Introduction and Dr. Jockersu2019 Background

Dr. Jockers, welcome to the peptide and Biore. Actually it's the Bioregulator and Peptide Summit. I'm a little partial bioregulator. So that's the name of my summit. Welcome.

Thank you so much for taking the time today. Thanks so much, Nathalie. It's an honor. Oh well, the honors mine. I've been waiting for this forever. So I'm going to read a little intro about doctor doctors for the for people listening to this who might not know who he is.

Everybody else probably does. Doctor Jockers runs one of the most popular natural health website drjockers.com which has gotten over holy jumping. This number is beautiful.

1 million monthly visitors and the host of the Doctor Doctor's Functional Nutrition podcast, which is consistently the number one ranked nutrition podcast in the world and among the top 30 overall health and fitness podcasts in the world.

Doctor doctors is the author of the bestselling books for the Keto Metabolic Breakthrough and the Fasting Transformation. And if you're wondering what you're talking about today, that's your foreshadowing right there.

He's a world renowned expert in the area of metabolic health, fasting, brain health, inflammation, and functional nutrition all topics near and dear to my heart.

Doctor doctors lives near Atlanta, Georgia with his wife Angel. His twin boys David and Joshua and his daughters. Joyful and shine. Once again. Thank you to the summit, doctor. Doctors.

It's a pleasure to have you here. Well thanks again, Natalie. Great. You know, I love talking about fasting and love this summit that you're doing. You know, I'm all about longevity and and anti-aging and doing everything I can to optimize my health and my performance so I can be the best businessman, the best communicator, right?

Doctor, husband and father. Right. And and helping my wife be the best wife. Right. So, so, you know, every role, every role of our life. We want to be the best.

You know, I heard this quote a long time ago and it stuck with me. You know, I was an athlete growing up. And my coach said, you know, when you're done being an athlete, you're going to be an occupational athlete.

You're always going to want to be better at whatever you do. You have to have the right mindset. And that got me into health, right? And it was this idea of so powerful.

Yeah, I want to optimize my performance in every area of my life. And you know, that's what you're doing with the bio regulators and peptides and helping people with this.

And, you know, I try to do it with with nutrition and teaching people the right food seat and times when, when they shouldn't be eating right. And how do you staffing as a tool to help optimize their health and performance?

Yeah. And so, you know, if those of you who are here are scratching their heads going, well, what are you doing in a bio regulator and peptide summit?

Doctor jackers and I were just talking about this offline fasting triggering autophagy, mitochondrial biogenesis triggering that deep cellular healing.

These are all the powerful tools that you can use to prepare the terrain and optimize it for your bio regulators and

peptides to do their work. So, you know, let's just get, you know, let's just dive right in here and start with explaining to people what it's really is.

And why is it so critical for healing?

Why Fasting Supports Healing and Longevity

For sure. Well, I always say that fasting is the most ancient, inexpensive, and powerful healing strategy known to mankind. Meaning that all of our ancestors fasted.

And it wasn't that they it wasn't that they did it intentionally. Although there are cultures around the world that do do intentional fasting. But, you know, our ancestors, they didn't have refrigerators and pantries.

So, you know, and when they either they were dependent upon a good hunt or a good harvest, and that wasn't always consistent. It wasn't predictable. Sometimes they would be in times of famine where they would under eat or not be able to eat, and sometimes they would have to go days without eating.

And the body, you know, the genetic blueprint that God gave us has this amazing adaptability to times of famine. In fact, those times of famine are incredible times of healing and repair.

And it really has to do with that concept of autophagy. And I'm going to jump into that. But, you know, I mentioned power, I mentioned ancient, inexpensive.

Of course, fasting doesn't cost anything. And maybe the most powerful form of healing. And it's built into our biology. Right. And one of the reasons why is when insulin goes down.

So insulin is this hormone. We hear about it with insulin resistance and diabetes. Insulins job is to take sugar glucose out of the bloodstream, put it into the cells where it can be used for energy.

And that's really important because if sugar builds up like somebody with uncontrolled diabetes, those sugar molecules will bind to proteins and they'll create sticky proteins, advanced glycation end products.

And these age advanced glycation and products AGS, what do you think that does to your body ages you right. They damage the endothelial lining of your blood vessels and they create plaque.

They create the damage in the blood vessels that then forms plaque. So they shut down blood supply to major areas of the body, including your nerves, including your kidneys, your liver.

