Introduction to Longevity and the Interview

Welcome to the Fasting and Longevity Summit. I'm your host, Dr. David Jockers, and I am excited about today's interview. It's with my friend Jason Prall, the creator of the Human Longevity Project, and he has the bestselling book Beyond Longevity A Proven Plan for Healing Faster, Feeling Better and Thriving at Any Age.

And so this summit, of course, we're talking a lot about longevity, longevity principles and we're talking a lot about nutrition when it comes to longevity.

However, in this in this interview, we're going to talk a lot about sleep, light and circadian rhythm and how malillumination is to the body, what malnutrition is to the body.

So we're not getting the right light exposure or proper light exposure at the right times. How that is going to disrupt mitochondrial functions is disrupt our circadian rhythm, and it is going to cause more inflammation, oxidative stress in our body, not allow us to recover properly and ultimately cause accelerated aging and shorten our lifespan and our health span.

And so this is really critical information that you're not going to hear almost anywhere else. Very few people really go into detail on this. And so I think you're in for a treat here.

You can check out Jason at BeyondLongevityBook.com for his book and also humanlongevityfilm.com where he went around the world and interviewed some of the longest lived individuals, people that are thriving in their nineties and hundreds all over the world and found out their secrets that he goes through in there in the film.

So humanlongevityfilm.com for that without further ado let's go into the interview. Well, Jason, always great to connect and I know we've talked in the past and I had mentioned how much I really enjoyed your book.

I mean, I talked about it in the intro, but I love this book Beyond Longevity, phenomenal book. And anybody that's interested in aging and longevity, this is the go to book's really the best book that I've read on that topic.

And so just really appreciate your wealth of knowledge and really appreciate your overall perspective on this. And I'm excited to really, really dove into some of these topics that you discuss in the book and really starting with this idea of what is longevity, right?

Because that's kind of something that most people think they know. Right? But it's also deeper than what most people really understand. Yeah, I appreciate that.

The kind where it's really from all the all the work that you do, it means a lot. So, so thank you for that. And yeah, you know, it's interesting we're in a such an interesting time when it comes to longevity, right?

Because we have these this new medicine that's coming on line. Right. With stem cells and biologics. And then we have which is essentially dipping back into our own innate intelligence.

Right. So that's an interesting thing to explore. And then we have the other side of the coin, which is like all this technology, right.

What Aging Really Means

Which is is interesting and also potentially dangerous and very kind of weird in another way. Right. We can go down some really dark rabbit holes in that realm. Right.

And we kind of are in some some ways. So we're at a very interesting nexus. And I think how we think about aging and how we think about longevity is really, really important.

Right. There's historical context for aging and for longevity and for life itself as a cycle, right? So it's really important to, I think, really explore these things from a foundational principle because if we if we lose that, then we're going to start veering off into these random territories that are going to get us in trouble. Right.

And so for me, when I when I wrote the book, right, it's like longevity is an important thing. Right? We want elders, we want really experienced people to guide our our younger generations.

Right. There's there's a lot of benefits to having increasing longevity on the planet. And then but then it's like, what is longevity? What is aging, right?

How do we think about aging? Right. That's it's a very deep topic. And and I interviewed you for my film series, The Human Longevity Project. And I remember, you know, we interviewed 80, 90 health experts.

You were one of them. And and and I asked this question to many, many of them. I said, you know, what is aging? And not a single person gave me this the same answer.

And these are very, very intelligent people who do a lot of work in a lot of different realms in the health sciences. And so that's interesting, right?

It's interesting the fact that we don't have a definition of biological the definition of biological aging. Right. So I actually had to sit and think about that for what that is.

Right. And and it's really a process. Right. So a lot of the times when we're thinking about aging and anti-aging and longevity, what most people are actually talking about are the the effects of, quote unquote, aging. Right?

The damage that accumulates over time as a result of aging. We still don't really know what aging is, what what causes this process in an organism, right.

Be it a salamander, a whale, a tiger or a human. Right. But it's an innate process. So it's built into all of these organisms. Right. And so there's there's interesting things when it comes to aging itself.

And so without going too deep into that rabbit hole, because that we can get lost in that, it's important to recognize that damage is is one thing and aging is another thing.

And we can I think we can slow the rate of aging. In fact, I'm quite confident we can do that. I'm not so confident that we can stop aging altogether.

And I'm not I'm absolutely convinced that we can't anti age Right. We can't go backwards. Now, look, we use these terms colloquially, right? You probably use it.

I use it, right. And it's okay, but I think what I want to affect here is that the term anti-aging is really damage reversal. Right? The ability to sort of turn back the clock from a from a damage perspective on a cellular level or an organ level.

So in a sense, it's like anti-aging, but really it's just cleaning up some damage and we're utilizing the repair mechanisms that are built within us. But that's the important distinction is, yes, we can turn on repair, yes, we can clean up damage and no, we can't undo whatever aging is and whatever is actually guiding that process.

Again, we don't have it. We don't know whether it's doing that. I'm confident that we sure as heck can't figure out how to undo that yet. That would be like Benjamin Button style, like going backwards and we start getting younger and you know, in ten years I'm now 20 again like that.

That's just not going to happen, right? So just, just want to like lay that framework down because think it's really important as we have these discussions about longevity, what it is we're really talking about and I think it is slowing the rate at which one ages and or cleaning up damage that has already accumulated.

And we can do that to an extent because we have the mechanisms built within our biology. We have that magic within us. That's what's cool. Yeah, it's really good.

I mean, we know that damage is going to happen. It happens to all of us. In fact, actually, it's to some degree it's necessary. You know, it's a homedics stressor, right?

That creates adaptation and creates a level of resilience in our body. So we know the damage is going to occur. We can't get around that. So then, you know, the other factor is how well we respond and recover.

So I've heard the term, you know, healthy aging is really successful adaptations to the stressors that we're under and how successfully we're adapting.

Absolutely. On its balance. Right. Like if we lose this ability to destroy cells, to, in other words, create death on a micro level, then we have cancer, right?

So so we actually want cells to die. We need cells to die. We need mitochondrion to die. Right. And that's a really critical aspect. In fact, there's a lot of longevity.

Researchers that are in the mitochondrial sciences, that are in the cancer sciences, that are looking at these sort of rates, of how much apoptosis do we want, how much autophagy do we want, right?

If we have too much of something, it's bad. If we have too much of another thing, it's also bad, right? So there's a there's a dynamic balance that is always occurring inside the body.

And this becomes the art form, if you will, of how do we do this throughout our lives, knowing that this is going to happen, we want it to happen. We want to actually encourage it to happen.

And a lot of the things that we look at in the health world, right when it comes to, again, exercise, sunlight, fasting, certain foods, these are all traumatic stressors, right.

