Menopause and the Metabolic Shift

Welcome to day four of the Future of Menopause Summit. I'm Laura Frontiero, functional medicine expert and nurse practitioner and your co-host for this summit.

Today we're turning our attention to some of the everyday factors that can influence how menopause feels from metabolism, thyroid health and dryness to environmental exposures, cellular energy and strength.

It's a chance to connect the dots and see how these pieces may work together. Let's get into today's conversations. Today's conversation is for every woman who has looked at her body during perimenopause or menopause and thought, why does nothing work anymore?

Because so many women feel like somewhere in midlife, the rules suddenly shifted. The same diet that worked in their 30s stopped working the same workouts, stopped producing results.

The weight just started accumulating around your belly. Blood sugar gets harder and harder to control. Energy drops your muscles can't build them like you used to, and recovery slows down and many women begin feeling like their metabolism is somehow just off the rails.

So what if your body isn't malfunctioning at all, though? What if menopause is creating this crazy metabolic shift that most women were never properly taught to understand?

Well, my guest today is one of my most favorite humans on earth, Doctor Betty Murray, a pioneer in women's health, functional medicine, and menopause research.

She spent decades helping women understand the deeper metabolic changes happening during this transition. And she's the founder of the Minerva Project.

It's a digital health and telemedicine platform that is really revolutionizing menopause care for across the United States. So welcome to the conversation, Betty.

Oh, thank. You for having me, Laura. You're one of my favorite people. I know. It's likewise, we're going to have a good conversation here. So what makes this conversation so important today is that menopause affects far more than hormones alone, right?

It impacts mitochondria, energy production, insulin sensitivity, inflammation, muscle metabolism, body composition, brain health, and long term disease risk, which I know you have a soapbox about that.

And so many of these symptoms begin influencing each other all at the same time. So today we're going to talk about why metabolism changes so dramatically during menopause, why women can do everything they're told to do and still struggle with insulin resistance and weight gain.

And what's really happening with all that belly fat inflammation and how protein, muscle and blood sugar regulation change in midlife, and most importantly, how women can support these shifts without becoming restrictive and overwhelmed and totally obsessive about it.

So I think this conversation is going to help so many women finally understand that what they're experiencing is real, it's physiological, and it's something they can absolutely learn to work with instead of fighting against.

Amen. Right. Amen. Okay, so let's do it. No. Here we go. Okay. You have my full permission to full rant if you need to. Okay. You just let it out on. People are going to love this talk.

So how does a woman's metabolism begin to change as she moves from perimenopause to menopause? And are there distinct metabolic stages or shifts happening throughout that journey that women should understand?

All right. So what I'm going to do is I'm going to start from the outside in okay. So we're going to start in outside in meaning talking about the human body.

So the first thing we have to understand is that estrogen especially estrogen but estrogen testosterone progesterone has receptors all over the body. They are not exclusively fertility hormones affecting the ovaries.

Right. Just happens to be where they're produced. That's so the reality is is, is any changes to your hormonal mechanism affect every single part of the body?

So, Harry, menopause, menopause. And even, you know, for the women that might be going through fertility journey, having babies, not having babies, getting on birth control, all of those things that alter your hormonal patterns and even ourselves each, each and every month has an impact on every single cell in your body, right?

So every single cell in your body has a receptor for estrogen except for two a red blood cell. So your red blood cells circulating around do not have receptors for F and one single type of brain cell.

All the other brain cells has receptors. Right. So you can imagine if my estrogen levels are balanced and ideal, everything's humming along. What happens when that bottoms out to zero? Right.

Every single cell has to answer. So let's start with the big parts of the body. What happens? So when we start to lose estrogen going through perimenopause and menopause.

And I'll jump back to testosterone and progesterone.

How Estrogen Loss Affects the Whole Body

But is a primary player when we're really looking at metabolism is we start to see changes in skin collagen production. Right. So gets lax gets gets flabby.

We lose collagen production which helps kind of hold everything structural. The joints, the muscles, the ligaments, the tendons, the Bursa, which is the sock around your joints loses lubrication.

Things get dried up. Less collagen production. So they don't repair like they used to. Rose and shoulder menopausal women. Right? Tendinitis. Right. Tendinitis in your hips.

How many women go? I can't lay on my side anymore. Right. Tendinitis. Especially in the hip joints. So so that then you get to your muscles, right. Your other big parts of your body, your muscles are estrogen sensitive along with being testosterone sensitive.

And even progesterone has an impact. But but particularly when we look at the muscles, the muscles is your are your greatest form of glucose distribution and utilization, right?

So your blood sugar and your body fat, it your big muscles, the stuff that moves you, your legs, your butt, your hips, its. Glutes. Your glutes. Work on those glutes.

They jump on the trunk. You know, the junk in the trunk, right? All of those muscles are the biggest user of your fuel, right? So this is the stuff that you eat and into sugar or into fat.

And then we use it. The brain is the second one. Right. Well they have receptors for estrogen. So we start losing receptors. The muscle cells themselves aren't able to use glucose efficiently.

They are able to use fat efficiently. Right. Our fat cells our fat cells become more inflamed. So our fat cells

everybody thinks of fat is like this storage depot, right?

It just melts up. But the reality is, is our biggest endocrine organ producing hormones and other things is our fat. And our fat is the biggest driver of inflammation.

So when you hear things like cytokines and inflammatory cascade, or you might even hear things like interleukin six and that all of those, the majority of those things are all being made by your fat cells.

When our estrogen levels decline, the fat cells become pissed off and they can pump out angry, angry messengers. And all that does is raise our inflammation and also makes us insulin resistant at the fat cells.

Right. And so as we move, start moving inside the body, the nerves that go all over your body, that nerve and tell like your fat cells, like the jiggly bits on the outside of your butt, hips and thighs and abdomen.

