of these, of these [00:36:25] patients in the, in the trial. And across the board. The moment that we start [00:36:30] releasing stem cells in these individuals, they recover much faster. So there's [00:36:35] no question in my mind that one of the, the mechanism of action of stem region [00:36:40] release in people who have a whole slew of sort of like vague [00:36:45] symptoms, because mild traumatic brain injury shows All kinds of ways sucks.

Yeah. Poor memories, poor [00:36:50] concentration allergies, high blood pressure emotional regulation, [00:36:55] personality, sleep. Like there's so many different things that can be dysregulated after mild [00:37:00] traumatic brain injury that when people say, I mean, stem region release does change a lot of things in my [00:37:05] life that are vague like this.

I'm always thinking, have we resolved the problem? An [00:37:10] MTBI that was there in the background because MTBI, I think my background is [00:37:15] neuroscience. It's one of the most undiagnosed condition in the world. [00:37:20] You slip on the eyes, you hit your head, that's it. You get punched, anything you get [00:37:25] a hit on the head, even, even not a, not very big one.

And then you can have [00:37:30] mild traumatic brain injury and there are signs to, to diagnose it, uh, yourself. [00:37:35] Um, so. Anyway, so yes, putting more stem cells in circulation has been shown to be [00:37:40] extremely beneficial for MTBI.

**Speaker 3:** We find that about 90 percent of people who come [00:37:45] to 40 Years of Zen, when we're running our initial brain scans on them to do neurofeedback, [00:37:50] they have signs of brain injury.

And it's small and [00:37:55] sometimes it's big and you can look someone straight in the eyes and say, Have you ever hit your head? And they'll say no. But if you ask him [00:38:00] five times, like, Oh, come to think of it, when I was seven, I was unconscious for three days. Like, yeah, your brain [00:38:05] shows that still. And I've seen a lot of marriages and [00:38:10] relationships that just get broken up when someone hits their head.

It's crazy. So [00:38:15] if stem cells can help with that, and there's all sorts of cognitive stuff you can do, whether it's [00:38:20] behavioral, um, some of the vision and vestibular stuff but I think nutritional, [00:38:25] sleep, darkness, circadian biology, stem cells, mitochondrial function, they all matter. [00:38:30] And if you know that you've hit your head, it seems like taking stem regen would be a really good idea.

[00:38:35] Yeah. What would you sack with it?

**Speaker:** Neurofeedback. Okay. Neurofeedback, uh, [00:38:40] transcranial microstimulation could be like good ways. I would say, honestly, do [00:38:45] something with your brain. Neurofeedback is probably the most direct. Right. But, uh, I don't know. Go learn a new [00:38:50] language. Do something with your brain that is going to activate your brain and force your brain to [00:38:55] reconnect while you put more stem cells in circulation.

That's probably the best thing to do.

**Speaker 3:** I would add [00:39:00] red and infrared light on the brain. Correct. That makes a big difference. Um, the 528i laser. [00:39:05] Uh huh. Yeah. That's another big one. And it's funny, any of these things, you stack it with more [00:39:10] stem cells or more mitochondrial function, you get more results, get more results, which is [00:39:15] kind of cool.

[00:39:20] Another thing that has fascinated me is vibration. I started talking about whole body [00:39:25] vibration about 15 years ago when I started the biohacking movement, and people thought I was just [00:39:30] crazy. Like, look at this weird guy saying you should stand on a plate. I'm like, guys, NASA uses it to [00:39:35] recover astronauts.

I'm pretty sure it's real. You just haven't heard of this. You're making fun of it. So [00:39:40] when we culture cells, including stem cells, if you ever seen videos of them, [00:39:45] like they're on these things that are gently swinging the cells back and forth, [00:39:50] what is the function of vibration or other things like even like a [00:39:55] shockwave in stem cells?

**Speaker:** Well, there's a study that came out not long ago that is actually [00:40:00] showing that if you count stem cells before and after sitting on one of these vibration [00:40:05] plate, you get more stem cells in circulation. Oh, wow. There you go. So, so there's, there's a, and, and I, I would [00:40:10] assume it's purely a mechanical, Phenomenon stem cells adhere to the bone marrow [00:40:15] to the bone marrow micro environment through adhesion molecule.