In other words, they are damage causing. They're innately creating a pressure on the system. Right. Some sort of selective pressure, adaptive pressure that the better organism has, the amazing ability to both sense and then and then adapt and modify in order to meet that stressor.

Right. So that's what's really, really amazing about our human organism. And yet we push it too hard. Then it gets out of this hormedic zone and it gets into the straight damage.

Right. And yet again, just like if I were well, actually, I was at the gym a few months ago and sliced my finger up and had to go get stitches and all that.

Right. And and and it was like it looked like another a meat grinder. I mean, the nail was hanging off and I'm like, oh, my God. And yet the doc comes in there, throws in, like four stitches through the nail bed and all this.

But my finger miraculously heals, right? And right now there's a lot of scar tissue in there. So there's there's some reorganization of the tissue itself.

But over time, it's going to go back to a normal finger, like pretty much all the way. Right. Like, that's remarkable. So we have this intelligence within us.

So no matter how much damage, because we can almost recover from anything. That's what's really remarkable. And the younger that we are, because there's something important about youth itself. Right.

The amount of stem cells we have, the the all the growth factors, all the the magic, that is when within a young life form, there's vitality in there.

And that does wane over time, right? That goes part of the aging process. But when we sort of make mistakes early in life, we can still come back from them.

Right? So this is it's really remarkable. And that's what's worth acknowledging here, is that there's it's really important to remember that there's an innate intelligence, there's a built in magic to us.

Right. And to honor that, to respect it and not sort of try to play God at every turn because it gets us into trouble.

The Hierarchy of Symptoms and Root Causes

Right. To really trust the in-built humanity is really, really important in this process. Yeah, it's so good. And, you know, there's a there's a quote by BJ Palmer, who is one of the developers of chiropractic, and he said, Most people put more faith in a spoonful of medicine than they do the power that took them from two cells and formed them into trillions of living, breathing, pooping cells.

Yes, totally. And and that was one of the things that I thought about it when I was writing my book about, you know, what is aging and and when does aging start.

Right. Like, it's a very interesting concept because I've got a young one. I know you've had you have a number of kids, like when you watch them grow up, you think of them as getting older.

But we don't necessarily think about them as aging and decline. Aging tends to be this sort of it tends to be coinciding with this idea of decline. Once we get to a certain point, maybe it's 30, maybe it's 40, whatever, whenever that is.

But but when when do we make that shift in our mind of what aging is? Aging for a three year old is a really important, developmental, complex, defining process, right?

The brain and nervous system is still being built. It's not even on the line yet. It's still myelinated and there's still lots happening to complex ify.

The organism, as you mentioned, going from, you know, a zygote to to sell stuff. I mean that and then and then comes out of these cells that are uniform, start to differentiate and turn into a liver cell and a kidney cell in a in a skin cell.

And it's like this is a really wild process. And it happens pretty reliably to the point where we can predict all of these things. Right. So that's what's interesting is that that aging, when does that happen?

Is it is a two year old aging? I mean, I think so. But from what I can tell and what I kind of allude to in my book is that that aging is a part of the process of sexual development.

In other words, we can't separate the two. Yeah, right. So it's kind of this thing and there's a lot of reasons for that. I don't want to diverge too much, but but but again, this is a really important point, too, right?

Like there's there's so much magic in this process of development developing into a human and aging is is inextricably linked to that process. So to some degree, it's like this embrace of the aging process, while also understanding that if we do things really, really well, if we align with these sort of natural truths, then we can extend this process of life and do so in a healthy way.

Yeah, for sure. So aging is a constant. The question is, are you aging successfully or aging unsuccessfully? And I just look at my family and I've got family members, you know, they're in their seventies.

No medications able to do everything they want to do, don't need extra help, still working, have a lot of life and vigor. And then I've got family members in their fifties on five, six medications have, you know, four different co-morbidities and really struggling on a daily basis.

And so, you know, there are 15 year gap between two individuals I'm thinking of. And yet, you know, significant differences in quality of life. And so it's clear I could see, okay, this person is has been aging successfully.

So somebody might say, well, yeah, she's, you know, 71 years old. Right. But she has the energy and vigor of somebody probably in their forties and then, you know, another individual in their fifties, late fifties, but has the energy and vigor of somebody, you know, towards the end stage of their life.

Late seventies, eighties. That's right. And and when I went around the world and interviewed and spoke with and hung out with people in their eighties and nineties and beyond 100, this is the thing I notice is that, you know, again, remember, Julio is 105 in Sardinia, Italy, and he was old straight up.

He was like, yay, big. And he was old and he couldn't hear as well as he used to. You know, he's got the big ears, right? Because our ears continue to grow.

But his eyesight wasn't as keen as it used to be, but he was still playing chess with his like 80 year old son or whatever it was. And he was still able to ride a bike right now.

He wasn't able to ride it with the vigor of a 22 year old, and he wasn't able to. So, in other words, the decline is there, and yet he still maintains some amount of vitality.

And so I think this is the again, when I think about how I'm going to be aging, you know, God willing, that I can continue to to live without sort of, I guess, being taken away too early.

It's interesting, right? Like, what does that look like? You know, because I'm continuing to develop a deep acceptance that my limitations will take hold eventually.

Right. Like and there's a really important philosophical underpinning to that, which is that it's sort of morbid in a sense. It's like you'll never be younger than you are now.

You can be healthier, we can reverse this. But like this is this is important to recognize where you're at now, to honor this, to to be thankful for where you're at, because we're going one direction.

We can clean some things up, we can get rid of some pains, we can lose some weight, we can get better blood sugar regulation. We can do all kinds of cool stuff along the way.

But the the trend is this way, right? And so it's important to recognize that that what we have is so valuable, right. Because, again, I saw very successfully healthy agers.

Right. And yet they still were limited in what they can do as they get into there. Everybody thinks it's a wonderful to lived 120 440. We have these ideas of what that means and from what I can tell, it doesn't look like 50.

It doesn't look like 42. Right. It looks like 120 or 105 or 110. Right. And so there's limitation to that. So there's there's an important aspect of here to regain as much limitation that may have already set in.

And also to sort of stave off any new limitations that are coming. But inevitably they will come, right? So so it's like acceptance and gratitude and also doing what I can to extend.

Yeah, that's good. And if anybody's interested in and actually listening to Jason's interviews with a lot of these people that I've aged successfully in these blue zone areas, you can just go to human longevity film icon and check that out.

He's got it. You can sign up and listen to those. And you know, in your book you talk about the hierarchy of symptoms. I think this is really important concept for people to understand as well.

Yeah, I think this is where if somebody is dealing with symptoms, disease, whatever, whatever the case they might be dealing with, we tend to start off with kind of what I call level one, right.

Which are the labels, right? This is when you go into a doctor say, oh, you have hypertension, right? Or you have diabetes or you have kidney disease or eczema.

Right? And so they're giving you a label. And it's important, I think at the beginning you accept that label. Many people. Some people don't. But that's generally where it is.