And this is why somebody with uncontrolled diabetes, type two diabetes, they don't die from the diabetes. They die from congestive heart failure. They die from kidney failure. They're on dialysis.

You know, they end up with optic neuritis because the nerves feeding the blood, feeding the eyes, the nerves, optic nerve becomes so damaged. Right? Yeah.

And so they can't see that peripheral neuropathy. They can't feel their feet. You know, they have all these different issues. And that's because of the damage of these AGS.

So insulin prevents that by getting the sugar into the cell. And that's critical. However as long as insulin is elevated in our bloodstream and it should be elevated for a, you know, maybe an hour, hour after a meal, right.

That's totally fine. It's it's doing its job. When it stays elevated for a long period of time, it stops our ability to burn fat for fuel and our mitochondria run.

That's what they do. They produce, they take fatty acids, right. And they use them as an energy source, and they produce rampant amount rampant amounts of cellular energy and a small amount of metabolic waste when we're

dependent upon sugar burning, upon glycolysis.

That's a great quick fuel. Sugar is a quick fuel and we don't need oxygen. So it's an anaerobic fuel source. Like when we're exercising at a high intensity we have to use glucose.

Right. And but it produces very little cellular energy and produces a lot of metabolic waste, a lot of free radicals, a lot of oxidative stress on the system in small amounts.

That's great. It helps turn on our body's own endogenous production of antioxidant defense systems, and that's fantastic. But when we're doing it all day long because we have high insulin now, we start to rust and damage the mitochondria and all the different cellular organelles.

It becomes a major problem. So we need to undergo periods of time where we have low insulin on a daily basis. When we have low insulin. And fasting is one way.

By not eating, it's actually the fastest way to get low insulin levels. That brings that insulin down below a certain threshold. We start burning fat for fuel.

And it also triggers this mechanism that you mentioned called autophagy, which is self eating. So the body needs proteins. It needs amino acids to produce blood cells to produce growth factors to produce peptides in the body.

All these things and it knows how to do it. It just needs the right environment. And so when insulin goes down for a period of time, a long enough period of time, the body will start to not only burn fat for fuel, but also it will start to break down old damaged cellular organelles.

So within the cell we've got all these different organs. They're called organelles. So we have things like the Golgi apparatus, the endoplasmic reticulum, the mitochondria.

These things become damaged just as a normal part of life from oxidation. And they need to be repaired and replaced. Right. Just like, you know, things in our home, right.

And stuff like that. And so we need this, this process of autophagy. In order to do that, we break down those those organelles, take the raw materials and produce new healthy cellular organelles.

You know, in the longevity space, we primarily focus on mitochondria because that's what produces the energy within the cells. Right. And it's also kind of a sensory it has a sensory function as well.

Yeah. And so we want you know, really ultimately the quality of our life is going to come down to the amount of high functioning, stress resilient mitochondria in the cells of our body.

So when we undergo this autophagy process, we refresh, we renew the mitochondria. So we get rid of the bad old damage mitochondria that are not working well.

And we replace them with new healthy stress resilient mitochondria. Also, fasting or this period of time with very low insulin allows our body to now create more mitochondria.

So it sends a signal that activates something called mitochondrial biogenesis where we form new mitochondria as well. So the cells become more energy efficient.

Right. And they they they have more mitochondria.

Insulin, Fat Burning, and Autophagy

And so again, really the quality of our life and our longevity is has a lot to do with the amount of, of stress resilient, high functioning mitochondria.

And so this fasting process to undergo autophagy allows us to be able to form new healthy stress resilient mitochondria. Yeah that's beautiful overview.

And I you know to weave to weave our our headliner topic from the summit into this is if you think about it guys, you know people are going to run around saying you know take Motsi to push her mitochondria to work better or to get more cellular energy or use SS 31, which is going to help to heal the mitochondrial membrane or use GLP because the GLP are going to help to manage blood sugar and understand that by fasting, even if it's.

And we're going to talk about different ways of fasting in a little while, whether you're going to fast some days of the week, I'm not a huge seven day a week faster.

I'm I mean, other than the 12 hour fast we should all be doing on a daily basis, but those periods of allowing the body to to heal is going. Even if you did end up still needing the Motsi and whatever on the other side, it's going to set your it's going to set you up so that you have, as doctor doctors just said, more healthier, more functional mitochondria.

The last thing you want is to be firing up mitochondria that are damaged and not working properly, that are just going to spit out these reactive oxygen species at a rate that your body can't keep up with.

