Introduction to fasting and womenu2019s hormones

So I just wanted let's start off by just saying thank you. I appreciate you having this conversation. I feel like you and I have had so many deep conversations on metabolic health and hormones.

And each time I walk away and I want to talk to you more. So I really just want to start off by thanking you for coming on the summit and you are a force to be reckoned with.

So why don't you give us a little bit of a background of how the heck you got into metabolic health before we launch into hormones? You know, I really think metabolic health is only for for the physicians who are filled with curiosity, like if you can satisfy your curiosity in medicine easily, don't walk into this chapter because the hunger I mean, I really I was sitting thinking the first season where I put this much energy behind behind what I was already doing, which was plenty I have plenty of work to do.

I did not need another side job, which was, well, how would that play out in my brain injury patients? How would that play out in my 18 year olds that are £100 overweight already?

It's that metabolic curiosity, as I, you know, took on that first wave of, well, what do you mean, ketosis? You mean ketoacidosis. I mean, that's where I started. Yeah. I mean, that's a common place.

That's a very common start to the whole ketone compensation for sure. And I think, you know, one of one of the places where, you know, you watch what drives people and I think they're they're their roots of origin have a lot to do with that. Hmm.

So when you look at my roots of origin, I am a I am a hog farmer's daughter. I grew up as the farm kid in the small class of 21 kids. And I can remember being in the sixth grade knowing that I was not expected to go to college because farm kids don't do that.

Well. And it didn't matter that I had, okay, grades, not great grades at the time because, well, farm kids didn't do that.

Understanding estrogen as a hormone family

That was not expected. And there was a transfer trance formation moment where I identified as well. I do what everybody's expecting. I'm a farmer's daughter. I do.

I work hard. I don't get in trouble. At school, there was this little voice that said, well, your you must not be smart enough to do that. Hmm. And my dad sits me down in the seventh grade in my little school.

You went from K through sixth? In seventh grade is when the, like, the big kids did their thing. And so it was the advent of the seventh grade year. And my dad sat down and said, Do you want to know a C, what's about to happen to you?

Oh my gosh, really? He goes, No one will ever look to see what your grades were before the seventh grade. It's a reset and I. I couldn't believe he was saying this is like, I've seen you.

You're really smart. And this is something my dad does not he did not help with homework. He did not care if I got a great grade on my spelling test. It didn't matter nothing.

But he said, no, you can you can push reset. And I at that moment I decided I was going to be smart. I was going to get the grades that I knew I could get.

And I transitioned from the, you know, average to the top of the, you know, made the honor roll six, six weeks later. And but that story of origin, how did I go from not being not applying myself, maybe you could say, but also just following the expectations of what the world was saying.

Here's what your track is. Yeah, I'm saying now I'm not going to do that. Yeah. And I watched that story play over and over again in my life where, yeah, look at the number of kids that go to college that want to be a doctor.

There were 500 that sat there in that biology class, one on one. And the professor said, two of you will make it to medical school. So lucky. Wow. And then I found that the only way that you could sustain the level of of increasing knowledge that really was taken at each level was a genuine, curious city like you had to, you had to have that.

Yeah. And, and I think that is, that's how I got into metabolic health is the curiosity of oh could this really help better than Lamictal or whatever.

It wasn't the drugs you were prescribing. And so your background was as an internist internalizing you were like a family practice style. Right? And were you doing all of that without addressing metabolic health?

Like, were you seeing things come in before you could actually really dove into getting to some root causes? You know, I think as an internist, one of the one of the staples is you dive deep and you don't settle for little answers.

Now, most people spin that off into a different organ, like you are an internist that becomes a cardiologist or an internist who becomes an endocrinologist.

Or so you you kind of subsegment that you're going to take care of this piece of the pie. And so staying in general, internal medicine was a choice that I made when I said no to to becoming a pulmonologist, an intensive care physician, which still had lots of attraction.

But I didn't know who was going to raise this little baby. I had my arms, so I was looks like enough to do. Yeah. And my husband quickly reminded me, you get that you're you're trading one of the most lucrative bets in medicine.

You are the least lucrative. But my guess. He didn't know. He didn't know the heart. Maybe he didn't truly know the heart of the woman he had married.

She was on a mission. To do something big. But I found that looking at internal medicine, it didn't take long for me to. I mean, I think it was like within a couple of months of outpatient practice that.

No, no, no, no, we just can't throw medication at this. You're not that's not going to do it. That's not going to do. And to truly be based in my first job was pay for perform.

It's a job where I got a better grade nothing like competition to get me going actually I got a better grade if my patients lost weight, I got a better grade.

If their depression was controlled, I got a better grade if they had a sleep score. Yeah. So seems on first glance that seems pretty good though, right?

I mean that's so yeah. But is it based of medication or changing lifestyles? Honestly, the first job I had it was based off a lifestyle. It was truly a yeah.

It wasn't just a query that an insurance company runs to say, are you on generic Prozac or are you on the branded form? Right. That's what it turned into about eight years later.

And it was so offensive, like, oh my God, whittle down my practice to that. No, I'm not doing this. But I think metabolic health, it really is a place where somebody who really likes the advanced.

How does this fit together? It isn't a casual conversation, even if you're trying to really lift people through the

education that that happens. And what a great place to be in the last five years.

Right. But from the from the place where I entered it and felt very alone, like there's a difference between trailblazing and being proud of that. And then the crickets of why is no one else doing this right?

It's lonely. And it's very much so. I mean, I've even in the short time that I've been teaching fasting to the world, I can really see that more and more people are like, okay, wait, help me understand it.

Fasting during the menstrual cycle

They don't just want it spoon fed to them. They just want to like help me understand why this works and where it works for me. Do you feel like in the lens that you are seeing health through?

Do we know we're in a metabolic mess? Hopefully people listening understand that. But do you feel like women are at a decent vantage metabolically than men are?

Well, I mean, it's a great question. I look at adolescents today as the first place that I see such a striking difference between, you know, entering my practice 25-26 years ago and how, yes, there were some overweight kids that left pediatrics and came to internal medicine, but they were rare.

And now the amount the just amount of obese children that are spending, they first of all, they never have peak peak development of their brain. Their brain growth is blunted because of the constant smothering in insulin from being overweight.