And then after some of the standard treatments or maybe you just are already at that point where you're rejecting that you're already kind of beyond this idea.

Well, then there's the level two down, right? And this is where a lot of the, let's say, more integrative functional medicine, maybe even naturopathic.

We start getting to the practitioner level or maybe you're just a researcher like like me, where I kind of started on my own and I started learning some about some of this.

Well, this is this is where you get into like, okay, well, I don't have hypertension, diabetes. I'm actually looking at high hemoglobin HNC or elevated inflammatory markers or or low thyroid hormone or whatever the case is.

Right. And so you can identify the next layer down of, oh, that's the problem, right? And then you can go a layer below that. This is where the sort of the expressions live.

Right? And this is like, oh, it's actually mitochondrial damage that is underlying all this. Or there's gastrointestinal inflammation or there's poor cellular communications or chronic inflammation. Right.

And there's there's ways to sort of classified the dysfunction on that level. And then we can go below that, which is the behaviors. In other words, what are causing the expressions, right?

So it's actually the behaviors, right? I'm eating improperly for for my situation. Right. Or I'm not exercising now for I'm exercising too much or I'm getting poor sleep or have social isolation.

Right? I'm overworking, right? Whatever the case is, a shallow breathing. Right. And most most of us don't breathe very well, smoking or drinking or, you know, gambling or, you know, any of these type of behavioral things that might create symptoms.

Right. And then you have to ask yourself, okay, well, well, why is one doing those things right? We all know drinking too much or eating processed food and overeating.

Processed food is not good for us. That's not rocket science. I don't think we're fooling anybody. Everybody understands it as well. Why are we doing it?

Well, there's something driving the behavior, right. And typically, what's driving the behavior are these thoughts, the feelings and the beliefs. Right.

So this is kind of the subconscious aspect. Some of it it becomes conscious, but a lot of it is living in the unconscious, the subconscious, and there might be some shame or disappointment or ignorance or can be low self-worth or so insecurities, can be conditionings that happen throughout our childhood.

All these things that live under the surface that most of us aren't aware of, sometimes we can become aware of them, but that's what's driving the behaviors.

And again, why am I overeating? Why am I eating these foods that I know are not healthy? Even in the midst of eating unhealthy foods, for example, we can know that this is not good and we still do it like it's really wild how powerful these these energies and emotions and thoughts and beliefs are that are dictating behaviors. Right?

But then we can go a level deeper than that. Right? And this is kind of the sixth level. And it's like what is causing the limiting belief, what's causing that low self-worth or that that conditioning?

Well, typically it happens in these sort of what I call core wounds. Now, it could be a traumatic birth and it just might. My son had a traumatic birth. Actually, the birth was fine.

And then he had low oxygen saturation. So I had to get a homebirth and had to take him into the hospital under these bright lights, in this chaotic environment, which is the exact thing we were trying to avoid.

Nevertheless, that was the situation. They did an amazing job to help stabilize him and everything was good there. But that itself is a traumatic wound. Right.

And so that's that's could be the birth could be developmental ruptures as we're developing in our childhood, right. Between our caregivers, there's all these ruptures that happen along the way.

And if they happen consistently, then they can get conditioned into us and create our worldview, right. In psychology, you might call this the internal working model.

It's the model through which I view reality and my place in it. Right. And in other words, in my lovable I'm only lovable when I do all these good things right.

Or when I succeed or when I listen or when whatever the case is right or, you know, you must eat all the food on your plate. Well, that can actually create some beliefs and conditionings around food, right?

There's all kinds of these things that that get created at that core womb level. Right. But there's significant sort of emotional trauma, conditioning, physical trauma, even inherited traumas.

Right. I actually work with a lot of people that have Jewish descent and lineage. There's some stuff that can happen in that line that's not even there.

Right? It comes from grandpa, right. Or grandmother. So there's inherited traumas. And the research is very clear on this, by the way, even to the point where they're they're tracing methylation and if something's upregulate it or downregulate on the methylation aspect. So it's really wild how far science has actually gotten on to that front.

Or it could even be as a core wound, a disharmony, this environment. So growing up in an environment that is not well-suited for life. Right. And so again, it could be an emotional situation.

It could be just growing up in a very poor rural area. And all you have access to is all these sort of poor habits around you. Right. And poor lifestyle behavior.

So there's a lot of things that can happen. But again, if those are core wounds are at the surface, that dictate the thoughts and feelings and beliefs that dictate the behaviors.

Right, the behaviors expect the expression at the cellular level or the internal level. And then those are reflected in the markers that we might test for.

Right. They're showing up in markers and the markers give us the labels. Right. And so we tend to live in those sort of first couple levels, but it really it can be helpful to address some of the top one level level one symptoms.

In other words, drugs may be beneficial for some people to help stabilize them. And I'm not a huge fan of Big Pharma in anyway. And I would say in ideal world, those drugs don't even exist.

But there's been a lot of medications that could be very lifesaving for a handful of people just to get them stable. So I don't want to throw the baby out with the bathwater and so that can be helpful.

And then again, looking at the markers, how do we manipulate markers that can be helpful too, but then oftentimes that's not enough. We've got to go to the expression, look at what's happening at the mitochondrial level.

Might be an organic acid test, might be some gut tests. Great. That also may not be enough. We may have to go deeper and say, what are the behaviors that you're doing?

And this is where I worked with a lot of people that had autoimmune conditions and cancers and you name the symptoms and the disease and look at their behaviors.

What's your circadian rhythm like? Are you getting enough sleep? Do you even know what that looks like? What you're you're feeding schedule, right? How often are you eating? How much are you eating?

Are you chewing your food? Right. What is your social environment look like? How much are you working it? All the behavioral aspects of somebody's life is worth analyzing because that's going to dictate all those downstream things.

And again, even if we change the behaviors, we also must look at often times what's driving the behavior? Why is the person acting this way? Is it just out of ignorance or is there something deeper that is driving the behavior? Right.

So again, we work our way all the way down. And when we get to that core wound level, oftentimes that can be where we finally get resolution to the autoimmune condition or the low thyroid symptoms or whatever the case is.

It can go that deep. So we can work at all these levels and that the key is try not to get stuck at one of those first couple levels. Keep digging deeper, because that's where you may find the ultimate solution that you're looking for.

Yeah, that's so powerful and it's really important for people to understand that and go in. Touching back on what you had had mentioned, I see you. So you're working with people that had relatives that were Holocaust survivors?

Yeah.

Inherited Trauma and Hidden Drivers of Health

So they were so there they had never experienced that, but they had grandparents that experience that incredible, you know, obviously physical, mental, emotional, spiritual trauma.

And so now that so that and that is a driving factor and sometimes in some of their behaviors. And their beliefs. Right? So this is crazy. That's why it's so hard for these clients that I work with.