That could end up doing more damage than good. So I love that, that, that kind of that capsule that you just created. And then the other thing I just wanted to say is, you know what, guys, insulin is a hormone, but insulin is a peptide.

So it's the peptide that everybody's heard of. And it is the good news, bad news peptide as doctor doctors was just saying. And I just think it's important to just for people to really understand that this whole peptide space, this isn't this isn't new voodoo or anything.

This is tapping into body's natural systems. And so to get the most out of them, we're going to want to tap into the body's most ancient and kind of embedded systems to optimize our results.

So let's talk about a little bit these best strategies that support this natural autophagy process, which you know, we're going to probably hear. We're going to talk about different types of fasting windows.

Because not everybody can just jump into a 24 hour 36 or 48 hour fast. But for everybody, you can kind of work your way into a world where you're at least reestablishing a natural daily fasting routine, which is that 12 hour not putting anything in your mouth business.

Yeah for sure. So when it comes to fasting, fasting is really a tool. It's a lifestyle and is a tool, but it's really built around this idea of feast, famine, cycling.

So our ancestors, when they when they had a great harvest, or if they had a great hunt, they feasted like you didn't have great food storage, you ate when food was around, you ate and you ate, you know, plentiful amounts, right?

And then when food wasn't around, you just, you know, you underrate or you weren't able to eat. And that was the way it worked in our society today, most people are in a chronic state of feasting.

You know, we have access to food 24 over seven. You know, people are eating from the time they wake up to the time they go to bed. Food when we eat food, particularly hyper palatable food.

But really anything we're going to get some level of dopamine release. And in today's society, I mean, you know, if you go and and, you know, you have a lollipop, I mean, my goodness, like the amount of dopamine you're releasing, you're creating an addictive cycle.

Now, this is a beautiful thing that God created for us, that we get a dopamine boost when we eat like it should be a pleasurable experience, which is great, however, because food so available in our society, a lot of people are

eating emotionally, right?

And so they're not actually hungry, truly hungry. They're eating because they have emotional desires to eat or conditioned responses to eat. Eating at certain times a day when they would normally eat.

And they're in this state of chronic feasting, and that's characterized by high insulin levels in their blood. Now, in the bio hacker space, we almost kind of have a little bit of the opposite, right where people are like, they've gotten so into fasting that a lot of people are doing, yes, fasting too much.

And you think about somebody that has anorexia, they're fasting too much under eating. Right. And we see the detrimental effects of that. So we need this feast pulse followed by a fast pulse.

And so it's this constant like seesaw cycle that we're trying to go for here, where we are sending a message to ourselves that food is abundant. Therefore produce the sex hormones. Right.

That we need to szostak own estrogen progesterone because these hormones are associated with fatality. And in times of famine, like deep famine, our body goes into a survival mechanism.

And that survival mechanism does not prioritize fertility and anti-aging. It prioritizes survival. Okay. And that's more characterized by stress hormones.

And so when we cycle back and forth, though, where we have a short period of time of feasting, we're getting plenty of calories in, right? Lots of nutrients in, followed by short periods of time of fasting.

We're now we're bringing that insulin down. We're giving a horse memetic or positive stress on the body that says, okay, we're in a time of famine. We need to break down these old damaged proteins.

We need to go undergo cellular healing, but we're not in that too long and we're able to cycle back into feast. And so it's this constant seesaw. That's where the magic is.

And this is where a lot of people go wrong. They they hear about fasting or whatever it is, and they go too hard, too fast. Right? Yeah. And so it really is all about, you know, getting the right dose for you.

And this is, you know, this is personalized medicine, right. And so even when it comes to fasting, there's no really cookie cutter approach that's going to work the same for every single person.

And that's an important, important way to note it to to note it. And that's why when I start people on a good nutrition plan, I always start by saying, okay, we need to make sure, number one, let's just take out all the snacking and let's just go to three meals, three meals a day, okay.

High protein, making sure you're getting 30 to 50g or more of protein in a meal. Okay. You need to get at least 100g of protein a day on a daily eating pattern, okay.

And if you're, you know, doing a lot of resistance training, you might need a lot more than that. Like, I'm usually eating 250g of protein in a typical day.

And so high protein. Make sure you've got healthy fats up to your tolerance point. So for some people, they can do a lot of fat and feel great.