So these adhesion molecules have a [00:40:20] certain strength if you want, but if you start to apply a lot of vibration, well, they detach from the bone [00:40:25] marrow environment and they end up in the blood. So if you, so you, you do vibration with [00:40:30] stem region release, and then you basically enhance the release that you get from either one of them.[00:40:35]

So it's another great stack. Just sit on a vibration plate. An hour or two after taking stem [00:40:40] region release,

**Speaker 3:** and it's funny, you could take stem region release and then go into one of our upgrade labs [00:40:45] locations and get all of the biohacking tech we just talked about, including the whole body vibration [00:40:50] and attention because we know that a shearing force has an effect [00:40:55] on the fascia and on muscle and you get sharing force from jumping up and down or from whole body [00:41:00] vibration.

But there's something else happening. That's interesting. It's a piezoelectric effect on cell [00:41:05] membranes and what piezoelectric means. Yeah. Is that when you move something or vibrate something, it makes [00:41:10] a small amount of electricity. Cells like electricity, and cell membranes are piezoelectric. [00:41:15] So when you vibrate everything, you're kind of charging the system, you're changing the structure of water.

[00:41:20] Can you talk about what that change, whether it's from vibration or sunlight or whatever, the change in [00:41:25] water? Has to do with stem cells. I'm

**Speaker:** not aware of any research with water [00:41:30] and specifically stem cells, but, but it's clear that, I mean, you talked about [00:41:35] piezoelectric energy. I think, I think it's interesting here to go back to the, to the, really the [00:41:40] basics, a cell, As a difference of electrical potential between the inside [00:41:45] and the outside, this is normally studied in neurons because [00:41:50] electrical current is essential to, to brain function, but it's in every single cells of the [00:41:55] body.

So when a cell uses ATP, most of the use of that ADP, the [00:42:00] energy that is produced by a mitochondria is to pump certain iron out ions [00:42:05] out of the cell and others inside the cell to maintain, I would say artificially or [00:42:10] actively to maintain the difference of potential because it's like, it's like a [00:42:15] hydroelectric dam.

You put the water on top and whenever you need energy, you open the dam. So [00:42:20] you let these ion cross the membrane and these ions come out. carry nutrients with them through [00:42:25] the membrane. So, so the cell needs this difference of potential in order to [00:42:30] function optimally. So, so anything that brings back, and this is the work of Dr.

Tennant that [00:42:35] you've talked about, this is the work that, that, that, that, what the plates, vibrating plate is doing with piezoelectric [00:42:40] energy, you recharge cells. So this is crucial. This [00:42:45] passage, the vibration that will allow this passage of ions is also [00:42:50] enhanced by proper water. And I remember, um, in, um, in [00:42:55] climate lake where this blue green algae is growing, there's something that is very unique in that lake.

If you walk [00:43:00] up to the ed of the rivers that are feeding that lake. You can walk in. That's one point. There's [00:43:05] a little lagoon and it's where it starts. Like you see the water bubbling from around [00:43:10] and that water bubbling from the ground. If you go with a test tube, but you put your hand in this hole [00:43:15] and you take a water sample, the water is four degrees C.

So roughly about, let's say 30, 39, 38, [00:43:20] 39 degrees Fahrenheit. It's cold. It's cold. PH 8. [00:43:25] Mm hmm. And it has no minerals. Slightly alkaline. Okay. Slightly alkaline. No minerals. So it's [00:43:30] alkaline because it's restructured. Got it. So it's, it's believed that it's coming from crater lake [00:43:35] with 2000 feet of a column of water pressurizing this water through the [00:43:40] underground and that pressure will restructures the water.

And the reason why I'm saying this is that you [00:43:45] take a glass of that water at four degrees C and you drink it and you don't feel the [00:43:50] cold in your stomach. Interesting. It's amazing. This water has no surface tension. [00:43:55] So you put a drop on the table, it just flattens. Yeah. And my point is that you don't feel the cold in your [00:44:00] stomach is I think the water gets absorbed as it's getting in through your mouth, your [00:44:05] esophagus.