And again, I point that one out because it's an obvious one and it's one that the research has looked at. But this can be anything. It doesn't matter. I mean, almost all of us.

I mean, if you really would ask a few, you know, it's like like in my my family, both my wife and I have a family member that was sexually abused. Yep.

Right. Repeatedly. And so so that trauma has has you know, it happens to be both of our mothers, right? Yes. So that trauma obviously has impacted us.

In society inevitably. Right. And I had a grandfather who who was in the Korean War. Right. So when did the trauma of somebody who was in the war maybe doing atrocious things to others, but that inevitably has a trauma on the perpetrating individual, too.

Right. So there's all kinds of he was born into cultural environments. So we that the land that we live on essentially and the people that are around us, whatever is happening in that environment or has happened in the recent past is going to impact us.

Right. So there's all kinds of these things, right? If you're if you're an indigenous Native-American, right. And you're growing up on a reservation and it's a there's a lot of trauma as a Native American in this in this country.

Right. So this is all throughout our society, women and men and, you know, different it races and it goes through everything. Right. But but here's what's really important to recognize is that oftentimes somebody suffering from something could be anxiety.

Let's say somebody has high anxiety and they can't get their brain to switch off, which is affecting their sleep. So then they come to see me and they're getting horrible sleep.

They have high anxiety. Those two things itself are going to then manifest in many other symptoms. So in other words, the poor, the chronic poor sleep and the high anxiety, high mental processes is going to create downstream effects in and of themselves.

But then again, what's creating the sleep and the anxiety issues? Well, it could be something that that grandma experienced in the Holocaust, right. And because that was such a trauma, it got passed through the lineage that the grandson, the granddaughter has no idea because they didn't experience it directly.

So they don't know that that's the thing that's causing them. So there's there's different techniques I used to get into and reveal that. But this is what's so challenging is because it's not obvious and it's even if you know that about your lineage, you don't know that that's what's causing the IBS or whatever the case is.

Right. So it's it's really difficult to make these links. But I want to point to a study that was done using a mouse model to sort of show this this link.

And I think it helps tell the story of why this happens. Right. So there was a mouse that was that was given the scent of cherry blossom and then they electrocuted the mouse.

Right? So every time there was association with cherry blossom scent and electrocution, it's one of the words that mouse got very, very hyperactive, hyper vigilant around the cherry blossom set because it means electrocution.

Not good. Well, then they bred that mouse with another mouse who'd never been electrocuted and they had a pup. So the first generation pup, that first generation puppet, also never been electrocuted.

And they gave the cherry blossom set to that first pup nervous system spike. In other words, the hyper vigilance is now in the child. Right? And then they took that that first child and bred it with another mouse that has never been electrocuted.

Now we've a second generation other it's to mouse two generations removed from the original one parent mouse they got electrocuted same thing they know it's the same thing when they introduced cherry blossom send in nervous system spiked hyper vigilance.

So what's really cool about this is nature has an amazing ability to pass down really important information about the environment. This is a bridge in sort of you can call it evolutionary, I guess, but it's really just a a messaging signal to say, hey, there's something in the environment that is very dangerous and somehow it gets passed on.

Now, I mentioned methylation. We see altered methylation patterns. We don't really know how it gets. You talk to Rupert Sheldrake, he'll tell you. It's it's more of a genetic field, right?

A field that operates outside the body. So there's there's a lot of potentials here. It could be through mitochondria, could be the genes, could be through sort of water mechanisms.

There's all kinds of theories and ideas of microtubules. There's all kinds of biophysics that we can get into. But the point is, is this has been documented and it just makes sense and it just purely makes sense.

So if we're dealing with something, it's important. This is why it's so important to get to that level six area, if you can, generally with a therapist or somebody who can help you get there because some of this stuff is so hidden, it's so out of our own view and out of our own experience.

It doesn't really make sense to us. Yeah, I mean, that's, that's so powerful. The body's always, you know, in a sense, we want to we want prepare offspring for any sort of potential dangers so we can.

Adaptation to reproduce. And continue to pass on our, our genetics. And so, yeah, so if, if there's anything that's potentially dangerous, that's, you know, if there's any trigger that's associated with whatever that danger is, that is what we're trying to pass on.

And this is why, like babies have reflexes, right? These are all survival mechanisms. And so, yeah, it's all built into our nervous system. So very, very fascinating.

Now, I wanted to pivot this because we could talk all day about the philosophy and all of these topics. And it's so interesting. I would definitely recommend you guys if you're if you're listening at this point, you're interested.

You want to get this book Beyond Longevity book. I think that's what it is beyond the longevity book outcome. And read more about this. But let's talk about the impact of sleep, light and circadian rhythm on our overall health and longevity.

Yeah, I mean, one of the views or lenses I like to look at human health through is sort of this like, let's just say evolutionary lens. Even though I don't it's not it's not a philosophy I agree with wholeheartedly.

But but what we can say is that we look at organisms through throughout nature. There are certain things that are preserved through all organisms. Right. And all life on earth.

And the fundamental thing that we all have in common with every organism is light, right? So we all live on this planet, which operates on a day and night cycle.

So we've all had to adapt, whether we're nocturnal or diurnal. Right. And so based on this changing environmental pattern between light and dark on a daily basis, as well as seasonal, our biology is of every organism is going to be adapted to that.

Right? So it is something that is well preserved and throughout biology itself. And so just because of that lens, we can say this is pretty important and words we can't escape this one.

Right? There's no organism on on the planet in history that we know of that has escaped this idea of circadian rhythm. Right. That there's a there's a cycle that we must adhere to.

And so really, really important sleep is also one of those things that if you've ever tried to go two or three days without sleep, good luck, right? Like everything starts to shut down, right?

Like it's really, really important. Right? So it's like breath probably the most important thing because we can't go too long without that. Right. And then.

But we can go a couple of days without water. And water is really important, but we can go a couple of days without water, food. We can go a long time without food. Right.

So so these are kind of a hierarchy of how I try to position like what's important, right? Like, so sleep is one of these critical things. And the tricky thing about sleep is that we don't really know.

We know a lot about it and there's a lot we don't know still. So we don't know why we need to sleep per say, right? There's deep spiritual context there, but we know that we need to sleep every day.

It's not something that you can bank. In other words, you can't get 15 hours of sleep and think, Oh, that's just as good as two nights now it has to be done regularly and it must be on a clock.

In other words, you must have this sort of every day, same time, rhythmic pattern of sleeping. And when you don't, everything starts to go dysfunctional.

Right. In fact, I have my my mother in law here from South Africa, and she just got here two days ago. And she's going through the process of what we all call jetlag.

Well, all this is is a disruption in circadian rhythm, right? The internal clock clocks I mean, me say that there's many clocks within us. Those within our body of her biology are came from a different time zone and instantly got transported in a matter of 24 hours to a time zone that is, I think, 15 hours or 14 hours different, something like that.