Fasting Windows and Daily Eating Structure

And other people maybe because they have sluggish bile flow, maybe it's a ApoE4 genotype or whatever it is, they're not metabolizing fat as well. So I'll tell people start with about 15 to 20g and see how you feel with that, particularly if they've had issues in the past, you know, with that and then gradually increase it if you feel okay.

Right. Because that fats going to create satiety as well as the protein. And usually you're going to get these healthy fats from, you know, all your protein sources, your grass fed meats, wild caught fish, things like that, pasture raised eggs.

But you know, if you have like something really lean, you can add in a little bit of high polyphenol extra virgin olive oil, which is amazing. You add in some of that and that's great.

And then colorful fruits and vegetables and and up to your tolerance point, some people do great on lots of vegetables. Right. Lots of high fiber foods.

Other people not as well with that. Right. So up to your tolerance point, trying to get a lot of colors in your diet, I think that's great nutrition strategy, removing as much of the processed foods as possible and then you personalize it.

Maybe you don't do as well with broccoli, but you do great with cucumbers, right? Great. So you personalize it from there. And you're doing three meals okay.

In the morning when you wake up, start with 16oz of water non caloric beverage. Right. It could be coffee could be herbal teas things like that. Non caloric beverages.

Before you even think about eating anything what happens here is when we when our stomach when there's nothing in our stomach, we release a hormone called ghrelin.

And ghrelin travels up into our brain and signals hunger. It's called our hunger hormone. When our stomach descends, opens up, right? Because things are in it, including water, it inhibits ghrelin production and therefore we get natural satiety.

So for a lot of people that will tell me, I just I'm starving. When I wake up, I'm like, well, do you drink? And most of them are not. And so I say, well start by drinking water, right.

Drink eight ounces of water when you first wake up, like within the first 15 minutes or so, drink eight ounces of water, drink a drink, a warm beverage.

That warm beverage will activate your vagus nerve will help calm you. Reduce the amount of cortisol. I mean, you want good, good cortisol release, but it will help balance out that cortisol.

You can even take a little bit of salt, right? Good, good unmarried salt which is great as far as like a block against high cortisol. And you know, you can do warm lemon tea, you know, warm lemon.

You can do herbal teas, coffee, things like that. But just the beverage getting in is going to give you natural satiety. Right. And then just sip on some water, you know, as you go and wait till you get naturally get hungry.

All right. And for a lot of people, they can go multiple hours. Right. But if you need to have that breakfast meal great. Eat the breakfast meal. Okay.

Let's say 8 a.m., you know, whatever it is, right? Go about four hours and then have another high protein meal and then another 4 to 5 hours and have another high protein meal.

And that's your three meals a day. And then do that for about a week and then intuitively see how you feel right by cutting it by dropping the or, I should say, the closing the window of time that you're eating.

Right. So you might be eating in a ten hour eating window. Right. Typically, if people hydrate in the morning, they're easily able to get it to about ten hours, right.

Let's say they breakfast at eight, they finish inner at six or whatever it is. And then what you do is you just kind of

keep hydrating. So for a lot of people they notice that it's just easier.

They're getting going in their day. They don't even think about food. It's easier for them to fast in the morning. That's fine if that works for you. Okay.

Or, you know, you could fast through lunch or you could fast, you know, or you could eat early dinner, right? Yeah. Either one of my favorite personally, I think if early dinner.

Yeah, I think for the problem is socially it's tough to manage it is to sit with your family and have dinner. You know, you sit around the table. That's.

But but definitely I think Birley time restricted feeding. The science shows that that is very powerful and. Yeah, exactly. But like you said it's the hardest to be compliant with.

Yeah. On a day to day basis because of the social element of dinner. Yeah. And so that's what's challenging. So I'll talk about those things. Yeah. Maybe just do that one day a week if you had to write.

But yeah, trying to get your eating window into like an eight hour eating window is a really great idea. So maybe a later breakfast, okay, 9 a.m. and, you know, you finish your last meal before 5:00, something along those lines.

That's an eight hour eating window. Probably the most popular is like a 12 to 8 people don't eat until noon and then they, you know, finish dinner by 8 p.m.

and that can work great as well. And you can do three meals if you want in that time period or two big meals. It depends how well you digest your food, but that's 16 eight fast is probably the most common fast.

And that gives you time to get that insulin down and start the process of autophagy. But you're going to get a much a higher level of autophagy when you're able to do something like a 20 to 24 hour fast.