And so you take that disadvantage that their hippocampi are smaller, they are not as connected, their sleep is not as deep, and their addiction to processed foods, they reigns over there over all of their growth or their bone development and specifically their brain development.

You know, I just want to say one thing on that point. Do you know that I recently heard that we've got like something like 80% of our youth is unfit to serve in our military.

Oh, it's incredible to. Add to that. So when we look at the like when you bring it to a brain perspective and especially, you know, dealing with like the female girl teenage brain, you know, but but just the ramifications of this metabolic mess that stems from processed foods is beyond somebody being obese.

It is so much bigger than that. And I think that that I just wanted to highlight that because it's easy to look at, oh, that somebody a teenager is got, you know, an extra £50 on her.

But what you just said about the hippocampus, that's mood and memory. When you when you've got a smaller hippocampus, I like. Holy cow. What does that mean for the long term of your life?

Right. I used to have this adolescent team that I would get to do their continued education. It was a volunteer thing. I loved doing it and they were all from homes that they didn't have parents around.

So call it foster homes called a shelter, whatever. And they were so unwed, educated about how important sleep and not not swelling your brain like not having a car injury enough.

They would look at as a as trauma as the first thing that they connected to. But I'm like, Oh, no, what? When you don't develop that, you surrender your chances of success.

And they would say, Oh, what do you mean, I can't succeed if I don't do it your way? Am like not a success being defined as relationships that last over time.

So not just fleeting relationships but long term relationships success at being resilience. When it when setbacks hit you, do you have the ability to process through stress, which is a resilience?

And then third is the rate at which you can acquire a new skill and put it into long term memory. Again, hippocampal development is one of the one of the key components to that.

When you have a short, stubby little hippocampi, your chances of success go down. You can't do those three things. Exactly. Just so we don't lose people.

Repeat those three things again, because this is this is huge for the future of of our of our young for sure. Yeah so short stubby hippocampi. The reason success evades them is number one, their relationships are blunted.

They don't have they have a much higher chance of discarding relationships after short term number two, they are unable to recover from the setbacks that every human life is going to have.

So resilience is part of what happens and that interconnectedness of the hippocampus. And then the third one is how well can you acquire a new skill? Take on this new memory, which is what new memory and then get it into your prefrontal cortex so that you can use it long term.

The all of those are severely blunted when the development of the hippocampus is blunted and it is absolutely blunted when they spend especially overweight from puberty through that first couple of years in their twenties.

So a good decade where insulin is high in nearly every teenager except the ones in my house and friends that I yell at. Maybe the rest of them, we're in less.

You've got really diligent leadership in in the world of nutrition and even the diligent ones, they're afraid to say the things that teenagers really need to hear, which is, no, you do not need that food.

Right. You know, and what does that do for the aging hippocampus? Because, you know, we know that Alzheimer's starts with the plaque in the hippocampus.

So what does that mean? You know, as you age and specifically, I want to tie it in to women and hormones in the sense that we're are if we if we go into our menopausal years and we've already got this insulin soaked hippocampus glucose and insulin soaked, where it's shrinking, it's blacking, and now we're losing estrogen and progesterone.

What is that going to do for our mental health? So one of the ways I love to teach about hippocampus for especially women, is you know that, well, they used to do this.

You know the show Survivor. Yeah. Okay. So who doesn't know Survivor? Right. Where they put you on this island and you're with these strangers and strategy and survival and and tactics for how quickly you can learn.

Things are going to be part of who wins. But did you know that if you were going to bet on the winners of Survivor? And I think it was like the first, I don't know, 16 seasons, the hippocampi were measured that you could predict the winner by the longest, thickest hippocampus cranes.

So isn't that great? Yeah. So you look at the skill set, you say, what does hippocampus have to do with that? You know, like it is, I usually use this mood and memory to EMS your mood and memory.

So mood being one of the key things where when you walk into a moment of stress, when you look at how well your brain regulates your mood, hippocampus is very much in charge of that.

And just like if you were on Survivor and you walked in with a smoking hot body with a cute little bikini, that is a handkerchief. Really? That's smoking in body is going to get you a few points for the first couple of days.

But if you have a hippocampus that is underdeveloped or swollen, swollen, especially from several of the things that control your hippocampus, your mood will be irritable.

And as much as that other race or even your fellow women will forgive you because you're smoking hot on the first couple of passes, they are not going to forgive you when you fly off the handle and cannot regulate your emotions.

That especially when a period comes or menstruation hits during your survivor, now your mood swings higher and lower. It's even more of a range of emotions during that week, and you can't regulate it when you can't regulate that emotion, your your attraction to other human beings becomes less and you get voted off the island.

That happens in the human race, too. Like if you're on a team of people and you show up to my job and you are crabby to my patients, I'm going to send you home.

I'll give you a pass once, maybe twice if you're smoking hot, meaning if you do a really good job and all these other areas have a big smile, it'll work every day if you keep if you keep flexing that you cannot regulate your mood.

You cannot deal with whatever outside job issues are now impacting the way you work on my team. You're going to get fired. You're going to be voted off the island.

That's and those emotional regulations are highly dependent on what was happening during the developmental stages of that hippocampus when when their life was upset.

One, you know, again, several of the teens that I would have the privilege of advising the parents disappeared. Moms slept with a neighbor. Dad ended up in jail.

I mean, all kinds of disruption for what's predictable in life. And now you're asking this teenager to say, now I need your mood to be stable. I need you to, you know, focus through college.

I need you to, you know, acquire skills in the workforce. Well, all of that is going to blunt the development of their hippocampus. So how would we know?

Like, how would you know if you're hippocampus? I mean, again, you know, if you're a 45 year old woman listening to this, how would you know yourself having a smaller hippocampus?

How would you know your child? Like, there has to be a way we can recognize this before it completely diminishes. Right? Well, the best way is a functional MRI, but that's a little spin.

And you really kind of need a reason to do that. So you can measure the volume of each parts of our brain with the advent of how beautiful the pictures of the brain have become over the last 30 years.

Time-restricted eating and circadian rhythm

But again, to two ways to look carefully at how well your your hippocampus is working is mood and memory. Looking at the history over time in. So if you're a 45 year old, 50 year old woman, have you had depression?