Right. So so now her biology has to respond. It's in a new environment, right?

Sleep, Light, and Circadian Rhythm

So and it will, but it takes time to do that. Right. So this idea of entrainment, right. To get in train to this cycle that she's now on, it's going to take a few days.

And in the meantime, her immune system is weaker. Right. Her brain's not going to work as well. Her detox function is diminished. Right. Her heart and heart rate variability is impacted.

Right. The metabolism, her ability to burn fat and to be fuel efficient is is compromised higher inflammatory markers. Everything is is off because everything is guided by these time cycles.

Right. So the master control clock is essentially in the brain, right? We have the hypothalamus and the pituitary and the pineal gland. Those are kind of the three key organs in the brain that are governing governing the the sort of the master clock throughout our body.

But what's interesting is that we have these these little micro clocks within each cell. And, in fact, they call these clock genes. And these clock genes are period BMAL and clock.

And there's all these sort of names for them. But they are all part of the regulatory mechanisms of each cell. And this if you go to like a Chinese medicine time clock, you can actually see which part of the day the liver is going to be more active, which part of the day they have.

They have all that mapped out in the sort of Chinese medicine way. And then we go to the Vedic way and they have their map of of the daily cycle of human function and they use backed up with the caffeine and all that.

But, but they've mapped that out in their systems. And now Western science has done the same thing. We started to map out, okay, this is when growth hormone spikes and here's where aldosterone spikes and here's of course, where melatonin spikes and and cortisol and all these things.

So we can map all these rhythms throughout the body. But these rhythms are only they don't operate on the clock. Right. Like on the wall. Right. Or on your on your iPhone.

They operate based off of the clock in the sky. Right. The sun. And so based on where the sun is at and how does it do that? Right. How how does your body regulate?

Well, the light comes through the eyes, through the suprachiasmatic nucleus, and starts talking to the pinyin and hypothalamus and the pituitary and pituitary is where a lot of that hormonal regulation is governed.

Right. So so the and also on the skin, I should say. So those light frequencies are when it's high in the sky, we're getting full light spectrum as it gets deeper and on the horizon.

Some of those spectrum, the latter getting refracted back into space. So now just like when you when the sun is low, you can look directly at the sun, right?

Like it's red and you can stare at it and it doesn't hurt your eyes. That's because those shorter wavelengths are bounced back into space and the red light does not impact you as much.

Right. But once it starts getting the star, you can't you can't look at the sun. That's how your body's able to recognize what time of day it is based off of the light spectrum and the frequencies.

So it's really wow. That we're geared toward this. Right. And even if you if you if you with your eyes closed, your eyelids are so thin, right? So it actually can accept the the the the longer wavelengths will actually penetrate through the eyes, in the shorter wavelengths to even to some degree will penetrate through the eyes and wake you up.

Right. So because the eyelids are so thin, it actually allows for that penetration of that light through and to wake you up as well as the heat. Right.

So we have these things like the light frequencies, the temperature, the food when you when you eat and exercise movement. So those are the main regulators of your circadian rhythm.

They are the things that entrain your circadian rhythm and your internal clocks. If we didn't have those stimuli and they've done some a lot of research on this, they'll put people in like a cave or underground and basically pitch black and they're there.

Their body starts losing rhythm. It doesn't know when to wake up and when to go to sleep. And so so not only mentally do you not know when, but your actual biology loses track of the time.

And I think it's operates on a 23 and a half hour cycle. And so it'll start to wander. Your biology will start to wander internally on when to, you know, regulate thyroid hormone and all this stuff.

So it's really interesting. So we need that light stimuli, particularly as well as food, as well as movement and temperature to to a lesser degree, we need those stimuli to say it's morning, okay, it's 7 a.m., turn on all these things.

Right. And bye bye 7 a.m.. I mean, the sun has risen to a certain point in the sky and so therefore the body knows now it's time to kick on all this stuff.

Right. And vice versa. So this is the rhythmic function of the body. And when we lose it all cause mortality increases. Every single disease. State increases anybody who walked in my door.

No matter what they had, whether they had fungal overgrowth or compromised detox function, losing their hair, hormonal imbalances, cancer autoimmune conditions doesn't matter.

Nasal activation syndrome, any of these conditions that people have, that's the first thing I would check is what is their circadian rhythm and what is their sleep looking like?

Because if that was not well regulated, then it's it's so hard to to reverse or to to recover from these conditions. That is it's an uphill climb if you're not sleeping, if you're if you're awake at night, if you have a swing shift and you're you're traveling all the time between Europe and the States and you're you're bouncing all around.

Good luck trying to get, you know, a good metabolism and to lose some weight or have your hormones reflect healthy function or to, you know, detox properly.

Your body's a mess constantly because it's not getting that regular cycle. So that's kind of the I guess the lowdown on the quick lowdown on this stuff.

It's it's it is it's so important. In fact, now we have cancer drugs that we're using and western medicine has figured out, oh, if we apply these cancer drugs at a certain time of the day, they're more effective than other times of the day.

And again, Chinese medicine in our data, they've known this for a long time, that you administer certain things at certain times of the day and it's more effective and that's how it works.

But we're now starting to figure it out in our Western ways too. So again, it's starting to become more of a thing. But I still don't see that people appreciate just how powerful circadian rhythm is.

And I can tell you story after story of people losing weight and hormones, you know, skyrocketing that were notoriously low like testosterone. They couldn't figure out how to get it up.

They were looking to go on testosterone replacement therapy and and then they just fix their circadian rhythm and they lost the belly fat testosterone shot up, you know, like all this stuff starts to just naturally dissolve because they're they're now in in harmony with the way their body is meant to function.

Mm hmm. Yeah. I mean, and I think for most of us that are aware of our circadian rhythm, when it gets off, we feel it's like kryptonite. I know. Just just this past week, I took my my twin boys to a Atlanta Braves baseball game and. Oh.

So we were out a little bit late, and I was driving home at, like 10:00. And at 10:00, I'm usually like, either just about to get to get in bed with all the lights off, talking with my wife or I'm in bed right already starting the sleeping process.

And so here I am driving and that's telling my brain like so because I have to be very alert and lights are on, things like that. And so I'm telling my brain, it's daytime, I need to be alert.

So I get home, it's like ten, 15, 1030, you know, put the kids to bed and you know, I'm ready to go to bed. I'm I'm winding down talking with my wife, lights off, ready to go to bed.

I get in bed at 11:00 and like, I can't fall asleep for an hour because I had already trained my brain that I was awake. So I didn't get the melatonin release that I needed.

And then so I ended up falling asleep at 12, like you mentioned, even though I wear an eye mask at night, there's light that comes in a little bit of light that comes in my window and I'm so responsive to that.