The jiggly bits. We all have them. We all have them. We hate them. But you know what? The jiggly bits don't cause this risk for death and dying. The abdominal fat does, right?

So but we have nerves that go into those fat cells and they sort of, you know, vibrate and, and pump out a bunch of hormones and, and neurotransmitters like epinephrine.

And those mechanisms come to a stop. Right. So the nerves that think of it, this is, this is a visual. It's not exactly right, but it's close enough. Liquefy the fat so it can get pumped out into the bloodstream so epinephrine can pick it up and take it to your muscle tissues.

That no longer happens. It becomes first on last off. Right. Because all of those mechanisms just in the big body parts are sensitive, particularly to estrogen, testosterone, ultimately to but very much sensitive to estrogen.

You hit perimenopause and you're doing this and estrogen starts declining. All of a sudden, the diet that you have, the exercise that used to work or saying, okay, I can go on vacation, pound it for two weeks and do whatever I want, come back 8 pounds heavier, and then I just eat really well or diet for 2 to 3 hours off no longer works.

And even if you're being really diligent and doing all the things that used to work don't work, right. So that's the big parts. Now let's start moving inside. Right.

So we've already identified or fat is insulin resistant and it's pumping out all these inflammatory cytokines. Those messengers then make all of the cells everywhere else insulin resistant and inflamed.

And they no longer listen to their messaging. Right. And now we gain weight. Right. But that weight gain becomes visceral, right. So we get weight gain in the abdomen underneath the muscle.

That's dangerous. That's why all of a sudden your waist expands. You're like, why is my waist getting bigger? I don't understand because it's actually fat going underneath the muscle.

Right. And that visceral fat is a well-known phenomenon, exclusive and integrated to menopause, that we already know. We have clinical trials, right? We have studies looking at women eating less, exercising more, and not seeing a damn bit of change.

So when your trainer says that, you can just go get the receipts from online and show them that what works for their 20 year old people don't work for you, right?

Doesn't mean it doesn't work. We just need a new we need a new treatment right now. All your cells in your body, particularly muscle cells, brain, everything in your body, for the most part, except for a few types of cells, have mitochondria, right.

And your mitochondria is your powerhouse. But it does a bunch of other things. But your mitochondria are estrogen

sensitive, right? So all the way down to the signaling that happens inside the powerhouse itself, but along the membranes and everywhere else, estrogen helps the transport of glucose both directly and passively into the powerhouse mitochondria.

Because we have two ways to move it in, we can move it in kind of passively, and it sort of uses think of it as like losing its way through the doorway.

Yeah. And then you and then you can do jet fuel. Right. And you can pump it into the doorway very quickly because you need it. Right. Those are both estrogen sensitive. Right.

Fat cells dump out the fat again. That's running slower. But we have a little bit that it can get to. The it can get to the cell wall but can't get through right.

And so fat becomes less capable of being used as fuel. So here's the other thing that happens that nobody really talks about our bodies. So if I can't burn sugar very well and I'm insulin resistant, I'm going to make a lot less energy, right?

If I can't burn fat when I'm not eating, like at night while I'm sleeping. Not my game weight, right? I should be burning fat, right? Right. But I'm not right.

So when you go to bed, you have a couple hours worth of glycogen that's hanging out in your muscle tissues, hanging out in your liver glucose. People tell people what glycogen is.

So glycogen is your storage for your glucose right. So that's how you store it in your muscle tissues. So that's kind of like a data bank. We don't have a lot of that.

We have a lot of fat. Right. We have even even somebody who's pretty lean has a fair amount of body fat that we can burn over time. Right. The daylight and glucose stores are fairly short.

So overnight, if we're sleeping well, eventually our blood sugar levels are going to come down. We're going to use up what we've got available. And then what should happen is we should shift kind of like it changing from a hybrid car.

I shifted from gas. I'm going to shift electric, okay. And at that moment, we should be taking fat and moving into the cells to burn. But that's not what happens, right?

Because glucose isn't getting burned very well and fat isn't getting burned. So what we also see is the protein structure, whether it's the protein that you ate, the special amino acids that you might be taking, or the protein that makes up your muscle tissue and organs and other things your body goes in, strips a little bit of that off, sends it to the liver, goes through a process called gluconeogenesis.

This is what keeps us alive. If we can't eat for a couple of days and it makes glucose out of non glucose or non carbohydrate sources, and its favorite source is proteins.

Amino acids. And the vast majority of your amino acids are glucose meaning that your body can shift it and make glucose like that. So it's in your muscle. Yes.

Yeah it's in your muscle. So let's say you have 5 pounds of muscle, but you've been fasting and you can't sleep very well. You're insulin resistant not being able to burn fat.

How long does it take to strip some of that muscle away and take it down to 4 pounds of muscle, because the body is using that muscle tissue as fuel at night to sleep, to keep your blood sugar stable so you can stay asleep, right, and recover and keep running the engine.

So gluconeogenesis is our bodies way to make sure that we can continue to survive with no fuel. Right. And our

body shifts back and forth. So here's the crazy thing that no one ever talked about.

I'm talking about this for like a decade. This is normal. Gluconeogenesis is completely normal. Our body needs to be able to do it. But as we get older and we become insulin resistant and all those other things, our body preferentially does that all the time.

So the other thing is, depending on how you eat your protein, the vast majority of your protein that you're taking in, that you're thinking you're going to build muscle may not be doing that at all.

I'll give you really good example. There was a really great study that came out. I think it was either at the end of 2024 or 2025, and they were looking at muscle protein synthesis.

So that's the ability for the body to build muscle based off of dietary intake. Right. Proteins are the primary fuel to do that. You must have proteins to do that or you can't do it.