And this is something that I try to do every single week, like a 24 hour fast. And I what I find there, Natalie, is I try to do a lunch to lunch fast.

So do you. I do dinner to dinner. That's so interesting. That's the most popular way people do it right. To dinner, to dinner. Because you're busy. You just get going with your day.

Things like that. Go to bed. But, you know, I just notice that I feel so refreshed the next day. And if I have a, like, a really good, you know, high protein lunch it I can fast through dinner.

I mean, as long as I didn't do resistance training that day, you know, it's really no problem. I can fast through dinner. I feel like I sleep deeper, my heart rate variability is better.

And then. Yeah, and then it's easy for me to continue that fast up until I usually break it with a workout. Right? Yeah. And then and then follow up with food right after that.

And that works. That's a great point. Do you want to talk about that a little bit? This the idea of fasting at the end, working out at the end of a fast.

So people are going to be sitting there going but wait a minute, like aren't you starving? Like, aren't you damaging your body? Which I think when you talked about from an evolutionary perspective, our bodies had to actually get better at hunting when we didn't have food on board.

It had to get better at accessing stores of energy. So now you're going to get the energy that your body has squirreled away for a rainy day. Make this the rainy day, expend the energy, and then what happens?

And I'd love you to outline for people what happens on the other side of that post fast workout when you now do

that re feed? Yeah for sure. So you know when you're fasting I talked just about autophagy.

But another big thing that happens is your body starts creating ketones. And these ketones are water soluble molecules made from fat and your liver makes them.

And the reason why your liver makes them is because we can't get fatty acids across the blood brain barrier to fuel brain cells. So our neurons depend on glucose for about, you know, they can get about 50% of their energy from ketones, but they always need some level of glucose, which is why you always have some level of blood glucose.

But when we get those ketones elevated, particularly the one that we measure in blood is beta hydroxybutyrate. When that gets up into the brain at a significant level, it shuts down brain inflammation.

And this allows you to actually have better mental clarity and focus. And you actually feel amazing when, when when you have this elevation and ketones in your brain.

Also you get this big rise of growth hormone. Growth hormone is a quintessential anti-aging hormone. Of course, there's peptides, you know, that helps support growth hormone.

But your body will actually naturally endogenously produce this growth hormone, particularly when insulin is down like this. Right. And of course, sleeping is when we get the largest rise, if we have enough melatonin, if we're producing enough melatonin, like going to bed at a good time, keeping keeping blue light out at night, things like that, all good circadian rhythm rituals.

And so but that growth hormone will protect your lean body tissue. So people always say, well. Am I going to lose muscle if I fast? And depends how long the fast is, because you can lose muscle from not getting the mechanical stimulus right.

Not lifting weights will cause you to lose muscle whether you're eating or not, right? Yeah, nobody really worries about that. Yeah. And so you you. So you're not losing muscle from the fast.

Okay. As long as you know you're not. As long as your growth hormones elevated. Right. And there could be ways like if you're drinking like eight cups of coffee as you're fasting. Right.

That could, that could, could blunt your growth hormone release. You're not sleeping, you know, things like that. But the fast itself, as long as you're doing things right, is not going to cause you to lose muscle.

However, if you go a long period of time, multiple days, you know, like many days without weight training and you've built muscle through weight training, you're going to lose the muscle.

And so this is where, like for example, a 24 hour fast, you're not going to lose any muscle during a 24 hour fast. And you get yourself more metabolically flexible.

Workout Timing, Ketones, and Metabolic Flexibility

And this is actually a really like like this is a great sign that your body is very, very metabolically flexible, which is really the goal. The goal is not how long can I go through this fast right.

Can I out fast? You know, the person next to me. It's really how metabolically flexible can I get my body? Metabolic flexibility means how good am I at burning glucose for fuel and burning fat for fuel? Right.

And can I switch back and forth really, really quickly? So when we're fasting, if we're just, you know, hanging out and doing only low level, like very light activities, maybe taking a little walk, things like that, we're primarily burning fat.

However, we are always going to have some level of glycogen stores stored glucose in our muscles and in our

liver. Now we'll use some of that up early on in the fast, but our body is going to preserve it, especially if we're a trained person to begin with.

Like if we've been doing regular high intensity training and resistance training, we're going to have higher glycogen stores than somebody who's who's sedentary.