So it comes in, it's like, I don't know, 650 Usually I'm up at like 630 or so, so I figured, oh, I'm not going to set alarms, going to sleep till whenever I wake up, like I wake up and I'm like, I don't need to get up.

So I'm still laying there, but I can feel the cortisol coming up, I can feel the wakefulness coming up. Like I'm not going be able to sleep any longer.

And so and then that day I was tired. I was much more tired than I normally am because my circadian rhythm was off. And I think, you know, there's a great quote that says mal illumination is to the body what malnutrition is to the body.

And that's I think it's important for people to understand is the way that we're illuminating or the light exposure that we're getting, that is essential nutrient because nutrition as well as light sends information to our body and we can send the proper information at the right times or the improper information at improper times.

And I think that's really critical. And it's interesting with food, right, because there's so much debate about food and

discussion about food and and that's that's great because there is there's still choices to be made that I think are important and things to learn.

And yet there's so many things that are upstream of food, right? So when I, when I had my, my son and he slept in the bed with us for the first couple of years, I knew that he was a poor sleeper anyway.

And so I was getting poor sleep. My wife is getting poor sleep, like many new parents do. They get poor sleep for at least that first year. And so I had. Twins, so that was brutal.

Yeah. I can only imagine what your wife would say. Yeah, yeah. You know, that's. That's rough, right? So let's imagine that scenario, right? And so it without the awareness, you know, and I have poor sleep for let's say a year, I could develop certain, let's say, markers or symptoms that I could go to a doctor and they could assess.

Right. And if the doctor or the practitioner or whoever is helping me doesn't have the awareness to ask me about my lifestyle and behaviors, then they're going to treat the symptoms as if the symptoms are a problem.

Right. But the reality is what's causing my symptoms, my diagnosis, whatever the case is, my expression, going back to sort of the symptom hierarchy, right, then they're not going to get to the root.

And the root is and I'm not sleeping because I have a newborn or I have, you know, a situation that's creating that. So, so that that lifestyle, behavioral.

Let's say, challenge that I that I'm dealing with is going to affect my thoughts, feelings and beliefs, right? So it's going to actually create and I remember this very well, even though I knew about food and nutrition and when to eat and all this stuff, I would make poor choices because my, my actually ability to regulate, to, to, to make decisions is weaker, right?

My my sort of discipline is is reduced. And this is the case that they train Navy SEALs and military people like that for a reason. They sleep deprived them and they put them through training because that in and of itself is much more difficult.

In fact, I think there's studies out there that look at sleep deprivation and compare it to drunk driving, and they find that sleep deprivation when driving is just as impaired an impairment as as as being drunk.

So there's some real issues on at the brain level so we don't make decisions. Well, we have more depression or anxiety when we don't get good sleep. Right now, those things, we tend to use food as a coping mechanism.

Right. So I noticed in my in that time I was eating, I made more bad choices around food. I eat more processed food, more fatty, sugary kind of food combinations are processed and I know better.

Right. So it's not that we need to educate more on food per se. We need to educate perhaps more like it's upstream. And when you get a better when your light diet improves.

In other words, you're getting more light particularly early in the morning to set your circadian rhythm to in train the body and the brain and the hormones and everything.

But when it comes to food and you know, I know you know this, Dr. Jason, but it's like there's so many other things that are driving your hunger, your desire for food, whether it's neuropeptide Y, it's insulin, whether it's leptin.

What I mean, there's there's all these hormonal signals and then there's the gut bacteria that are also sending signals to your brain about what to eat and when to eat it and how much to eat and all that.

So there's so much more guiding that way. So when we get our light diet correct and we get outside in the morning, we get that light nourishes and it spikes our cortisol nice and high.

We get a good cortisol waking response rate, our hormones are online, right? And then we make good choices on top of that. Now, this choice around food is totally different.

Right? And I get good sleep and I go to bed, you know, before 10 p.m. and I'm not eating food right before bed and making good choices there. But now everything starts to snowball in a good direction.

And when I screw up the sleep thing because I had a newborn, everything starts to it's a downward spiral. Right. And it's hard to recover from that until you get the sleep thing correct.

So again, it's sleep and light are one of these things are the things that are so upstream most decisions. Right? Again, if you don't believe me sleep deprived yourself for a week and tell me how good decisions are, how many good decisions you're making, tell me how much you actually wanting to go exercise or move around.

Tell me how you feel even more depressing or more socially isolated or, you know, more socially active. Right? So there's all kinds of these these things.

And again, when that core thing gets off and all these downstream things take a hold. Now those downstream things are then going to have further impact.

Right. What choices you're making there. So it's again, it is a downward spiral. And so we got to go back to the source. That's why for me, when I work with people sleep and circadian rhythm are so fundamental because once we get that right and that can take two or three weeks, just like my mother now who's here, it's going to take her two weeks to get her circadian rhythm back in train to this time zone.

And she can do it more effectively if she gets outside. Right. And if she starts to start to do some of these things. But that's the thing about sleep, is that when it's when it's destroying your circadian rhythm is not very good.

It can take 2 to 3 weeks of consistency and of doing the right thing, getting to bed at a reasonable time, you know, playing with the lights at night and making sure those are dim, perhaps a little more orange than they used to.

Not watching TVs and screens, right. Not eating before. There's a big one. You know, this is one talking about food and your food choices. Not eating before bed is maybe one of the most important things that we can do.

I can say here how that's to impact things down the line. So what does that how does that how does that impact? So skating and rhythm and melatonin production and how does that.

Impact so so again, our body is is primed to operate with the solar cycle, right? So in other words, when the sun's highest in the sky, my digestion is typically going to the strongest.

Right. And so cortisol, of course, has a time when in the morning. Right. It's going to boost up in the morning and it's going to wane.

Food Timing, Fasting, and Metabolic Flexibility

Now, if all of this is a mess and my hormones are firing at different times and our cortisol is weak and it's inverted, and now it's happening all over the place now, inherently, the way my body functions is not going to be optimal, so I'm already at a disadvantage.

Now, if I start layering things like eating food at 9 p.m., particularly, you know, big, heavy, fatty, dense meals, my digestion is weak, it's not optimized.

Right? The hormones that are that are needed to sort of process that food and metabolically utilize that that energy is not going to be optimized. So I'm not going to get I'm not going to be able to pull glucose out of the blood very well.

I'm not going to get it put it into cells very well. My metabolism is not going to be optimized. The ability for the liver to do its job and detoxify and gallbladder two to release bile acids.

Everything about the digestive process is not going to be good. It's not going to be optimized. So those foods are not going to get broken down. They're going to create an environment in the stomach and a small intestine and a large intestine that's going to be more toward purification as opposed to digestion, more towards, you know, things just going to stagnating. Right.

In fact, just the migrating motor complex that moves through food, through the digestive tracts not going to be optimized. So now we're going to food sitting in this tube, not really doing as much as it could.