You ask earlier, do I think that women have a disadvantage in the metabolic world? Yeah, our bodies are designed to bear children and in order for that child to to gestate, to be in that womb and not have, you know, a compromised birth, your hormones, your endocrine will will advance toward insulin resistance.

That's expected. You're supposed to do that. And during that time, it's going to do amazing things to these fat based hormones that are linked to your mood.

So your estrogen is going to do one thing, your progesterone is going to do another. And this is all expected during the time when you're pregnant and then after pregnancy.

The next two weeks, there is a tidal wave of decrease in those in those hormones. How well your brain copes with that is in part related to what's the health of your hippocampus.

Wow. That there's a great study out there that looks at after 12 weeks of being moderately depressed. And I would joke with some of my colleagues saying who the heck sees them at moderately depressed?

I mean, I say severely depressed. They don't tell me they don't go they don't. Go to their doctor's office when they're moderate. No. So looking at moderately depressed, 12 weeks and the size of the hippocampus atrophy went from whatever size they were to about 30 to 40% decreased.

And then some of them continued to stay there and over time got smaller and smaller and smaller and smaller and smaller. And the worst ones, the ones who had the the tiniest littlest, most pathetic looking hippocampi, were people with fibromyalgia, with chronic pain and depression.

And so you say, well, what links all of those things? Because fibromyalgia turns into a whole nother story of how do you diagnose that and how are you confident about it?

And well, has plenty of problems in its history of how it's come to be diagnosed and then, well, how do you treat that? So what is fibromyalgia? Fibromyalgia is a depressed state there.

Their brain isn't functioning and isn't as joyful as it isn't appropriately sad when it should be. So again, fluctuation of what is joy and what is sadness should be regulated in the brain and should match the life.

Okay. It doesn't mean you're never going to feel sad. It just means match the life number. That's in the hippocampus. Mm hmm. Yeah. Yes, go ahead. Number two.

Number two is that your depth of sleep is also very much linked to the health of your hippocampus. When that brain did not sink into stage four sleep, the deepest of sleep's, the repair process that should be happening inside that hippocampus was almost zero.

The shorter that slow wave, deep sleep. And again, an adult brain, a healthy adult brain only gets 12 minutes of that a night. It sinks. Yeah, sinks down for just a few, you know, two or 3 minutes.

And then it wakes up to make sure the heart is beating. And, you know, it's not there's no saber toothed tiger around and then it will take time. And anyway, you acquire about 12 minutes in a night where the brain really washes itself.

And and then there's the special cells inside the hippocampus that during that really deep sleep, they they're like stem cells so much like you can, you know, how you can cut off the liver and it grows back, right?

Cut off a cervix, it grows back. Okay. You can destroy a hippocampus. And as long as there's a few cells left, it can grow back. That was not what my textbook said when I went to medical school.

That is new information over the last 20 years. Your textbooks also probably said that all the cranial bones refuse together. I remember that was a big.

Debate decades ago. Details, details. Right. As you look, though, that that hippocampus and its impact on are they are they somebody with a smaller hippocampus?

Well, how how well has your sleep in? And people who sleep well and I don't mean they take Ambien to sleep I mean on their own, they're able to shut their brains down, sleep through the night, not waking up three or four times.

They wake up in the morning feeling rested and restored not once a year, but routinely 29 days out of 30. That's what they do. So they have a mood that they can they can keep it together.

It matches the outside of their life. They have sleep that's deep and reparative and when you look at the the other major predictor, which I think women have a significant disadvantage of in today's world, is that your hippocampus

is highly linked to malnourishment.

And so you think, well, we have all the food access in the world, how could we be malnourished? But I'll tell you, one of the key things to measuring malnourishment is to look at iron replacement in a brain or in a in a woman.

So in a woman's brain, where you start menarche much sooner than we've had over the last couple hundred years. So now you've got period starting at eight years old, nine years old.

And then they have periods every month. Right? We're losing it. We're losing iron every month, every month. And so there's a great little equation I had.

I had the teenagers do with saying, all right, I made boys and girls do this. How many periods? Okay, so how many periods in today's world? What a young girl have if she started her periods at ten, how many period, how many how old would she be when she has the same number of periods that were estimated in somebody 250 years ago?

Oh, my gosh. And so I reminded them they didn't really start menarche till about 12, 13. They were actually married rather young, 16 was not an uncommon age to be married.

So maybe periods till then. And then it was important to quickly start having babies. And so then they're pregnant, obviously not having periods. Then they nurse a baby full time for two years.

They have a on average two periods before the next time they're pregnant. Of the 15 kids they're going to have over those next 40 years, 30 years, whatever, that several die, several don't make it past the age of five.

And so we show them the number of periods. Take a guess what the girl is, what her age is in today's world. If she starts at ten when she maxes out for the total number of periods, she would have had 250 years ago.

Oh, my gosh. I'm going to say. 40. Yeah, 21. What? Yeah. By the age of 21, she's had as many periods in a lifetime that she would have had in a lifetime 250 years ago. Okay.

So so are we having less periods then? Is that the total or are we move? Are the like no. Where you get a lifetime of them at the age of 21. Yeah. Or are we losing that much more blood.

Like what, what's the. Yeah. Because of that you don't, it's a it's socially inappropriate to get pregnant at 16 now. Got it. So they're not. I got it. Oh okay.

So they're not because they were delaying pregnancy or not having at all. Right. We've been through our periods much quicker, which is affecting our iron balance because we're short every month.

And if we're low in iron now, we're affecting the hippocampus, which is going to affect our mood and memory. What are the other great places to see that what happens when anemia or even before they get anemic, just they get iron deficient, is that there is a part of the brain that is supposed to rapidly grow in those, but that 18, 19, 20 year old female brain and that's the same area of the brain that is responsible for advanced math, engineering and some of the more male dominated career paths in our society.

And so there's a couple of studies looking at is it because there's a smaller development of that area and can we link that to iron deficiency? And although the studies were small, I was very happy to read.

Yeah, look at that. There is a connection there. Fascinating. So so would it be would it behoove a woman, especially as she goes into her twenties and thirties, to get regular iron checks?