Yeah. So you're going to have that glycogen store. But can you tap into that. Can you actually use that for energy. So if I'm doing a 24 hour fast and then I'm going ahead and at our 23 I'm working out at a real high intensity.

I'm doing I'm lifting weights, okay. I've already got more growth hormone in my system than I normally would if I was on like a 16 hour fast. All right.

And I got elevated ketones actually. Should I better performance if I'm, if I'm metabolically flexible and that's what I, I pretty consistently notice that my workouts are amazing.

Like like I regularly I'm very fit person. I work out, I lift weights 5 to 6 days a week. And so my workouts are typically very good. But at the end of that 24 hour fast, like typically I would say 90% of the time if I slept well the night before, it's like the best workout of the week.

Like, I just feel amazing when I'm doing it. And that, again, is that metabolic flexibility. And that's really the key. And you can even do this. I've done it at the end of a four day fast and felt great while I was working out, believe it or not.

But that's because you've achieved this metabolic flexibility. So just to highlight to the audience, you're going to work your way into this, guys. If this is not, if you have not, you know, not eaten for longer than the time you're asleep, let's say 7 or 8 hours a night.

In years and years and years, you're going to have to ease your way into this. And this is this is a muscle, right? The muscle of time restricted eating, the muscle of fasting and the muscle of reintroducing.

Because your body knows how to do this, it just hasn't done it a long time. So the muscle of reintroducing the body to this concept of, look, we've got tons of fuel on board, men, we just need to go get it.

Yeah. And so if your cells are full of senescent mitochondria, he's damaged mitochondria that can't burn fat for fuel. You got to get rid of those and replace them with new healthy mitochondria or.

Yeah, you're not going to feel good because you can't burn fat effectively and may not feel good when you're fast. You know why you have those. So this is where like, you know, it's always one of those things people will say, well, I've had a lot of people with chronic inflammatory conditions that are like, hey, should I do like a seven day water fast, five day water fast?

I'm like eventually ten, but it's going to feel really it's going to be really hard. It will get rid of a lot of these damaged cells, but it's going to be rough for you.

Yeah, I would actually to to just help you be more compliant and have a better experience with this. Let's get your body more metabolically flexible in a more gentler way first.

So he's in. Yeah. No that's and I mean you know guys you didn't you didn't get to wherever you are today in a in a week. So you you need to give yourself grace and to really kind of get yourself back to this place with kindness, not kind of shoving your body into, okay, this is what we're doing kind of thing and just kind of move yourself along in, in a, in a better way.

Right. And in a way that's not going to cause suffering because the suffering, to your point, is the best way to at some point wake up one morning and go, you know what?

I don't need this. I'm going back to my old ways. So small baby steps along the way, even if it might take you a little longer to get there will always be more valuable to you in the long run than just jumping in.

I mean, there's a few people out there that can just go cold turkey, but maybe for most of us, it's not the best path forward. Yeah, you got to think about it like, you know, if you have not done anything but walk to your mailbox and back and then you say, okay, today I'm going to run a 10-K, you might be able to complete it, but like, you won't be able to walk for the next few days.

You're going to be so sore. Yeah. Yeah. So so our last little topic here, because I think that there's another piece of the puzzle that we have, we've talked about a bit on the summit, but I'd love you to address it in the context of fasting.

And this is about the gut microbiome. Right. So we talk about peptides for gut healing all the time. But here's what peptides are not going to do. They're not going to fix the microbiome.

They're going to potentially improve the integrity of the gut lining. They're going to potentially in some cases, they might help with resolving some of the inflammatory issues in the gut, but they're not necessarily going to fix that microbiome.

And counterintuitively again, what you don't eat might actually help that flora in the gut to be in better balanced. So I'd love for you to speak to that a little bit before we kind of close off for. Yeah, for sure.

So in our gut, we have two categories of microbes primary feeders and secondary feeders. Primary feeders live right above the gut mucosa. The gut mucosa is this mucous lining.

That's right above the one cell right. One cell layer of intestinal lining. And so the secondary feeders live within the mucosa. So primary feeders above the mucosa secondary feeders under the mucosa.

We need both of them okay. But we need the right balance and the right ratio. And so when we're constantly eating every few hours throughout the day we're primarily feeding the primary feeders.

And they overgrow. And when they overgrow it crowds out space and nutrients for the secondary feeders. So those secondary feeders start to die down. Okay.

And so when we actually go periods of time without food, the primary feeders themselves will trim down. Okay. So we'll get less of them. But but it'll allow the secondary feeders.