So Water, that kind of water is amazing [00:44:10] for how it can feed and hydrate cells, allow the proper [00:44:15] passage of nutrients, proper exchange to a membrane. That is essential to [00:44:20] every single cell in the body, including stem cells. I'm not aware that it's [00:44:25] uniquely important for stem cells, but it's really important for every single, like water.

We talked about this [00:44:30] before. Yeah. Water is just like. I'm not saying nobody talks about water. There's a lot of [00:44:35] discussions about water. I think most people do not realize how [00:44:40] paramount it is for health to have good water in your body. You're 80 percent water. It's [00:44:45] everywhere. Good water is essential. And I'm not talking about alkaline water.

I'm talking about [00:44:50] Restructured water.

**Speaker 3:** It's funny. Some of the keyword censors on [00:44:55] social media, if you talk about structured water, they actually blip it as not being scientific, which is [00:45:00] insane. I don't trust Mark Zuckerberg or any social media company to tell me what is science. [00:45:05] Unless it's the science of manipulating people.

They're probably good at that. But. [00:45:10] Dr. Jarrod Pollack, um, out at the University of Washington has written several big [00:45:15] books and he talks about something called exclusion zone water. And this is water that you [00:45:20] can see on a microscope is different and it forms, interestingly, [00:45:25] from vibration or from ultraviolet [00:45:30] light or from body heat.

Mm hmm. And it forms when water is held up [00:45:35] against a lipid membrane or just any kind of fat. So, if you look at a [00:45:40] cell wall from the algae, look at what's going on with that water. The reason that that water [00:45:45] special is it's exclusions on water and the reason exclusion of water is so important in [00:45:50] our bodies is that if you have stem cells or [00:45:55] even red blood cells, micro capillaries are not big enough for them to go through.

So something is [00:46:00] pulling them through and what that is, is exclusion zone water and [00:46:05] you can increase that with infrared light on the body. So that means. If you have more [00:46:10] exclusions on water because your whole body vibrated, because you walked, because you were in the sun, because you used an infrared sauna, [00:46:15] because you had enough hydration in the first place, or the other way to make [00:46:20] exclusions on water would be to put the fat in water in a blender with [00:46:25] heat.

And yes, I funded the research that Dr. Pollack did showing that if you put [00:46:30] butter and MCT and hot water and you blend it up that you get very large amounts of this kind [00:46:35] of water. similar to what you're finding in that lake. So whatever your method is, if you have enough of [00:46:40] that and you have stem cells circulating, now the stem cells can get there [00:46:45] because you had the right water.

And the Tibetans somehow knew this, right? They did [00:46:50] yak butter tea years ago. So if you're looking to say, all right, I'm going to take my stem region and I [00:46:55] want the stem cells that my body is going to release to get everywhere in the body. So what biohacks will I [00:47:00] do today? Yeah. And it may be the infrared sauna.

It may be going for a walk. It may be sunbathing. It [00:47:05] may be drinking some coffee. I would suggest danger coffee, uh, with butter and MCT [00:47:10] in it. Or it could be all of the different biohacks, the pulse, the electromagnetic [00:47:15] stuff, or a regular workout. Any of those are going to improve the condition of water in your [00:47:20] body, which means that the stem cells can get there.

And then you guys make, in [00:47:25] addition to the release, which is the primary one that I've used. You make Mobilize, which also [00:47:30] helps stem cells move around in the body. How does Mobilize make stem cells move [00:47:35] around if it's not hacking the water?

**Speaker:** What you described there is, is, is paramount. [00:47:40] Microcirculation, and often times, like, people will go to, to, to, to a lab, get, [00:47:45] They're the blood test.

You can tell all the great things that is in their blood, but that [00:47:50] absolutely, it means nothing. If that blood does not reach your capillaries because the [00:47:55] unit of your health is the cell, the cell must receive all those nutrients and [00:48:00] every single cell is the delivery system to that cells are fine, fine [00:48:05] vessels called capillaries that are very, very small.