So knowing that that could actually impact her brain function. Right. Well, personally, if I have all sons, so this is theoretical in my world. But if I had if I had a teenage daughter, I would stop her from having a period.

Endocrine disruptors and hormone balance

I would make her body pretend it's pregnant. Fascinating. So she's not losing as much iron? Mm hmm. Yeah, it's. What? Her. Yeah, you can do that with your medications today, right?

Watching the compromise her brain has trying to keep up with iron. It's. It's it's not easy, especially when they they lose blood every month. The other things that are very difficult is that as soon as they get slightly low on iron, it does change the interconnectedness of how the brain is wired during those years.

So even if they want to have their period from 26 years on, like while your brain's in this hyper development, no, anemia isn't a good idea. Getting pregnant is really not a good idea either, right?

Yeah. And you can have a this sparks plenty of debate to say you put them on birth control. Well, everything sparks debate right now. But. Okay, so what do you think about one of the things I've been thinking about with the menstrual cycle is it is our form of detox.

You know, it's it's how we share and get rid of what no longer serves us every month. So if we stop it to to help even out the iron levels to improve improve brain health, what what are we what's the downside?

What there's got to be a consequence to that. Well, you go back to what evolutionarily was programed in women is that that detox happened much, much less routinely.

Yeah. Because there were pregnant all the time. You are right. The toxic load is less. Yeah, it toxic close less. So what? When I when I when people ask me what form of what form of birth control would I work on, I would say decrease the amount of chemical you put in the woman.

I think the the IUD that delivers progesterone to the inside of the lining of the womb is the least amount of toxic, the highest amount of delivery for the right place.

And the rest of the body gets to keep doing well. I mean, it's still can ovulated and still can do the things that would have done otherwise. So yeah. I would agree on that.

So okay, let's go then again to the 40 year old woman as her cycle is winding down and we've got this hippocampus that is really going to be this the root of how her brain functions between that and the prefrontal cortex for the rest of her life.

Right. What does she need to know about keeping her hippocampus in good health so that her she can not only keep her memory up, but she can keep her moods up.

She can you know, people still want to be around her. They're not all running away from her. Yeah. I think we've really localized here. Like what that part of the brain is that needs our attention as a woman is going through that hormonal loss.

Right? When you watch the amount of mood fluctuations of a teenager, the mirror effect can happen when you're removing those hormones of a woman's brain that's fully developed and, you know, been dependent upon the estrogen presence for, you know, as a young woman watching, I mean, women would come to me and want help to this.

And all I kept thinking is this is the most horrible thing to do to a woman. Oh, yeah, yeah. So you go through it. It is a little bit like, wow, what is that?

I mean, and I've tried to be one of the like take, take the season of life you're in with grace, right? I'm 51 right now. And, you know, I can live this journey, but I I'm happy to say I'm not in menopause yet.

I don't want to go there yet, because what happens is how much it changes the way your brain retains and how much it's very estrogen dependent and. And actually on that, I've actually looked recently at maps of the brain to really try to understand where the most amount of estrogen receptor sites are in the brain.

They're all over the brain. But the hippocampus, the amygdala, the prefrontal cortex, those are three of the biggest areas which are the powerhouses. Right.

Which are the powerhouses of our brains. So what part where does metabolic health come into that picture? Because if you go sliding into those menopausal years and you're in in a an insulin high state, you know what's going to happen to that part of the brain?

Well, I just would start by saying kudos for your presentation that you just said earlier in this, that if you're going to get it together as a woman, for heaven's sakes, do it before menopause.

Yes, that is my cry right now. I'm like, please, women of 20 and 30, listen to me. I see you as a 53 year old woman. What you're about to go into and you can really help yourself if you look at your lifestyle.

I mean, again, our design was never to live this long. Okay? I don't mean 53. I mean, like we are living into our eighties and nineties and that what's missing when you interview especially in an intimate level like what do you miss?

And it is the ability to be, well, 100% woman, which is filled with the checklist that I've had for 30 years now or however long I've been in, you know, using my adult brain.

It is that that compassion, that emotion that makes us. WOMAN Yes. And I am tenderly appreciating, again, this side of the transition into menopause, knowing that, well, if I wasn't supposed to use my brain for the last 30 years, what do you why would you do that to me?

No, don't do that to me. Right. But to watch how poorly women check out of it in their thirties and in their forties when they live with a chronically high insulin state, because that was how estrogen was ever going to get to your brain and be in that right spot in the first place.

And when that when the burden on a human body of highly processed foods day in and day out times where they they never take a pause from that. They constantly are putting in the the highest number of particle sizes that we've ever had, our highest number of particles, smallest particle sizes of food that we've ever had in our evolution.

Fasting, cortisol, thyroid, and metabolic flexibility

Yeah. And we do that at a price that says your insulin will be you're in some way too high over the course of even half a dozen years of eating that way.

Right. Right. Keeping that at a steady state. Meaning you spent high? It's been high. Yep. You've got that middle that won't go away. Yes, I know that you're exercising like a dog.

It's not coming off. It's because you've got a hormone that's not correctly. You've got to get the insulin down. You have to get the insulin down before anything else goes right.

And when they go ahead. Yeah. Do you think we. This is key because I think that too much too many health care practitioners, doctors get this wrong. We the discussion is all been around estrogen, progesterone and testosterone and we're trying to balance those.

But to your point, you cannot balance those if you don't balance insulin. So why don't we start with that part of the conversation instead of HRT? I mean, this is not bashing HRT or bioidentical, but I feel like it's this huge elephant in the room that we are not addressing.

I mean, if everybody came in like you, which is, oh, you've got that under control now, I can do something. I now let me take the advanced amount of education and studies that we have on estrogen and testosterone.

I had a patient come in when I first moved to Tampa and he said, I just started seeing this doctor who is giving me

testosterone shots because my testosterone is low and he is like £100 overweight.

And I'm like, it's not going to do much. And he was like, Oh, like you're like, your testosterone is better. I should come to you. I'm like, No, it has nothing to do with where you get your testosterone.