Young people are really efficient. So if you give them ten grams of protein, 15 here, five here or 20 here, the body will go cool. I'm going to take most of that muscle out of it.

I'll use a little bit to make glucose. Well they literally you know, they were, you know, controlled trials in older individuals. What they found is if you did 10 to 20 here, 20 there, ten here, 15 here, the vast majority of it went to gluconeogenesis.

So that means the two eggs that you had at breakfast, the cops glucose instead of proteins to be used for muscle, the 5 or 15 gram that you had in a protein bar, you know, for lunch instead of having lunch or whatever it is you're doing, doesn't get made into protein, right?

And then made into muscle like that protein. I should say that correctly. That protein doesn't get used to synthesize muscle. And that is amplified in a woman who has lost the sensitivity to insulin and also estrogen, because estrogen plays a really significant role in that.

Testosterone can help because obviously it helps with muscle building. But estrogen is a huge player for women. So if you take all of that and you go, okay, I'm a woman, my powerhouse can't use the fuel.

Why Weight Gain and Insulin Resistance Increase

Whether it's electric or Gaspar efficiently, my muscles aren't using it very well because the powerhouses inside them aren't using it very well. The things that turn on fat burning and all the fat cells aren't really sending the messages.

And then at the end of the day, when I do eat, I may be eating in such a way that I'm not using the protein to make muscle. I'm actually using it to make sugar.

And what's crazy? And the other thing that no one ever talks about is people that have been overweight for a long time. Right. So I've spent probably from about 40, from about 39 to about 48 fighting with my perimenopausal body.

This is the reason why this is so personal to me, because I had been a bodybuilder, right? And all of a sudden I was like packed on the pounds like nobody's.

I am a nutrition professional. I have way too many degrees in that arena. And I was like, if I can't figure this out, no one can. And to be honest, I wouldn't even talk about weight loss because I was like, well, obviously during that I was like, I can't, I can't figure out what's going on.

I don't know what's going on with me, and nobody else could figure it out. This is what. I did. Oh, Betty, you should just stop eating so much, though.

I heard that. Eat like a bird. You should recognize. You should. You should lift weights and just eat less. Betty. Yeah. I heard all. Of that. You obviously have a food problem.

You're eating more than you're out. A lot of that. You're not telling the truth, Betty. You're. You're telling me this is what you're eating, but there's just no possible way, because it's simple math.

Betty, you're eating too many calories. I'm sorry I'm being, like, so sarcastic right now, but. No, it's 100% because people say I had other professionals in our arena talk to me like that.

And I was like, I could run circles around your chemistry. Hold on a minute. And because it's it's not thermodynamics, your body's control of how you burn fuel, build things and create things are managed by hormones.

So think of it this way. When you look at like a hurricane going through like Katrina, in order for them to start helping the people in, in New Orleans and the area around there, they had to restore communication because otherwise none of their none of the femur or anybody could help them out.

Hormones or communication. And when you lose them, nothing works anymore. And so, you know, so if you're sitting here and you're like, that sounds like me, it is. Right.

But here's I want to say the thing about the amino acid thing, because this gets missed all the time, because people are hearing from very popular authors and people that are very well meaning, I just need to eat protein, right?

Because I hear it all the time. I had a woman tell me today, I, I got on my protein and I'm like, oh. And and so my next response is and what she's like, well, I'm getting my protein.

And I'm like, so okay, you're pounding chicken and eating cottage cheese or whatever it is you're doing, but you don't have any fiber, you don't have any vegetables, you don't have all these other things.

We need those two. Right. Well, well-meaning right. Is this like, I got to eat protein? Like, as a job? It feels like that's something. It is. It is a job because we aren't good at building protein into muscles anymore.

Right. But the other thing is, is if you've been overweight, like I was running into this because I was like, okay, I'm eating hardly any cards. I'm not allowed to look at anything that looks like it might have any carbohydrate in it.

I'm eating protein, I'm eating lots of vegetables, but, you know, vegetables that basically have a zero sum game like leafy things. And I can't lose weight and I'm lifting and I'm doing all that.

I was like, okay, there's got to be something else here other than hormones and other stuff. Well, if you've been overweight for a while, you got to remember the body can convert. Remember I was talking.

Oh, I'm going to go use protein as the fuel to make sugar. Well, if you start looking at the data and look at what we call abnormal amino acid metabolism in obese and overweight individuals, right.

The thin person or even if you've been overweight for a little bit, but the longer you've been overweight and the more you've been overweight, the more this goes away.

The person that has been overweight for a long period of time, their body shifts and that gluconeogenesis shifts into high gear. So it goes, I'm not even going to go to electric car anymore.

Not even going to drop. I'm not going to burn fat anymore because I already know how to do this. And it's easy. Yep. Right. So the person that might be like, hey, I'm doing the 100 to 150g of protein, but I'm gaining weight.

This might be you. Right. I know there has to be a solution to this. Is there is it time to talk about solution. Are we to unpack that. Yeah. So there is and a lot of it I went through it myself.

I was able to get the 35 pounds off that I had gained and I held. Already 5 pounds. Betty, you are a little shorty. I can't imagine you 35 pounds heavier.

I had to, I had to buy all new clothes. And the crazy thing was, is, is I couldn't get it to move. Doing everything. I don't care if it was Marc Hyman's book, I don't care if it was whoever it was, any functional medicine wizard, whatever I was like, I have done the wizardry, I know him, I can call him.

And it didn't work and I was mad. This is literally why I went back for a PhD. So I dropped two to, you know, a quarter of $1 million. So you don't have to.

I love it. You're one of my favorite people to bring into my community and talk. So. All right. So let's hear it. You. So there you are, a little tiny five foot Betty.

I mean, how tall are you? Betty? You're so. Your girl on five. Three. I'm height challenge, but not bad. Well, you're still weight. You're like much weight.