And if you don't have proper [00:48:10] microcirculation in an area of your body, That area is deprived from proper nutrition, so you can [00:48:15] have all the great things in your blood. It has to reach your capillaries. That is true also for stem cells. [00:48:20] Stem cells can be up to 30 microns, so it [00:48:25] doesn't take a whole lot to to, Hinder the ability of stem cells to have [00:48:30] access to an area that is injured because an injury oftentimes has compromised is microcirculation.

[00:48:35] So everything that you mentioned works, red lights, PMF, exercise. All of these work. What we [00:48:40] did is that we approach it from a nutritional standpoint. So we have mobilized, which is [00:48:45] nattokinase, to digest fibrin in the blood, so it will increase blood fluidity. [00:48:50] entrainment is a crucial component for cells to circulate into fine vessels [00:48:55] if your blood flow is fast and entrains themselves into a capillaries, [00:49:00] uh, that helps themselves circulating into into these fine vessels.

So netokinase, then we need to [00:49:05] dilate arterioles with nitric oxide producer beetroot, kind of products, [00:49:10] Citrulline kind of ingredients. So your dilate cells. capillaries, sorry, arterioles. So you [00:49:15] bring more blood to capillaries. Capillaries are passive. So they will be extended [00:49:20] if their ability, if their elasticity is good enough.

So you need to [00:49:25] increase the elasticity of these capillaries. So we have a bunch of bioflavonoids herbal extract that have [00:49:30] been documented to increase this elasticity of capillaries and for cells to really [00:49:35] slide into cell into fine capillaries, you need to have a good layer of that is called the [00:49:40] glycocalyx.

So we have polysaccharides that have been shown to help rebuild the [00:49:45] glycocalyx. So these four technologies are put into Mobilize, so that as you [00:49:50] take it at the same time as you take release, you put stem cells in circulation. And when [00:49:55] the number of stem cells peak in the blood, you have increased mobility.

You have reduced the, uh, increased the [00:50:00] fluidity of your blood with natokinase. You've dilated your arterioles and [00:50:05] over time you've rebuilt capillaries glycocalyx. So you basically boost stem cells ability to [00:50:10] go where they need to go to repair in the body.

**Speaker 3:** I just saw a study about [00:50:15] natokinase. It was a relatively high dose, but the study showed that it was a reversing plaque in [00:50:20] arteries.

It's actually healing arteries. And I think a lot of listeners might've heard [00:50:25] of it because During the pandemic, we had this weird problem [00:50:30] with clotting, and strangely, the people who got injected had more problems with [00:50:35] that than, oh, how weird. Anyway, if clotting is your problem, [00:50:40] natokinase is your friend.

Absolutely. Natokinase breaks up thrombin, which is behind the [00:50:45] clotting and fibrinogen. So this is something I've taken either seropeptase or [00:50:50] natokinase every night for 20 plus years because blood flow is so important. So I love it [00:50:55] that you included the most powerful one, which is natokinase in StemRegen Mobilize.

So I have a [00:51:00] hard time remembering the, how to stack all three. So release is the [00:51:05] thing that StemRegen makes that causes stem cells to, to move out into the bloods like getting an [00:51:10] IV. Mobilize is what makes it so they can get into all the parts [00:51:15] of the body. And the other one was a do signal.

**Speaker:** And

**Speaker 3:** I don't understand that

**Speaker:** one very well.

[00:51:20] Okay. So. In 2001, 2002, we had access to [00:51:25] about 150 Alzheimer's patient in a hospital. Mm-hmm . And at the time this [00:51:30] idea had started to, to, to, to, to, to develop in my mind that [00:51:35] we are probably going, there's probably a link between how events, diseases. [00:51:40] and the number of stem cells in circulation, the more advanced, fewer stem cells are there to [00:51:45] repair.

So you don't get the repair. So the problem basically is advancing. So we, [00:51:50] we know today that it is true across the board for pretty much like every single disease. [00:51:55] And. except Alzheimer's. It's the same thing, but there's a, there's a little bit of a complexity with [00:52:00] Alzheimer's, which we saw. And now other people have published about that as well is that not [00:52:05] in everyone, but we did see very advanced Alzheimer's patients that had quite a bit [00:52:10] of stem cells in circulation.