It's that the part of your body that made it £100 overweight is the part that will dictate where your testosterone ends up. So, yes, you're going to get the shot of testosterone and you're going to feel good for a few days or even feel better over the course of the next six months.

But then guess what your body does? It accommodates that and it will store it in if I take it and I look at a scan, where did your testosterone? It does not concentrate in your testes body.

It's in your fat cells and it's going to be there until you lower insulin. And that's how I and I think I've said this, I don't know if I've said it to you, actually, but one of the other fat based hormones and I put that in quotes because we call it a vitamin is vitamin D when people are super low on vitamin D and they're like, Doc, I can't get it up.

Doc, I can't get it up. Doc this my vitamin D is low. I'm taking all these supplements. What am I doing wrong? And I'm like, Well, first of all, it's a fat based hormone.

And it will be it is it is going to be under the super power of insulin. So if you have this chronically high insulin and so you can test your vitamin D on your own, I'm like, all right, I'm going to put you on a ketogenic diet.

You're going to do it my way. Like, Nope, no fake news. You really have to follow the rules. And we're going to check your vitamin D on week to week three and week four.

And you watch that vitamin just come up and you're like, But I'm not taking it. I'm like, I know you're emptying a few fat cells that are filled with these fat based hormones.

So and you come to me and say, Let me do I need to pick bioidentical, I need to pick horse urine. Do I need to pick beans? I'm like, it's it's the wrong conversation.

Whatever we choose to put in your system, when you have this much insulin, you're, you're you're picking up, which I mean, that's a boy statement. But whatever you do, live in a house full of boys.

So we'll give you that. So do you think that as women approach 40 when we know the perimenopausal years, I mean, it's really happening at 35 even now.

Do you think that the single most important measurement is hemoglobin an agency for how you're going to weather through menopause? Or is there more that you would look at?

It's such a big one. It's such a big that's really hard to at the top. But I. Know I. Know. You know, somebody asked me the other day when I would check somebody is cholesterol which is a very similar question to what you're asking, because cholesterol, when you start on a a high fat, low carbohydrate diet, it's going to change.

And so if you're measuring it during the time where everything's changing, then I just get to see a bunch of noise. And you're asking to be a magician to say, what's it doing? I don't know.

I need about ten more points of data before I can really make any sense out of this. And I think a very similar thing happens as you look at that. You know, the attrition of production of estrogen happens, you know, after we hit a peak, whatever.

You know, some of us 35 and they start hitting menopause in the early forties, but hopefully it doesn't do it that soon. Let's hope you make it into your forties before you start to produce less and less estrogen.

But if you're also saying the production of your estrogen is as high as your body can make it at the season you're

at, but so much of it is under the the dictatorship of insulin that if you stabilize what that's doing, if we get that blood sugar down, at least that you have three months in a row that your hemoglobin A1 C is, I mean, maybe they're not all as perfect students as you.

Maybe three is 5.8 or 5.9 or, you know, 5.4. But that's still much than the 7.8 and seven that I have for diabetics. Right? So they get three months in a row where they're in the five or six range now, at least know you're you're insulin stable.

Because if, if you come in to me and you have been on the ketogenic diet or you've been on a low carb diet for four weeks, and then happened to check some hormones, but it's in the flux of what's going to happen naturally when you decrease insulin.

It's just like asking me to check cholesterol within the first few weeks of being on a ketogenic diet. Like all I get to see is a noise. I need way more data points in order for you to tell me what's going on in there.

Right. But doctors don't do that, just like getting a continuous glucose monitor. You can have that argument. Is it worth it? It's a lot of money. I mean, you look at cash paying, it's 800 bucks a month for the good one.

Right. But what happens in one month of training for watching what you do when you eat at 9:00 at night, when you eat at 1030 at night, when you have that I had a sin.

That was I was out when I had my continuous glucose monitor and it was balsamic vinegar that I knew. I did. Well. It was very sweet. Was I to do with.

A little bit of sweet in it? Yeah. Yeah. Somebody sent this to me as a gift and I just thought, Oh, it's balsamic vinegar. It'll be all right. I just.

I knew I tasted it. Oh, I like this lady so much. Anyway. So would you. So again, if we're looking at what I've been trying to do with the female brain and I've as I've been out and I know you get this as well as like when you're out in the world, when you're looking at all the comments on YouTube, you're looking at the cries of so many women, it's everybody's trying to find like, what's that one thing that's going to help the female brain as it ages?

But what I'm gathering from what I'm hearing as you're going through this conversation is it's insulin. It's yeah, it's such a it's such a heavy hitter.

I mean, every cell is dictated by this hormone and then our other hormones are controlled by that hormone. Right? So it's such a super power inside the body that I want to focus on something less than insulin because they're easier, I can think could be put a patch for a cream or they all feel better.

Because they have. Hope. And I'm like, it's also until you get that insulin down, we aren't going to make it. We're not going to move the needle. And they spent a lot of money.

They spent a lot of time. Like if you're going to spend money and time on a place, start a support group on how do you eat less, how do you actually get through a 36 hour fast once a week?

How do you find a rhythm of that? If you if you're looking in your thirties and forties to say, how do I get to be Dr. Mindy by the time menopause hits?

And it it isn't going to happen with a little less carbohydrates in a day. It's going to have to be some some days where you really push your metabolism, you take those mitochondria and you give them a workout.

And that workout happens when no food enters in the mouth, which then lowers the insulin. And now they're asking your mitochondria to do something totally different, something it hasn't probably done in years, which is to be using a ketogenic fuel, a ketone based fuel.

Yeah. And that's step one. Yeah. It's so well said. And I and I want to highlight something that you said that I think you and I really unite on, which is there's two ways into this ketogenic system.

One is through changing the carbohydrate load, switching out your fats, and the other is through fasting. Yes. And you can do them all. But I have found that if we teach people how to fast first, then the changes of food become much more, become much easier.

We start to crave better foods. So actually the door in for me into the ketogenic diet is fasting and then we can come back, fill in with a better diet.

Have you found similar? Well, I remember when we had that podcast with Jason Fong's a vegan. Meghan Ramos Yeah, so I don't know if that's still the assistant, but she had now runs like the show of their fasting protocol and she reminded me when I heard his first approach that when, when diabetics would come in and they are like, You're going to lose a toe, we got to put you on dialysis.