All way taller than you broke. Yeah, especially next to my husband, who's six four. So it's just monstrously funny. Yeah. So here's a little five foot three Betty with 35 extra pounds on trying every every influencer practitioner, every influencer doctor's thing, go back to school, get a PhD in this stuff, figure it out.

And so how do you get how do you solve it. So I. Saw so I don't want people to go God she just jammed us. I here's the thing is, most everything that we find, whether it's research or whatever, is kind of a bell curve, right?

So it works for this people. But there's always outliers, right? You're right. Outlier I'm an outlier. So if you're doing what's famously popular or what so-and-so did and it's not working for you, you might be on one side of that bell curve.

Right? And it's okay just means you're an outlier. And so I don't want to trash some lots of people get really well doing those things. So here's here's what I found.

So so now I understand all those mechanisms. Like I didn't know there was mitochondrial mechanisms at estrogen. All of that research is all in cognitive research not in metabolic research.

You have to start digging in other areas and start synthesizing stuff. So once I understood that, I'm like, okay, got it. Right. So part of part of what I did is very much, you know, changed my exercise.

So some people are going to hate this. I was a weightlifting like crazy person, which is also the reason why I just had a hip replacement. But that's another story.

I love hate lifting. I love lifting heavy. If I could do that six days a week, that's what I would do because it makes me feel super strong. I kind of tore up my back in my hip.

But anyway, I would do that. And that used to work for me really well. But I wasn't sleeping right. So if you are not sleeping, this is your wake up call.

None of this will work if you can't sleep. I had to dial in sleep I that I did that like a job, right? That good job. That went. Someone blanketed. My protein intake right there.

If I were to put the two up against each other, the sleep is by far more important than your protein. Listen in, everybody lean forward and listen in. Yeah.

So dialing your sleep. I'm not going to. You probably heard a lot about sleep and stuff. So I'm not going to go through all those things. But you got to sleep.

Well I mean give them throw like your top three things out there because. Yeah. Yeah. So remember fat burning

happens at night for everybody. We don't burn fat during the day because you're eating.

So you always have a little bit of fuel. So that's got to happen. So the big thing that I find with sleep obviously if you are 40 and app hormones. Right.

Because if you can't sleep because you're hot five night sweating no progesterone you can't get to sleep. You need hormones. If there's any message you can get here metabolically we need hormones.

I mean, we could we could go on a whole like you guys. Betty is passionate about this. She was fighting for women to have hormones while it was black box warning and fighting to help people feel safe about taking hormones.

Yeah, we know that there's a sex hormone, endocrine, metabolic insulin. There's there's a connection there that's always there. And when we lose our sex hormones, all of those other hormones are never going to operate the same way without them.

Now, that doesn't mean every single woman absolutely has to have hormones. But I think every woman, I don't care if you're 95, deserves to look at it for you, especially if you're symptomatic or you've got issues.

Well, we went through this with my own mom. I want to share about this. So Betty has worked with my mom, and so I did every kind of functional medicine, natural thing I could think of to help her sleep.

I mean, we did all the sleep supplements and, you know, calming and and amino special amino acids and like everything and fine. And my mom was of the age where hormones were demonized and women were told not to take hormones after menopause.

So my mom had never taken hormones. And here she was, I think he started working with my mom when she was about 70, maybe. And when you gave her progesterone, it was the very first time that she'd slept in decades.

That was the thing. I tried everything and I could not get her to sleep. Could not help. And then estrogen getting the estrogen to the right amount was like, oh, you know.

It was. Like, oh my God. Yeah. So this works. I mean, I have seen Betty in action with helping my own mother get there when I tried everything. And I turned to Betty and said, I can't like this.

We need hormones. Yeah. And, you know, and it's. And that's a whole nother conversation. But when we restore hormones in this time period, we're restoring them to physiology.

We're not trying to make you twine anymore. We don't we don't need to have a period. But we don't need to have that. No, but we need to protect our bones, our brains and our percent.

Our body. Yes. Yes, 100%. So when we look at the sleep. So having the hormones help your thermostat control helps keep this body asleep and put your sleep.

You know, basically progesterone helps kind of take you to sleep. And estrogen can also help keep you asleep and keep the clashes from happening. Right. And it also helps cognitively.

So when you're sleeping is when you burn fat. The other thing is is temperature controlling the room right. Temperature controlling the room, getting rid of light devices.

No toys like crap out of the room. You know because because any of that stimulates your body, keeps you from getting melatonin. Yeah. Super dark cold.

Sleep, Hormones, and Recovery

You know, and for a lot of people, it might even be spouse out of the bed if they smell like a freight train. Just being

honest. Because if you've got somebody laying next to you, because that happens a lot, where you can't get to sleep or stay asleep because it's it's disruptive.

So so sleep dial that in now exercise. So if I am eating protein like it's a job and I'm not getting anywhere, it's highly probable we don't have a good way to test.

Or are you making sugar out of your protein intake? We don't have a good way we can check for sham free fatty acids and some other things, but it's the timing and all of that's very difficult.

So we have to just extrapolate. This is what's going on. So what I tell people is number one, our food protein is a goal, but fiber is equally as high.

And I want that fiber at 30 to 35g a day. That's like supplementing level because most people don't eat enough. Like then you're eating fiber like it's a job.

Yeah, yeah, yeah. And you work your way up, you don't go there. Here's the thing. The one thing that made the difference in the visceral fat of women in menopause and perimenopause was fiber and fiber alone.

We have studies, clinical studies showing that fiber intake. Plug or why. Whole bunch of stuff Halsey sleeps keeps glucose from being mobilized from the gut.

It also changes your microbiome and makes them make a bunch of things. Fiber is really important, right? So when I look at food proteins important but fibers equally as important along with hydration right.