And it's going to start becoming this purification factory, right? It's not going to end up. Well, that creates an overgrowth of certain bacteria that are not optimal for health.

It's going to create more lipopolysaccharide saturated release. It's going to create leaky gut. It's going to create more inflammatory, inflammatory markers in the digestive tract.

And then outside of the digestive tract, in the whole system, we're going to get elevated markers throughout the body. So this is going to lead to this degradation of the actual GI system as a whole.

Everything's going to get more inflamed. And again, it's this downward spiral function, right? So once we start getting all this stuff, this is what can lead to things like SIBO, this is what can lead to things like, you know, any inflammatory bowel disease, all these things that we don't want are going to happen.

Right? So and again, at that at night, what we what we want, if we don't have a belly and a gut full of food to process because it's a big you don't realize how much energy is required to process food.

Right. So imagine you only have so much resource and you're dedicating 40% of it to digesting a huge meal. And instead the body's what it really wants to do is start cleaning up and preparing for the next day.

It wants to start turning over cells and and and processing certain hormones right through the liver and detoxing the body naturally. Right. So there's, there's a process that the body's wanting to get into and we're saying, no, no, no, don't do that.

Here. I got this big bowl of ice cream and pizza for you. Like, handle that. Right? So not only is that a tough food in general, but it wants to do a different task.

So we're preventing it from doing the cleanup tasks and we're giving it another job to do. So now, not only that other job adding to the pile, we're actually not even able to clear the pile that's built up.

So it's like saying, don't clean up your house. Let's just keep adding more trash and eventually it's just going to result in some kind of symptom, some kind of diagnosis, some kind of issue.

And it can be anything. It can it can end up being joint pains can end up being brain fog. You just don't know what it's going to end up doing. Driving up all the inflammatory pathways, everything.

And I think this is I want to finish on that because I think this is really key because, you know, a lot of I'm a huge advocate of intermittent fasting and a lot of people that follow me are listening this are practicing a level of intermittent fasting.

And a lot of people kind of fall into this idea of like, yeah, I'm just going too fast all day. No huge meal at night. Right? But like what Jason is saying here, you could really be throwing off your circadian rhythm.

That's not the ideal time. I mean, obviously, you know, everybody's schedule is a little bit different. But based on our circadian rhythm, it's better to have your compressed eating window getting the benefits of intermittent fasting,

but consuming those meals while the sun's in the sky.

Yeah. So you're hitting on something really, really interesting. And I think the reason it was that we've fallen into this trap of skipping breakfast, eating kind of like a moderate, mediocre lunch, maybe kind of a nice salad with some other things there and some protein.

And then we have this like nice big meal or a lot of people are just doing one meal a day. And and it's not that one meal a day is bad. It's just you're right.

It's the window at which we're throwing in into now. Why are we doing that? It's because of our culture, right? Most of us work during the day and then we want to have a meal.

We want to share meal with our family. And that's the time when we eat our big meal. So culturally it's appropriate, but biologically it's actually inappropriate.

It's moderate. It's really the optimal window for those heavy, digestible meals is probably about from 11 a.m. to two or 3 p.m. That's the window that you have good blood sugar control, you've got good insulin regulation, you've got good digestive capacity and digestive is the number one factor for, I would say, processing a meal effectively.

In other words, if we're eating too often and eating too much, we don't have the digestive juice, we don't have the hydrochloric acid, we don't have the digestive enzymes.

We don't have the the ability for the liver to do its job. We lose the capacity to digest food in our Veda. That comes well, we get to go in to that. That's a whole nother rebuttal.

But but the idea is that when we are hungry, that's when and this is something that I think we really want to get in touch with. Again, what is hunger? What is real hunger?

And this these little pangs that we get can often be resolved by drinking 16 ounces of water. Right? They can be resolved by going for a walk. They can be resolved a number of different ways, as opposed to just having another snack or another meal.

And so if someone's looking to change their life and the relationship with food, this is a relationship I think it's worth exploring is hunger. Get into hunger. Feel that hunger.

And when you go into that meal, you should be ravenous and hungry. And that's so good. Every every bite you take, every food that you eat will taste better, right?

Your body will be able to process it better. Right. So so I totally agree that if you're one that has the capacity and the ability based on your lifestyle to eat either maybe, maybe it's a later breakfast and maybe it's a large later lunch.

Right. So you can this idea of breakfast, lunch, dinner can be totally thrown out, right? This is a cultural thing. It is not set in stone. But I totally. Agree.

Totally. And I do a I do one meal on Wednesdays and I eat a big lunch on Wednesdays, usually somewhere between one and 2:00. And I sit with in fact, I usually make dinner for my family and I sit there with them and honestly, I'm really not hungry.

And I eat and a good amount of protein, you know, satiating foods and sleep, prioritizing sleep really helps with that like you were talking about. And then you kind of get into this process where you're very metabolically flexible.

And so my body almost craves that. You know, I do roughly about a 24 hour fast once a week. When I get to that point, it's almost like my body knows the signal.

It's like, okay, right? I'm I'm not even going to be hungry. The first few times I did it, I was I was hungry at I felt kind

of those feelings because I train my body to say, hey, this is the time of day where we eat.

And now my body kind of knows every periodically we don't eat dinner. That's right. And this is where I'm going to put all my energy now into healing and repair.

And I'm actually going to take away hunger and cravings because I know how beneficial this is. Then tapping into the innate intelligence. And of course I'm programing it right by getting the proper amount of light exposure, getting the proper amount of sleep, and then the lunch that I eat is very blood sugar stabilizing.

It's not like, you know, there's no processed foods in there. It's higher in protein and fiber and polyphenols and healthy fats. And so that helps train my body to wear fasting through dinner.

And I'm watching all my kids eat them, you know, chopping up food for them and whatnot and my wife. And yet I'm able to enjoy the company without actually needing to eat.

And that's the thing that you hit on something really important there, which is this process of kind of going through it. Right. So you work with a lot of people that have, you know, blood sugar control issues, right?

They may be hypoglycemic. Right. That's another one for a hypoglycemic. I wouldn't say just start intermittent fasting. That's going to be a disaster. Right.

There's a process to to evolve into to become more adapted. Right. And so, again, this is where the invitation is to explore that sort of that that that hunger edge for you.

Right. Like where is that? Right. And you might get to this point where you like, geez, I'm really hungry. But there's there's generally a point that you feel like you need to eat and it's actually not as bad.

You just you haven't been to that edge yet in a while. And so once you get to that edge, then you can kind of you can play with that for a little bit and then you can push beyond it. Right.

And so it may look like if you're used to eating three, four, maybe five sort of meal snacks a day, you start cutting back some of those. And your body's going to send those signals like, Hey, it's snack time.

Remember, like, we're supposed to have snack time, and then you push through that and and then you get to lunch and then you're a little bit more hungry than usual.