And they would start them with like seven days of fasting. And then her hardcore, by the way, she and. Jason were. I mean, when people are like, Oh, who would want to do a three day water fest, go follow Jason and Megan, because they're putting some very sick people into very long fasting, getting incredible results, right?

Yeah.

Perimenopause, menopause, and hormone therapy

So one of the things that I so I don't use that approach, but it gives me, you know, the right the right answer here is the perspective that, oh, the human body is so adaptable.

If if you have somebody who's who is in your partnership, in your world of influence and is asking you to start out with a fast it's not going to kill you unless you're on insulin and then be careful, but you got to you got work to do.

But it's also that sixth grade moment where my dad sat down and said, no one's going to know what your grades were before sixth grade and the identity that people have that they can't go without food, that they're so addicted to food that how could possibly you do that?

And now it's a different it's a different way you look at yourself because you just got through that. You just did that. You did hard things and right.

Or one hard thing. Yeah. And I think knowing that sweeping them into a vortex of change begins with knocking on what what do you have in your mind of of what's going to happen and whatever you're envisioning is probably going to happen.

So if we can switch that, if we can get you to address that, this is really possible. We can do this together. I think that's the psychological approach to when when people end up in a pattern of life and no one, no one reminds them that this was a choice.

And so stepping in and saying, all right, start with a fast I don't care how you start. You know, one of them maybe is being an intern is too long where we do chronic disease management.

That's what I like. The tagline is, but we have really poor marketing people for internal medicine. First of all, nobody knows what it means to be taking care of the internal organs.

They just. Isn't that just the whole body in it? Intern is for code for we do. Everything right but. But that chronic disease management is really what we're supposed to do.

Like if I do my job right, you shouldn't notice the things I'm preventing that would be that would be perfection. Again, underappreciated in today's world.

Right. But really, you know, so one of the approaches I use is to, you know, especially front door, I teach them what a carbohydrate is like. You don't understand how you're sabotaging this.

Yes. Your plate of green vegetables sounds like a really good idea until you look at all the other stuff that came with it. Like that's a lot of carbohydrates, even even.

And it's better. So we're going to you're going to see improvements. But if you want to see the long term outcomes, you got to learn what carbohydrate is.

You know, what I've been doing on that one is I will actually say nature's carbs or manmade carbs. Oh, that's good. Because I feel like we have to separate when we say carbohydrate.

You can't put a piece of bread and and a salad in the same conversation, even though they both have a carbohydrate load. When you've got that fiber, it's going to have a different spike to your blood sugar.

So let's just separate those two out because it's really those manmade processed carbs that we want you to get rid of. And it's in those nature's carbs that we see some really good things for the microbiome, of course, not all the time, but in a proper especially if you're going to cycle it to a woman's menstrual cycle, we've got to lean in to nature's carbs when we need it for for gut health, when we need it for progesterone production, things like that.

Yeah. I mean, the the beauty of how well that body adapts, you know, I love Sean Baker's approach on this where he had, you know, really gone through the studies of how many how much fiber should be there and how one study proved this and one study proved that they like opposite ends of the spectrum.

And they're both saying that they're right. And, you know, the beautiful part of when we stop putting so much processed food into it, you can get pretty darn good outcomes with several of the approaches of how much fiber, how low a fiber, how how damaged is that, especially the immune system.

At the beginning of our story versus how far along are they in already reducing that inflammatory process by the changes they'd made before talking to us?

So I really find the power of when teaching these things the into the integration into what that does for your mind, what that does for your your self-talk, what it does for your gut biome, what it does for your menstruation.

They aren't isolated conversations. This is a human subject that totally has the flexibility to be able to give you a really healthy outcome if we get several of the hormones.

Correct. Yeah. And to me, the first one that has to be fixed is insulin. You've got to get that down in order for all the other ones to make even a slight.

I mean, that's that's why when when people say I tell them no fiber and I tell them this many grams and the next one says this, and you're like, Yeah, but all of them had a less stimulus of insulin.

That's why everybody had an improvement at that stage. Yes and no. Well said. Have you ever seen somebody go into the ketogenic diet and where you're actually making ketones?

So maybe they're at like a.6.7 and they feel horrible because to me, when I go into the when I go into that ketogenic state, I'm like buzzing. I want to stay there.

And yet I see a subset of females primarily who when they go into that state, they actually their energy tanks, their body actually goes into a worse place.

Have you ever seen that? And if so, I think it is. Again and again. It's why when you look at the the approach that I use, I start out with lowering their carbs to 20, but they can eat as much fat and as much as they want to for the first season.

And how long that season lasts has to do with their hormones. And if if you come into the ketogenic, you're saying, I'm going to do keto, I'm supposed to feel amazing and they just crashed.

I mean like tumble ass over apricot into the ketogenic diet and say I'm here, I'm doing everything right. I feel awful. I'm like, no kidding. Because what has been depleted in your system for the last however long you've been on a high carb diet, a high insulin state, is that you don't have any of those hormones like cortisol, like and like the other policies to kind of the part that makes us feel full when we eat.

You don't have even dopamine to to have a surge and relax. That makes us feel good and then back down to normal, then feel good, then back down to normal that when the fluctuation between hormones is so slight because well, that's taking the state of cortisol again, another fat build hormone.

And when they're under that high stress, that low sleep, that high insulin state of cortisol level, that should be this market is one because of their chronic high stress.

It has crept up and crept up to a level of of four. Well, when you were one, if you would peak at a five, you would feel the stress that is associated with a peak in cortisol.

And then it goes back down to the one. But because your high stress life is now living at this much far abundant level of hormone production, you're going to feel terrible as I try to lower this over the course of the next six weeks.

And when they come into the ketogenic diet and they especially if they don't eat fat enough, the fat is all tucked into their fat cells. Well, that's behind the curtain of insulin.

So one of the strategies for having them eat as much fat as possible, it's not forever. I try to tell them that at the beginning because this is the like I say, because they do you want to get them feeling good as quickly as possible.

And when they go into I'm I'm eating, oh, man, I'm eating for 23 hours a day. I'm not eating anything and then I'm just stuffing myself. I'm like, That's not going to work.