Now I know I don't I'm like sitting here going, Laura, you don't eat enough fiber. You for sure. I have to supplement. A lot of times I have a hard time getting it in.

So I just take a little bit of extra, you know? But here's the thing is, you cannot take 35g of fiber and not eat it and get the same outcome. We also have those studies.

The data shows that you can you have to have it from fruits and vegetables and nuts and seeds, whole whole grains, legumes they all have it. But we need a combination from food based.

And then you can supplement behind it with things like psyllium or, you know, your your inner fuel. There's all kinds of different ones. Your paleo fibers, all of those can help.

But you can't just go forget it. I'm just going down a bunch of bills up. Now, here's the thing. So here's what I found to be true. So exercise right.

So we're about our bodies not efficient. We're not using the right fuel at the right time. Weight training is anabolic and it tells your body to build muscle.

Make it bigger right. Make the muscle bigger which is important. Right. And make fast twitch muscle which makes you easier to like navigate or move quickly.

Right. We need those because we lose those as we get older. However, zone two training where you're working out for a longer period of time, where the heart rate is up, but you can still sort of talk, right.

So it's very those people. So in order examples of those types of exercises, most. Of the time what I have found is you probably need to be on a bike elliptical trainer because walking you can't walk fast enough, right?

Because you'll trip over yarn two feet, because it's got to be kind of difficult to talk. And most of the time people run at a heart rate that's too high.

Yeah. It's in between most of the people in, like, if you're in my age group and the 50 to 55 ish, usually that zone to

is somewhere between 120 and 134 heart rate.

Right? Okay. For how long? So here's here's the clincher. The reason why we do it is it causes mitochondrial biogenesis. So it tells your body to make a ton of buying a right or powerhouses more mitochondria.

I mean can I just cold or something. Do I really. Clock hunch doesn't do that for women at all. I'm choking. I'm totally focused. I mean, I mean, come on, can I do a fast can I do do I really have to get out?

The little sun is like a, like a icing on the cake, but you. Really have to go zone to. Yeah don't you is really, really important. And here's the reason why is if you're if your heart rate's above that, you're not burning fat ever.

You're burning sugar because your heart rate is at a point where you're not you don't have enough oxygen. You're in an oxygen debt, which means your body is going to use sugar only.

And if you can't fire away from your powerhouse, if you're operating below that, the body also doesn't really have a strong impetus to utilize photo. So it's going to go to glycogen and everything else.

It'll utilize that, but not very well. It doesn't do mitogen mitochondrial biogenesis. Right. So if I'm walking at a 90 heart rate we don't. The body goes I don't have to build anymore.

I don't have to build any more energy making. So there's a sweet spot. We're looking for the sweet spot okay. So so here's you'll hear people, you know that like you got to do this five days a week, four days a week.

Nobody's got that kind of time. So when I come. On man, you love Betty guys. But the reality is, is that this is zone two is a is a time thing. It doesn't really help you to do it for ten minutes.

Like before you start working out or 20 minutes, you need one day a week where you do it and the longer you do it, the better. So what I did is I got on my bike like day a week.

I did an hour to two hours. Oh, boy. Yeah. Now I worked up to it. Right. And you can do you can do intervals in that if you want. But who has a bicycle anymore?

Everybody's got these like, bikes that do the work for you. Yeah. No e-bikes, e-bike e-bikes. Unless I hold another. Peloton, you could do it on a stationary bike like my husband doesn't on elliptical trainer.

I hate those things because they're not built for me. They actually hurt my my hip flexors. I mean, they cripple me when I get elliptical is terrible.

And you're not getting ladies, you're not getting any bone building. You're not getting impact on you're on elliptical. Don't do it. You're far better to pound your feet on a treadmill.

Yeah, yeah, yeah. But this is this is the reason. Think of it. This is not the greatest form of punishment. This is not me grinding it out. This is metabolic maintenance.

So what about women who do, like a bar method class or a Pilates class? I mean, you get your heart rate up and you're like, you don't want to be talking.

Is that enough? Or does it really need to be? It's not enough. And it's the oxygen intake that's necessary. And here's the thing. Zone two training like that also reduces your risk of dementia and Alzheimer's in the double digits.

Oh shit. I got to buy an exercise by Parkinson's. But all of it I know, I know, but here's the thing. Like, here's what I do. I get on my bike and I listen to music and I sing along poorly.

Right? Because that's my other way to tell that I can. That I'm not too high, not too low. I do do heart rate training. So I wear a heart rate monitor so I know I'm there.

I'll do that once a week. I add bar method yoga. Those things are great for agility and sync band muscles between body parts, right? You have a dominant side. They help sort of equal that out.

They build a little bit muscle, but they're not equal to weight training. And then. You still wait train to. Oh yeah. Yeah three days a week. But you go in there, you commit, you get it done and get out.

You don't need to be in there for an our. 20 minutes groups. I don't answer who gives a shit really. Because I don't want flappy arms. I want definition right.

But here's the thing. If you do big arm muscles right, if you do big muscle groups, so include. Legally quads. Girls you know, like squats, hinging movements.

You know, it's it's better to do a bench press or just push ups than do curls because you get your entire body and your core. Right. And I just my thing is I even when I was a bodybuilder, I worked my arms like nobody's business.

And the only time you could see the definition is when I flexed, you know, like, hold on a minute. You know, like you're like a guy. It's I'm just telling you, like, if you're if you're limited on time on big muscle groups.

Yeah. Ladies, you're not going to bulk up. You are not going to bulk up. It's so hard to do. No, I lift with a trainer 2 to 3 days a week and I have no bulk.

I'm just lanky and lean, and I wish I could get those muscles to show up a little bit more, but they're not. That's genetics. Like. Yeah. What are your.