Well, that's going to kind of modify and adapt as you become more metabolically flexible, right? So this is what I think is really important. Yes. There's differences in constitution, right?

There's certain people that actually do better with fasting for longer periods and certain people that don't do as well. I'm kind of in the middle. I've discovered and the some people that don't really do great with long periods of fasting can do it, but it's just not optimal for them.

So maybe it's like a 12 or 14 hour window consistently. That's really good. But these like these windows of time are really important where the body has the capacity to do other things and digest food.

Right. I mean, you figure it takes 2 to 3 hours in it to fully digest a meal. If you're doing it right, that means if you're chewing your food thoroughly and all this stuff.

Is sometimes longer, depending on the secretary. For your success. Right. You can track this with blood sugar monitors and other ways as well. Heart rate variability.

There's all kinds of things that you can actually, you know, check this stuff and see how food's affecting you. But as your body gets better at that, you're going to have more adaptability, more flexibility, and you can find your window.

But that that time where the body's not dealing with food, the brain is sharper, that you have you again. Once it's adapted, you have more energy, your mood is more stable.

You're able to detox like that is the key to longevity is giving your body these windows. But it's it's critical that you're doing the other things right as well.

You got to get the circadian rhythm right and the sleep right. What we're talking about here is going to seem impossible. When I was sleep deprived with my little one, if I was trying to do this stuff, yeah, I could do it.

But actually I might be really moody right now, or I might be just unable to to effectively push through and get things done that I needed to get done.

Right. You're going, you may. Lose and you may not really get the health benefits of it. That's kind of like exercise. Exercise is most people you say, hey, is exercise healthy?

They're going to say, Oh, yeah, of course it's healthy. But if you look at it, under a microscope means extremely catabolic and damaging to the tissues of our body.

It's really the recovery process that's really where we heal. And so it's kind of like we want to hit right window where we're challenging our body, you know, this kind of horror, getting this more medic stress benefit, but not overtraining.

So, you know, when you add your newborn, your training level, you know, if you if you're I know, I know I experienced this the intensity level of my exercise when we're not in a newborn stage versus, you know, we've gone through with our twins and then to other to my two daughters three newborn stages.

And my intensity the intensity level of my exercise, if I tried to do the same intensity level and the same frequency of exercise during that newborn stage where my sleep wasn't good, it's actually worse for my body to some degree than not exercising at all.

Yeah, exactly. And this is where maybe it's a good point to end on, which is that like where I think most of us in the modern world can start to explore more are at the extremes.

In other words, push yourself in extreme and rest in the extreme right. So like and most of us are are eating too much and too much too frequently. So what's the other symbol? We need a little more time off of food.

So when I occasionally I'll do, let's say a three or five day the juice I you feasting in other words and we get tons of juice. I'm getting actually some calories.

I'm not like so fast per se, but there's no physical material that I'm eating. But that's still it's a catabolic, it's a hormedic process and I got to be gentle on my body.

Now, could I go do exercise? And, you know, like, yeah, we can do that. Like we can do ten days of fasting and still perform exercises, no question. But the real benefits, I think, are when we when we do something like that, maybe it's maybe a 24 hour fast is extreme.

You take it easy that day, you know, don't push yourself, you know, rest, meditate, pray, relax, lay down, you know, go outside, go for a late walk. Right.

Like these are the things that I think I invite people to explore more. And this is if you want to look at what people on the longevity regions of the world, how they lived, it was at the extremes.

They got extreme heat exposed to extreme heat because they didn't have central heating or central cooling. They got exposed to extreme cold because they didn't get they didn't have central heating that fires. Right.

They they lived directly by the circadian rhythm. They didn't have lighting for most of their lives and the electricity for most of their. And they went long periods of time, often, to be honest, in maybe the more severe damaging effect.

They didn't have food. Many times for four months or years. They went without food because of certain government rationing and wars and things that were going on.

So we they went through extremes. Now, I'm not saying we should do that, but we can invite a little bit more of this extreme nature of cold therapy and hot therapy, right, in saunas of of getting good periods of fasting and good periods of total rest and pushing our bodies a little bit more.

Was last time you sprinted, right? When is the last time you really, really used your body to its full capacity to start pushing of these things? Wherever you're at, it looks different, but that's where we're going to start to really gain the benefits, because the extreme side is tends to be where the body's starting to push and adapt and create more resilience and more adaptations that are positive, that are, that are, that are sort of this antifragile aspect of who we are.

Right? And then the rest side is will recover without that severe, significant rest. And again, the insides, your digestive tract recovers when there's no food.

Your microbiome diversity improves and blossoms when there's no food, right? Detoxification and autophagy and mitophagy and all the recycling of proteins and and all the the getting rid of the waste happens when there's no barrier, when there's nothing else for that system to do except for start to clean up, right?

Go into the extreme sleep, so to speak. I get really good at sleep. Right. And the actual sleep architecture, these are really important aspects. And so again, what I see in our modern world is that we live in this with this constantly controlled 72 degrees Fahrenheit environment all year round.

It's same lighting all year round. We don't get dipping into that. We're not dipping into the extremes as much. Right. We're constantly feeding. We don't go through feast and famine on a on a daily level or a seasonal level.

Right. Everything's just kind of the same. And so that is creating a bit of a weakness in our Constitution. And so there's and again, this can you can even apply this to our immune system.

We need to get sick. In other words, I mean, I wouldn't even say sick. We need to be challenged by organisms in our environment. Right. And you can even make this this this case for things like radiation that we know that from the sun and even some of this other radiation that we might get from Fukushima type of things there is that there's actually research showing that small amounts of this sort of radiation, small amounts of chemicals can be beneficial because they're exerting this hormedic effect.

They're creating an adaptive capacity now against some chemicals that even the micro level are toxic and even more toxic. So I want to open that can of worms, but the concept is such that we need to expose ourselves to the environment.

We are stronger than we really realize. We are more adaptable and when we get the core foundations right, like getting good sleep, like having a good social environment, like moving on a regular basis, like eating good high quality foods at the right time and digesting our food.

Now we can encounter our environment, we can resist it. We can be strengthened by it as opposed to taking down by it, right? So it's this sort of like resilience in fortitude that we're building and this is kind of a chiropractic model, really? Yeah.

I wasn't trained as a chiropractor, but everything I know about chiropractors like this is kind of what we're talking about is building this resilience through through kind of this engagement with our environment as opposed to building a bubble around us.

Right? Like that's not the way we do this. Right? Like you said. Well, we'll finish there. That was that was awesome. Guys, check out BeyondLongevityBook.com to get Jason's book.

Jason, again, thanks for your time. We could have gone, you know, four or 5 hours. We could spend a whole. Lot of talking. Yeah. Yeah, I know. You have me on.

You got it. Absolutely. All right, everybody be blessed.