Your endocrine system has to be healed first. And the only way that you can turn that fat based hormone back on is when your body has access to fat. Every morsel you're eating gets suffocated with insulin and tucked into your fat cells.

So you don't get to get any out of your fat like Mindy does when she fasts or what I do when I fast, you only get the fat that is between the mouth and the part where the liver processes it into the next step.

Interesting. And if you skip that peel off. You're going to feel a need to add fat in. Then for that process. Yeah. And, and what what are your just so because this still permeates the world.

What do we think is saturated fat? Like, are we trying to stay away from it? Yeah, I would not. I would eat as much as you want. Yeah. Okay. Did everybody hear that?

This is this is the point. Okay. And what do you. Because, you know. Yes, MCT oil is taken off coconut oil. There are some saturated fats that are amazing.

So and so this conversation of saturated versus unsaturated added is not a helpful conversation when it comes to the ketogenic diet now. Especially when they're first starting on the ketogenic diet.

Just I mean, you you need you have so many I mean, just take estrogen. I mean, if estrogen is in the in the ditch and you are, let's say, premenopausal, this is this is why this is one of the motivators.

Let's say I can put on a hormone, but the amount of hormone I'm going to have to put you on in order to overcome what you're going to do, which is push it into your fat cells.

You're going to like me more now. It's all about like me, but you're going to like you more when you figure out that you stop producing so much of that insulin.

So we can use the estrogen that's present. And in order to resupply all of these fat based hormones, well, you need fat. Okay. So let's start with the ones that we've been eating for thousands of years and taste good.

Yeah. Okay, let's get them feeling well because as soon as that brain is in the process of using triglycerides, using strings of fat to fuel, you now have an advantage, which is a patient that's not so depressed, a patient that's not so wilted in the mind.

Yeah. And those are nature's fats, by the way, I was just thinking that some like it's we're back to things that came from nature not horrible. Any time man gets a hold it, we manipulate it.

Now we're in insulin resistance. So yeah, I sent my kids to the store the other day and said, I'll bring home some blue cheese. We were having chicken wings and I said, I don't want the one that's not refrigerated.

You got to go to the place where those refried they came home with one that wasn't refrigerated. And I'm like, I want you to look at what's the first thing on that ingredient list?

And it's sunflower oil, one of those so far. Maybe it is. Either way, it's a seed oil and oh, it just tasted awful. So horrible. Right where you say, no, throw it away.

Go back to the store and get the right damn thing. And so, you know, another another thought that I've had is that as a woman's brain is adapting to the loss of hormones, we actually need to look at other things, other neurochemicals that can support healthy brain function.

And a ketone. A ketone is a hell of of a fuel for the brain. So, yes, you know, the way I look at it is after 40, every woman I mean, before 40, every woman should be in ketosis, be working in the ketogenic diet.

But after 40, it really becomes imperative because we've got to get that brain, we've got to get the brain filled with something as it loses estrogen and progesterone then.

Yeah. You know, the other thing that you do a great job of teaching about is how powerful connecting to oxytocin is. Yes. Again, another endocrine should be not doing much until it needs to do its job and then it should peak that whenever you or most people teach about it, they think of the time when you nurse a baby again, a figure, euphoric place that if you've never experienced it, it's really hard to put into words what that feels like, what that. Is a great.

That's oh, this love is so strange. I don't have I didn't have a measuring stick for it. Yeah. And that and then you say oh there's a whole bunch of other ways you make oxytocin besides nursing your baby and you should practice those you should is loving yourself.

And you know, I also I think of that in today's world where I'm totally guilty of this. So it's going to come out a little bit hypocritical that yeah.

Pushing as hard as I've been pushing since you know, since I figured out I can show I can be just as good as anybody else. I can get into medical school, I can get into it.

Your dad. Taught. Let's just blame it on your dad we got to play with. Oh, yeah, let's go out. And if you want to if you want to look at over dominance of work ethic.

Yeah, I definitely pushed that on me. But the purity of that was to find what is it that I get joy out of? What is it that if you took away all of the of the, you know, the social status of being a doctor or, you know, a teacher, a professor, say, no, no, no.

I really love it when that moment I'm trying to get something complicated across to somebody else who doesn't

have the years of education and it clicks and they walk out the door saying, I can do that.

I'm better. I understand that. I mean, so that's a personal one for me where it's weird, like most people are not going to get joy out of that. But but it's a fun time.

Yeah. To find that place in your life, you say, all right, if I'm only on this earth for another few years and I, you know, God's mission says, What are you supposed to be doing with this life?

May I please have some oxytocin as I do it? May I please know what it is? I love to. Do and then get to do it right? Yes. I actually think you bring up a really good point, that one thing that we don't give enough credit to is the joy of service to others, the joy of helping others.

And it can be something as simple as a smile to somebody that we talk a lot about gratitude and how important is it to be a kind person. But hormonally, what's happening?

You are surging oxytocin, which is lowering cortisol. And when cortisol goes down now you become insulin sensitive. Now you can you can actually balance your sex hormones.

Yeah, we don't give it enough credit. You're absolutely. Right. Mm hmm. Yeah. Why not? When people come in and say antidepressants, antidepressant, I need I have this depression and, like, my pill will offer you some reuptake inhibition, and it's going to take the hormones that are circulating in your brain, and they're going to keep them in that synapse a little longer.

But the real joy is, is to find what happiness was built from, which is go out and serve someone. I mean, be the person who walks across the street and says, you need some help with that.

It's a complete stranger. You're going to get nothing for it. They'll probably yell at you. They might even spit on you. But the act of doing what what is a service to another person is where that's how you measure happiness is.

How many times did you do that today? And when you're seeking that, that return of of happiness, which if you've been postpartum, if you've had times where life, the brain injuries, swollen brains, whatever reason that didn't work great.

You'll do nearly everything to say, just get me back to that place where I feel better. And so I don't care if you call it Prozac. I want I want I want you to help me.

And there isn't a place where I can go and say, here, I'm going to have you make your brain make some oxytocin. It doesn't it doesn't work like that. It is through these choices, these acts of service that again, they don't fit into the the did I did I get the all the points the insurance company said I was going to get for being a pay for performance.