Yeah I have no abdominal genetics. There's never going to be a fat going on here. You got scared. About skipped on the abdominal genetic. You can't get Jack in the trunk.

I got in a junk in the trunk. Even when I was, I had shredded big legs, like dig. Yeah, I still had poochie tummy and a booty. And I was like, this is it. Thank you.

J-Lo. Yeah. I mean, now all I do is want to work out my booty. I don't want, like, flat old lady, but. So I work those glutes and it's also helping my blood sugar regulation.

It's helping. It's helping me balance. Okay. So we talked about sleep. We talked about the type of exercise. We can do. Some interval like high intensity intervals have its place right.

Like I sometimes I will at a high intensity interval. And I will also do that on my bike. So what is a high intensity interval that get your heart rate as high as it can go.

And so you have to slow down. And the best way to do it is the goal is to get your heart rate to the point where you feel like you need to slow down in less than a minute, and then move it down to less than 10s like all out, right?

And then blow it down. Because what that does is create heart rate variability. It's great for the brain, great for mitochondrial function, all of that.

Get those two things dialed in, get the fiber dialed in, then worry about your protein. Oh yeah. Fiber. Yeah. Sorry. So sleep exercise fiber. Now we're talking protein. Protein. Right.

Because here's the thing. If you're eating the protein and you're not getting the right combination of exercise to get your body to use it right, you may very well be making sugar out of it.

And if you're not sleeping, you are making sugar out of your protein, which is your muscles. If your body is insulin resistant and you're not exercising and you're pounding and 150g of protein, chances are you're not really doing that either, right?

Guys probably can because they have a different metabolic makeup. Right? There's also a really important thing is, if we look at the research that just recently came out looking at like GLP use GLP, gypsum, Andrea Govia, all of that.

We know when women are in perimenopause and menopause, if they're on those drugs and they add hormones to it, it's like it's like jet fuel. It outperforms because again, estrogen, testosterone, progesterone have metabolic effects that improve the outcome of those medications.

So that's the other thing is if I were to pick between oh should I do a GOP or hormones.

Protein, Fiber, Hydration, and Exercise Strategies

Do hormones because hormones will protect you from dementia heart attack stroke, osteoporosis, Alzheimer's, dry vagina, all of that. I mean, you're not going to be able to pry my estrogen out of my hands.

There is no way. Yeah, yeah. I mean, the reality is, is weight loss through whatever mechanism and especially a GOP GOP's have indication. But those are minor minor peptide molecules that talk to different body parts, but they are nowhere close to the impact of these sex hormones.

And if you stack them, if you happen to be on them and you stack them, that is like a double whammy. Amazing. Is there anything else that you're going to talk about eating protein.

Like what are we. Should we eating. How much when. So. So this is one of the things like I was of the mindset I went through one of my two masters and one in the time period where it was like eat three meals a day and two snacks and have protein at every one of it.

All heard that. So of course we all picked that up. We run with it, and then we get into the fasting game where we start doing this with food. And here's what the data shows.

So they did a study looking at younger individuals, older individuals eating protein. Right. And this is where they young people can just eat protein and make muscle.

What they found was the first meal that breaks your fast in the morning. And the last meal of the day are the most important. And if I'm going to eat 110, 120, 150, whatever grams, I want to cram as much of that into those two meals.

And that middle meal doesn't really matter that much. Oh wow, you can have it there. But the goal, like I tell people, I'm like 50. We want 50 in the morning, 50 at dinner.

Steak and eggs, baby. That's often my breakfast stick. And even if you're like a smoothie person, like, okay, Holland Gin doesn't count. Collagen doesn't never goes to muscle protein synthesis.

So I don't have a problem with dairy, right? So I eat dairy. So I make this, like, I don't like smoothies. I'm just gonna be honest. And so I will put, like, cottage cheese and yogurt and protein powder, fruit, nuts.

I will put all this stuff in, you know, England. And so by the time I get it, I've got like 60g in about that much out there and that's I blend it and I don't put a lot of water in it.

So it's like a spoon and I and then I blend it and then I throw some nuts on it. Sounds disgusting buddy. Well, when. You blend it together, like if you have yogurt and a little bit of cottage cheese and then like a vanilla topping, protein powder and a.

Okay. All right, all right, I don't I can't do all the dairy. Yeah. So somebody can't do dairy. That just happens to be one of the ways that I'll do it because I can choke it down.

That's why I eat steak and eggs. Yeah. Or steak and it. Yeah. Because I can't eat dairy. Well, here's the thing. I eat a lot of things that I can't eat eggs, so, like that's tough.

So I eat a lot of things that are general foods for breakfast. You know so some people. So protein morning sandwich your day protein. And I'm assuming if you're going to eat snacks do it in the middle of the day.

Yeah. Each snacks. And if you can like look at it because, because the the reality is is our body slow to do it. It says oh if I get a little bit I'm just going to make sure. Right.

And so if I'm, if I'm eating, if I get them mostly crammed in there and then whatever I have at lunch is it. But the protein snacks between that really doesn't matter.

And by snacks I mean, oh, I want like those avocado oil potato chips or I want those that I want the crunch or I want the soul bay or something like that.

I have, I have my moments like if I'm dying tomorrow, it's chips and salsa and queso is the starter. That's your final meal. I'm with you. I want some baka moly with that.

What? Right. You know, so I love those. But we have to remember that they're kind of. They're just. They're empty calories and they add up very quickly because they're full fried fat.

Right. And I'm not saying don't ever do it, but I kind of try and do the 8020. I try to behave myself 80% of the time and 20% of the time. Like tonight, I am probably going to have some salsa and chips and guac and queso because it's Friday.

Because it's Friday. I just don't do it every day. Right. So what? So what else we've talked about now, we've talked about protein, fiber, sleep, the right kind of exercise, hormones taking getting.