And some of them are, you know, include things like acre maximum, which has been pretty well studied to be one of the most important bacteria for good metabolic health.

Fecal Persichilli fecal bacteria. And that's the name of it, which, again, another one of the most more well-studied bacteria that lives in the intestinal lining and is butyrate producer.

And the intestinal lining produces your within a things like that. And so we really need these but it's actually taking time away from meals okay.

Fasting, Gut Health, and the Microbiome

Like doing this sort of intermittent fasting that allows the primary feeders and secondary feeders to have the right ratios. And those secondary feeders will produce things like butyrate, like Muralitharan, that get into the intestinal, into into the intestinal cells and will stimulate mitochondrial biogenesis might where we break down the old damaged mitochondria.

So those post bionics are incredibly important for good intestinal health. Right. And that creates better intestinal lining resilience. So it can handle more stress.

And that intestinal lining is turning over every 3 to 5 days. So it needs to be really strong and stress resilient. It's got a lot of mechanical stress coming in through the food we're eating, through exposure to different pathogens, things like that, toxins, glyphosate, all kinds of stuff like that.

We want it to be as stress resilient as possible. And so taking this period of time between meals and allowing for, you know, the proper ratio of primary and secondary feeders to develop is really key.

You know, I always I always think about it like my front yard. So I have an apple tree in my front yard and I have a blueberry bush. And the apple tree grows like its branches grow really fast.

Yeah. And every year we pay a guy to come out and trim the apple tree, which actually limits the amount of apples we get on the tree. But if it doesn't do that, the blueberry bush does not get sun.

And we don't get blueberries. We want to we want apples and blueberries. Yeah. So we have to trim back the apple tree. So the blueberry bush gets the proper amount of sunlight.

So we can have apples and blueberries. And if we don't do that we only get a bunch of apples. Right. And that's it. And your apples are probably better, right?

You've you the tree is healthier. You force the tree to concentrate its energy on less. And, you know, just like a wild overgrown. And I mean, when you go into into nature and find berries, the big overgrown plants often aren't the ones that have the most, biggest, bestest, juiciest berries.

It's going to be the ones that are smaller. So there's benefit to that. And so we're fasting where fasting fits in here, you know. So it's about reducing the mechanical stress.

But does it also have a similar effect as it does on the mitochondria, where it helps the healthier bacteria to kind of dominate over the pathogens. Yeah. And you think about it like this.

Like healthier mitochondria in the intestine. Well actually see our mitochondria needs oxygen to undergo beta oxidation and break down the fat for fuel.

Yeah. So it will actually suck oxygen out of the intestines. Now when we look at different strains of bacteria, the ones that are really pathogenic, you know, your age, different types of E.coli, Clostridium, Klebsiella, things like that.

These are aerobic bacterium, meaning that they really drive in a higher oxygen environment. Whereas these ones that we talked about before these secondary feeders are obligate anaerobic bacteria.

So you have like three classifications. You have some that are kind of dual. They can they can. They're anaerobic but they can survive in oxygen as well.

And then you have ones that are obligate anaerobic meaning they have to have a very low oxygen environment to survive. And that would be some of the ones that are most well studied for good good for good metabolic health like Acker Mantia.

Yeah. But what happens is when we have bad mitochondrial function in the intestinal lining, we're not we're not pulling enough oxygen out. We're not we're not able to produce energy through aerobic respiration.

And so the oxygen stays in the intestinal lumen which is like a toxin for these good secondary feeders, these these post biotic producers that are so beneficial.

Right. So it's like which came first. Right. But the good healthy mitochondrial function will pull the oxygen out and create the right oxygen amount in the intestinal lumen for the obligate anaerobes to survive.

And the ones that are kind of dual where they can they can produce energy through aerobic means as well as anaerobic means. So Bifidobacterium would be in that category for them to be able to survive as well and thrive.

And this actually keeps the intestinal ecosystem really well balanced. You know we look at what is a healthy microbiome. Really what researchers found is it's a very diverse microbiome.

Yes. And one of the most important factors of diversity is having the right amount of oxygen in the intestinal lining, a very, very low oxygen environment.

The more oxygen increases in the intestinal lining, the lower our diversity. So what controls that oxygenation is the amount of mitochondrial respiration that's taking place in the intestinal cells.

Better mitochondria, healthier gut microbiome. There you go. And how do we get that. Stop eating once in a while. So this has been great. Thank you for this.