Did I get their blood pressure, check their body mass, and did I teach them that acts of service are going to be way more powerful than my Prozac now?

So well said. You know, I was at a book signing for my book a couple of weeks ago, and it was at the Barnes Noble in L. A. in West Hollywood. And there was a group of women there.

And one of the women came up to me and told me this long story about how her doctor, she was diagnosed with breast cancer. Her doctor told her there was nothing she could do with lifestyle.

She should just go through chemo and radiation. She stumbled upon my YouTube, discovered how to fast according to her hormones, and after a series of like six months to a year, the cancer was completely gone.

And and her doctor was like, I don't know what you did. I didn't understand. You know, he was completely complete, you know, he he did not he didn't get it.

He was like, what the heck happened? But I tell you all this to say that, Joy, for me and that moment that woman didn't didn't exchange money with me, she didn't she she just read my book and watched a free she watched a free platform on YouTube because I you and I really share this common heart connection of like, we got to shout louder, we got to get this to more people.

And when, when a person you've never met changes their life with your information. Is truly, yeah, that. Is life, that is joy, that is oxytocin. You can't give me a better drug than.

I mean, that's totally real. I mean good job so calls and congratulations on the success I've been watching your your numbers they're fantastic so I'm so glad that you you can that's beautiful.

Well, you know what I love is women are taking it and they're doing book studies and they're really gathering together to get more oxytocin. So it's been incredible.

Let me let me finish up on this last question. Okay. So we have a metabolic problem. What how are we going to get out of it? Hmm. So I have a dream. I have a dream that's doing medicine different than I've done it for the first 25 years.

And that is that you can't I mean, I can take one person at a time through this story of let me show you your numbers. Let me teach you about a ketone. Let me show you how to break your finger.

Let me show you this. Let me show you all the steps of that. And they do not get it when I do it one on one. So intensity and I remember learning this, but addiction medicine was never going to be successful one on one.

They had to see other people in the journey with them that suffered with them, that abused worse than them, abused less than them, abuse younger than them older.

Had to have the comparison of where am I in this in this path? And then I just need to get out of the way. I needed to collect them, keep them out of the ditch with whatever my role would be in that.

And then watch what happens when a group of people determined to say, I'm not going to be a slave to alcohol anymore, I'm not going to be a slave to fill in the drug.

And as I look at this transition where I get a choice point to say, how how do I how do I fit into helping people with addiction? Because, again, internists see them one at a time.

We see them for long amounts of time. We talk about a lot problems. But when I look at the the success of of transforming a group of people, I've done the class twice now.

I have the data from it. And I'm super excited to say this is where I'm going to put my stakes is around. I put my dream. So you don't get better when you do this one on one.

You get better when you do this at the community. Yes. If your community is three weeks with us twice a year, that that's what we're going to do it. We hope that every we have, we give every tool that you can spark out of our little classroom.

And you can go to your own community with your sister and your brother and your coach's wife and the people in your world that need somebody to say metabolic health.

It is kind of nerdy. It's it's a lot of complicated places that you can get stuck in. There aren't always answers to, but to deliver it is pretty darn easy.

You do not need to be a doctor or see a doctor to get it done. That's right. But having that group of people, much like the Christmas cards that I would get from people who had been through several addiction programs and finally, for whatever reason, are stuck.

And years later they write me. I'm six years from using alcohol because of what you taught me. I'm you know, I'm 12 years from using cocaine and 12 years from pornography and 15 years from and I don't I can hardly tell you their names except for the cards they send him.

And I say that isn't because of what I did inside an exam room. That's because of what happened inside a group of people where you you work on a behavior change that I'm sad that we didn't know this as well as we should have.

I'm sad we've screwed it up for the last 50 years, but that's no longer the excuse. We have plenty of data. We have plenty of success. We have plenty of evidence that what what really needs to happen inside a change of health is that your mitochondria need to be healthier.

That means you cannot feed them processed food day in, day out from the age of birth. And I think you should do it in a group. Yeah. You know, that's a paradigm buster.

I think you're on to something there because I've seen the same thing where when I gather a small group together, we actually can make we can go faster and farther because you have the support.

You see people behave better. They don't they don't hold on to their limiting beliefs as my right. So you you. I'm like, you go, girl, because. Let's be great.

Let's break that paradigm apart. And there's so much in our medical world of like, we got to keep everybody's medical information in a silo. We've got to be in a room, in a treatment room that's enclosed and everything we've set up in the health care system has been to do it alone.

Alone. You just nailed it on the head. Like, let's start doing it in community. And now let's bring a tool like the ketogenic diet and fasting. And now we have a door in to changing this.

So well, that's that's where I think my steak is going to be for a while. So you guys, this is my plan. I love it. Well, I just thank you so much. I literally every conversation with you, I walk away and I'm just I feel so filled up.

I love your heart as much as I love your brain. And so I'm going to add on to what your dad said and just say your heart carries you so far and I wish we I wish we were neighbors.

I wish we lived in the same town together because we. Would just had to. Sit in the backyard and geek out. On this kind of stuff. So. Well, I'd come to L. A. for your book signing.

So I should I wish I had know about that, but I know. Well, I'm coming a bunch to Florida this year, so I'll let you know. I'll let. You know. I'll tell travel and let you. Yes, I'll be great.

Thank you. So thank you again for your leadership. And what you've done in this community, too, is truly just you know, it's hard to walk away from the traditions that our mentors told us.

This is how you do your world, my world. And as I have had to have a little remorse over, I'm just not going to do it that way. I don't have regret. But it was saying goodbye to the safety zone of how others have done it.

And I just want to say other stories like yours where you say, now, I'm not the only one out there doing it differently. The success can work. And I appreciate your leadership for that.

Oh, thank you. I just adore you. And I'm going to tell everybody, go to your YouTube channel, because you and I have this like fun little YouTube connection as well.

So you can go check out Dr. Boz your YouTube anywhere else. I mean, you have a great website, too. YouTube's a great that's my favorite place. I you can get drowned in too many places.

So I focus a lot on YouTube and I sprinkle a few other places. And that you're amazing. Thank you so much.

Appreciate you. You bet. Thanks, Dr. Mindy.