So they weren't getting there. That's the point is that [00:52:15] what we saw in these patients that were advanced Alzheimer's, a lot of stem cells in [00:52:20] circulation is when we look at the stem cell more closely, they have lost their [00:52:25] ability to respond to the signal coming from the tissue. The stem cells have lost.

The stem [00:52:30] cells have lost their ability. The thing to understand is that that signal is [00:52:35] transient, meaning once the signal is told to migrate, A whole [00:52:40] cascade of reaction develop where you adhere to the capillary wall, you create a hole in the [00:52:45] capillary, you migrate to the capillary, there's a whole series of, of, of successive events [00:52:50] that are happening.

If you trigger this process outside of the capillary, [00:52:55] Then when the stem cell arrives in the capillary, she has lost, the stem cell has lost that ability to [00:53:00] migrate. So it's there, but it cannot migrate in the area if it is stimulated [00:53:05] outside of the area where the signal should be coming from. And that's what we need to understand.

[00:53:10] Inflammation is a localized signal that is mainly, its main function is to [00:53:15] tell stem cells where the problem is. So stem cells can, as they circulate, [00:53:20] migrate in that area and go and repair. If you get a problem that is chronic and [00:53:25] it's constantly signaling and it's not repairing, that signal leaks and it's [00:53:30] becoming your local signal has become systemic.

It's everywhere. So systemic [00:53:35] inflammation is systemic. essentially is noise in your bloodstream that is decreasing [00:53:40] stem cells ability to clearly see where they need to go. Oftentimes, I just say it's like a fire. You've got a [00:53:45] fire in your place. You look where the smoke is coming from in your house and you know where the fire is.

Don't handle the [00:53:50] fire. Let it go like this for a week. There's a point where there's smoke everywhere. You can not tell where the [00:53:55] fire is. Inflammation is the same thing in your body. So signal is a blend of [00:54:00] herbal extract that have been shown to inhibit COX 2. Five locks, uh, [00:54:05] the secretion of various types of inflammatory cytokines, bromelain to digest the [00:54:10] existing ones.

So it's sort of a, a broad formula that is there just to [00:54:15] reduce all this background noise so that stem cells can really see [00:54:20] the signal from where it's coming from so they can migrate where they need to go.

**Speaker 3:** I get it. [00:54:25] So we're, we're dealing with number one, release stem cells. Number two, make [00:54:30] sure that the stem cells can go anywhere in the body.

And then number three, make sure [00:54:35] that you've turned off inflammation. So only the parts where there's a true need for stem cells will get the [00:54:40] attention. They

**Speaker:** can see it and they can go

**Speaker 3:** there. That's the whole system. You would do all three if you're working on healing [00:54:45] from something. You're losing a ton of weight, or you're on a new exercise [00:54:50] program, recovering from surgery or whatever, because you need all three of them.

Correct. Okay, that makes sense.

**Speaker:** [00:54:55] And that's why it was developed. It was developed because we know that your stem cells are your repair [00:55:00] system. We know that everybody has stem cells in their body. Otherwise, after [00:55:05] three years of having a problem, you would not have a liver. Okay. So you take that as, as your [00:55:10] benchmark, so you know that your stem cells are working.

Why then this chronic condition is not [00:55:15] repairing? Why is it? Okay. And the two main reason is that the chronic [00:55:20] nature of the problem has damaged the micro vasculature. So your stem cells are there, but they cannot [00:55:25] reach that area. And oftentimes if it has been chronic for too long, the inflammation [00:55:30] has now become systemic.

So now stem cells have a problem defining where they need to go.

**Speaker 4:** [00:55:35] Okay.

**Speaker:** So you, you handle those two. Those two aspects, microcirculation and [00:55:40] systemic inflammation or noise in your bloodstream and how the stem cells that you've released can [00:55:45] go and repair. So it's seeing that people releasing their stem cells with stem region [00:55:50] release still are not getting the benefit that we thought they could get.

It's not that they're not [00:55:55] releasing stem cells, it's just that those stem cells cannot go where they need to go. That's why these two products were [00:56:00] developed.