Maybe we just want to wrap up with a little finale by you like a little summary for people because we've given them a lot of different a lot of information here.

And so let's kind of summarize how someone might get started with fast, with introducing fasting windows into their day to day life and not get caught in that trap.

And we've both seen it a lot. You know, people either think they can't go two hours without eating, or they get so addicted to fasting that now we see them overdoing it.

So if you could kind of give us a little, little snippet on that and yeah, yeah, we'll do it in about five steps. Number one is take out snacks, right?

Take out ultra processed foods, focus on good hydration away from meals and three meals. Don't worry about your eating window.

How to Start Fasting Safely and Sustainably

Eat three meals a day and make sure that in each one of those meals, you've got 30 to 50 or more, depending on your activity level. Grams of protein making sure you're getting about 100g of protein every single day, right?

At least 100g of protein every single day. Now, if you're a kid or if you're a very, very lean woman, probably fine with 90g or whatever, right. In France.

And so that's where we start. And then that's going to produce natural satiety. You're going to be naturally satiated. Right. And then you can start playing around with your eating windows.

And what I typically tell people to do is roughly like a 16 to 18 hour fasting window in a 6 or 8 hour eating window. Yeah, 4 to 5 days a week. Okay. And then one day a week where it's more of your feast day, you're eating in a 10 to 12 hour eating window.

Okay. Again, trying to focus on healthier foods. But if you're going to a party or whatever it is, you know, build it around your feast day and then one day a week where we're trying to do a little bit deeper fast, a 20 to 24 hour fast, okay, to get that deeper level of autophagy.

Now, if you have a lot of weight to lose, once you get metabolically flexible where you're doing those three meals a day, like we talked about, okay, for a few weeks, if you want to, if you want to do a 36 hour fast or 40 hour fast, right?

I've had a lot of people do, you know, one a 48 hour fast every single week, okay. And lose, you know, 20 pounds in a month, right? Yeah. And feel great. Okay.

As long as those eating days are getting a lot of protein, right, making sure they're getting plenty of calories on those days. So we're not in that fasted calorie restricted mode for too long and sending the right messages to the body this feast, famine, cycling.

So that's the key. And so it really depends on, you know, where somebody is coming in with like what their activity level is. So do they have a lot of weight to lose.

What's their activity level. What's your stress level two. This is big. Yes. Are they sleeping at night okay. Gotta make sure you're sleeping well at night to really get the best benefits from the fast. Okay?

If you're already coming in with, like, a lot of sleep problems, just stick with the three meals a day until you get the sleep issues addressed. If you've got PTSD, if you've got significant stress, like you just feel like your stress level is ten out of ten, don't add.

Don't start fasting. Focus on the three meals a day until we can get that stress down to maybe a seven out of ten. Okay, we're it's very bearable, right? Stress.

You know I've got got projects things I got to do. But this is very bearable. And so these are these are things that we got to look at activity level.

Like if you're a high level athlete in season don't worry about fasting right. Eat a lot of protein things like that. Right. So there's so there's certain things that you know you need to make sure you're addressing.

Okay. But outside of that, once you get your stress under control, your sleep well okay. And you've got your diet lined up. All right. Now we can start implementing some of these, you know, times of fasting right where we're doing like maybe a 24 hour fast.

Or you might want to do a three day fast, which has great immune regenerating capacity, right. Or even a five day fast that you might want to do to get deeper levels of stem cells and autophagy and things like that.

Okay. But first do the basics right. Get those, get that, get your body more metabolically flexible. Get off the process foods. Stick with whole real food, single ingredient foods as much as possible, and really trying to make sure you're getting enough protein.

Beautiful. Thank you. That was fantastic. And I'm going to give it a little shout out, because people who are watching closely might notice that both of us are smoothing today.

Got our little shout out to to transcriptions for their sponsor of the summit actually. So so funny that we're yeah, we are representing today, folks, and we plan that.

We didn't plan that. We just got on the call and we saw each other's tongues. And actually, as it turns out, this could actually be really great during fast also. Yeah for sure.

Anyway, Doctor Jockers, thank you so much for being here today. Let's let people know where to find you and how to get more of more information. And for sure you can find. Yeah.

drjockers.com is my website. You can find me Doctor David Jockers on social media as well as my podcast, Doctor Jockers Functional Nutrition podcast. Beautiful. Thank you so much. It's a pleasure.

Thank you.