So those are five things. Is there anything else. You know the other thing I would say is hydration right. Hydration is so important. So the solution to pollution is dilution right.

I say that all the time in my community. And we think of hydration as, you know, like I'm cleaning my car out and I'm, you know, getting everything out of the liver in my kidneys.

But here's the thing that you don't understand. Hydration has a lot to do with your metabolic rate, right? So if our body is dehydrated, then mitochondria cannot work well.

And what it does is it shifts from producing energy ATP to a Ampk. And and so essentially what happens if you're dehydrated? The brain signaling says, damn, I don't have enough water in my bloodstream.

I must be starving because it's triggering a starvation response. This is what allowed us to survive things that look like ice ages and other stuff as humans.

So the reality is, if you're dehydrated, your cells start to slow down that activity. The other thing that happens is we have an enzyme, what is called for Tolkien's and a couple other ones that if your blood is chronically dehydrated, the glucose in your bloodstream will get converted to for posts, and it will stimulate and burn in the mitochondria in a different way, because fructose doesn't require insulin in the powerhouse.

And there's a great book called The Fat Switch by Doctor Rick Johnson. He's got he's he's published 300 times. And he caught this because they found it looking at salt sensitive hypertensive people, high blood pressure that are salt sensitive is they found if they fed them enough water their hypertension wouldn't wouldn't be affected by the sodium intake at all. Wow.

And while they were looking at it they were looking at blood sugar variation and all these other things. And they found that when these people were dehydrated, they had all these blood sugar abnormalities and other end and all

these other metabolic changes.

And so over the years, they identified this sort of what he called the fat switch, which is our bodies attempt to save us when we don't have enough food and water.

Well, it's so funny because I feel like the whole water conversation goes back and forth and back and forth. So what I'm hearing recently is you're over drinking water and you're diluting the sodium in your body.

So you're hurting yourselves by drinking too much water. All of us walking around with our water bottles. I mean, I saw the funniest thing on Instagram like a month ago.

Somehow I made it through college without a single memory of ever drinking water. I promise you I didn't. I bought 190 God like we didn't have. Nobody carried water bottles around ever. That did not.

That did not happen until the 2000. That was. 100%. No. And when we were kids, we just went and drank out of the water hose in the yard when we were thirsty.

Right. Like any how so what is the Goldilocks amount of water like that? You know Goldilocks, not too hot, not too cold, not too hard, not too soft. Like, what's the what is the Goldilocks amount of water?

That's not too much. Not too little. Yeah. So generally speaking what what I would recommend over the course of a day. Right. You don't want to pound it all at once because it's gonna run through you and you have to. Run through you, right?

You're going to be right. Your fruits and vegetables are water sources also that count words that water. Yes, we forget about that. But the reality is, is if you were to do one ounce for every 2 pounds of body mass.

Oh, interesting. Mean body mass. Okay, let me calculate myself really quick. Yeah. So if I'm, if I'm, you know, if I'm 130 pounds, right. Or 150 pounds, we could even do that.

Okay. Let's do 150 pounds. So 150 pounds. Yeah. So 100 and 7,050 pounds. So for every 2 pounds one ounce. So 75oz. 75. That's an easy math. Now if you happen to live in Texas like I do and you go workout outside and you sweat like a, I don't know, I sweat like pit, I don't I'm not dewy, I sweat, right?

Yeah, you definitely need to replace water and electrolytes, because most of the time you're going to sweat out, especially sodium in most cases. So location matters.

Location, location, location. Location matters. And how you sweat matters. Like I'm a heavy sodium sweater. So like you were to watch me after I got off my bike in the middle of July.

After two hours, you can see the salt on the surface of myself. Oh, you become a human salt lake. I'm a human salt, so I will replace that. Now, if you are eating clean, let's say you predominantly, let's say paleo ish.

You don't do a lot of a lot of processed foods. You can probably salt pretty liberally because you're not getting sodium that's baked into everything.

Like I can't even remember, but I want to say like a can of Coke has like 1300mg of sodium in it. Like there's stupid amounts, right? Like there's stuff hidden in stuff that you don't know.

So when you clean up your diet, often we see less sodium. Right now, most people, if they're eating closer to the standard American diet, you got plenty of sodium in your diet, right?

You don't need to salt things. The other thing is, is electrolytes. Electrolytes is a that's a better conversation. We can have electrolytes are your potassium, your sodium, your chloride, your magnesium.

Calcium is a little bit but not is usually not in there. And in order for it to get into this cell rapidly, you know what else it needs? What sugar because it is SLT sodium glucose transport.

That is. So if you're working. Out a Hall pass to have a little bit of sugar, is that what you did? If you're working out you. See how you did that there? Yeah.

If you're trying if you're trying to restore your electrolytes to the cells because you're bonking during exercise, an element is not going to help you.

There's no carbohydrate in it. You need a little sugar. Well, this is why we this is why we give diabetics orange juice when they're hypoglycemic. They need that sugar rapidly.

Yeah. Yeah, but but the other thing is a sodium. Sodium. In order for it to not go through all of the digestive transport, through digestion, that that will take hours from now to kind of do its thing.

You need a tiny bit. So almost all of your really like, endurance athletes stuff will have a little bit of you don't need a lot, but a little tiny bit if you really are dehydrated and need water and electrolytes.

And it's funny because people don't understand that and they're going to read the label of something and they're going to see sugar and they're going to think, oh, this is crap, I shouldn't have it.

It has sugar in it. And actually, it's actually supposed to be in there. I had this discussion with a friend of mine who was making it. He was like a triathlete.

And he was he was making a, like an electrolyte drink. And he was explaining to me like years ago, five years ago, why sugar needed to be in there. And I remember thinking, this is like we shouldn't put sugar and there people are not going to want to buy it if they're sugar in it because they're anti sugar.