**Speaker 3:** Okay, I totally get it now. What about stem cells and [00:56:05] burnout or fight or flight activation all the time? Do they do something for the central nervous [00:56:10] system?

**Speaker:** All I can say is that that reality in your terrain of having [00:56:15] cortisol and having this stress hormone circulating in your body, rat studies [00:56:20] have shown that if you have cortisol or stress hormones in the body and you take stem [00:56:25] cells before and after that episode that creates stress. You can see that stem [00:56:30] cells have lost a lot of their ability to migrate into tissue and proliferate.

[00:56:35] So you take somebody who lives constantly under a certain level of, of stress that [00:56:40] means during all that time, their natural ability to repair and to renew [00:56:45] tissues is lost. As, as declined is suppressed. So, and I find it fascinating because I [00:56:50] started my old journey into brain research when I was a teen and I came across a book, it was [00:56:55] neuropsychoimmunology.

And it was talking about hold the link between stress and quite [00:57:00] frankly, just about any age related disease. Stress is a component of almost [00:57:05] anything. And the link from a physiological standpoint is not always clear. [00:57:10] And now years later, we discover that it is. Stress will suppress stem [00:57:15] cells ability to do their job in the body and they are your repair and your renewal system.[00:57:20]

So I think the culprit is right there. When you live for decades with stress, you have [00:57:25] suppressed your natural ability to repair and renew your organs and tissues. So of course you'll [00:57:30] develop problems as you age.

**Speaker 3:** So then if I increase my circulating stem cells, if I'm still [00:57:35] stressed, am I going to get benefit?

**Speaker:** You're getting benefit from it because you're still increasing [00:57:40] an aspect of your body that is essential, which is repair, but you would get [00:57:45] so much better results if you just chill. Learn to manage stress, learn to meditate, which [00:57:50] release stem cells on its own. So managing your stress is definitely, I mean, it needs to be done.[00:57:55]

Uh, but in all the studies that we're doing, like we have a study, for example, on stable chronic congestive heart [00:58:00] failure, where we have shown so far on 10 patients, it's an ongoing study, 10 out of [00:58:05] 10 have reversed their stress. Their condition and now abnormal heart function. But my point is [00:58:10] that we didn't change anything in these people's lives.

Like they're as stressed as they used to. [00:58:15] Or did we get lucky and those 10 did not have stress in their lives? I would guess not. [00:58:20] Statistics would say no. If they were to at the same time learn to manage their [00:58:25] stress, would they get other benefits outside of just their heart? I mean, there's no doubt in my mind.[00:58:30]

**Speaker 3:** Well,

**Speaker:** as you'd

**Speaker 3:** expect, STEMregen. co slash Dave and [00:58:35] Christian's giving you 20 percent off as a gift. And I want you to go out and try STEMregen. [00:58:40] And the reason for that is that if you do any of the biohacking, you go to Upgrade Labs, you do all the [00:58:45] stuff I've written about in my books, stuff you've learned over the last 10 years of the show, having more STEM cells present can [00:58:50] work.

So try it for a month. and see what changes. I think you're going to find that [00:58:55] there really are meaningful changes. Even if you're young and you still have a lot of stem cells, if you've [00:59:00] had an injury, you're recovering from something or you're doing heavy training or something, give it a try. [00:59:05] And that's a meaningful savings.

And this works. I've spent hundreds of [00:59:10] thousands of dollars. I've had every joint in my body injected with stem cells. [00:59:15] It hurt. It was like getting hit by a truck. And I don't recommend that kind of procedure anymore. And I still [00:59:20] do some external stem cell procedures that have a great effect, but I take [00:59:25] StemRegen almost all the time.

I probably take a few days off here and there when I get lazy. But I do that because [00:59:30] I'm going to live to at least 180. So. Christian, I appreciate all the work you did to make this [00:59:35] real and to have the science behind it, and thanks for the discount. And guys, that's [00:59:40] stemregen. co slash dave 20 percent off.

See you next time [00:59:45] on the Human Upgrade [00:59:50] podcast.