But it was really important for it to be there. Now that whole conversation is coming full circle to me. Right now. And and people will tell you opposite.

But I'm telling you, the transporter of immediate transport into a cell to get electrolyte balance back up as GLBT. Which part of that is glucose? Wow.

So here's the other thing. Well, that's a mic drop. Yeah. So the other thing is is estrogen affects the excretion. And like how many people pee to much. Right.

You're like I got p p p. Some of that is pelvic floor and urgency and other. But the other thing is is we are more we are we excrete our fluids more quickly.

So if you're a very active woman, maybe, and you feel like your brain fog and all that other stuff, you might need an electrolyte. We don't necessarily need electrodes every day, especially if we're not working out intensely.

But if you are, you do. And if you're using electrolytes during your workout, you want one that's got a little bit it's carbohydrate in it. And then if you're feeling like you're drained, I would get one that's got a little bit too and put it in there, you know.

But most of us can drink water. We're fine. But if people are doing like a gallon and a half, like, that's too much. Could we take, like a regular electrolyte that we like and add a little bit of coconut sugar or something to it?

Would that do it? Yeah, yeah. Or squeeze an orange in there or orange. Anything that's got you don't need much carbohydrate. It's enough to trigger that enzyme and that and that transport.

So so just use what you got and add a little bit of sugar to it. Put up, put a dose, put a drop of honey, put some maple sirup, put something in it. Right.

All that will work a little dab will do you my grandma would say. Yeah. So yeah. Totally fine. It's good, it's good. Okay. So about it. So Betty is there. So we've talked like six. Okay.

Let me let me go back and count. So going backwards we talked about water hydration being important. We talked about protein intake fiber intake sleep hormones the right way to exercise.

So six things.

The Future of Womenu2019s Metabolic Health Research

Anything else? Before I ask you my final question here. You know, I would say those are the big ones, right? Like you always look at the foundation of things, you know, like peptide conversations is a great one.

I've had this. Yeah not peptides. If you don't have the foundation really dialed in and those things are working, that's just expensive P right. Really really write. It down the toilet.

But but you know what I mean. Like all the ones that people are reading about like those things add to a really good foundation. But I just gave you was a really strong foundation and an order in which to address them, to get your body doing the right metabolic things with doing what he used to do in many cases, or not, because I was never naturally thin, like I had to fight for it, but it was easier to fight for it when I was younger.

You know, I know now that I was, you know, PMOs, which is poly, endocrine, metabolic, you know. The new. PCOS. From PCOS. But yeah, you know, I didn't fit the mold.

So I'm like, okay, so if you have that, this is even more important for you. Right? But get the foundation. And then when that if there are nuances that don't work then go looking right.

I think the big overarching message today is you can't you can't hormone dose your way out of this, and you can't GLP one your way out of this, and you can't peptide your way out of this.

There is these foundational things that we just have to dial in as we age. If we want to feel good in our bodies, we really have to dial all of this. And I think sleep and movement right, moving, getting into that zone too.

So, Betty, where do you see the future of menopause science and women's metabolic health heading? And what do you hope that women will better understand in the coming years about aging, metabolism, hormones, long term health?

What is the future? Yeah, I mean, this is really why, you know, I went back to school. At 50. Like, why would you do that? And, you know, the other side of it too was, you know, how to answer this question because we have to understand that we weren't in studies until 1993.

We had to legislation. Here's the reality to our current administration, our current everything that's happening between NIH, CDC, Pharma, the administration has could halt to funding most of the research out there, including cancer, but especially women's research, and particularly women's research.

That doesn't have anything to do with reproduction. Right. So the truth is, is we have this we have a basically 100 year gap of research that women's health just hasn't had because everybody was like, you're just men.

We're like, no, we're not better looking, smarter men. We're right. So here's the thing. So so we have a we have an opportunity here as the public and people like myself that are building technology and telemedicine and other things to build something that basically creates a privatized experience for women to be able to capture and understand their own data.

So I just got chills when you said privatized a privatized experience, that means you have control. That means you're taking your power back. I literally my whole body got chills. So keep going.

Yeah, I mean, so so the technology that I'm building, Minerva is it's so cool. I'm so excited. Can wait I can't wait. It's an. Minerva's already so cool I can't wait.

What you're doing to see what you're doing next. Yeah. So the cool thing is it's an app that you're able to download. Start connecting all your wearables. Right?

So any of your junk you're wearing, all your Satan, you can track all your symptoms. You can look at all that stuff. But instead of having to go to all these different apps, it starts to synthesize all that data and bring it together.

So when you don't sleep well, your blood sugar went up and your heart rate variability went down and your sleep looks fractured on our aura. We already know, and we're going to look at it and go, here's your trend over seven days, and here's what we think you need to do because we have already seen it.

Right. And then, you know, you're changing your diet. You're doing all that stuff. If you engage with our company and do telemedicine and do hormone replacement, then we start to plug in the supplements, the hormone metabolism with urinary hormone testing, the genetics, your lab work, and then how do you take your hormones, your other drugs, your supplements.

And we're capturing all that about you individually. So you have your own data from start to finish. Then the company as a private company has that de-identified as its own private research database to become a flywheel for innovation in research for women's health.

That's not dependent on an age, not dependent on the government, and definitely not dependent on pharma, you know? So, for example, I didn't even get a chance to tell you this, Laura.

I just created the methodology for a huge cardiovascular study. And we're we're basically using all our retrospective data at Living Well and Minerva to show how much hormone replacement therapy can impact lipids.

ApoE be like because we already have the data, right? And so I can whip out research and basically collapse that. So what would normally take 10 to 20 years?

We can collapse it in years if not months. That's my ultimate goal and I want it private because we aren't too much of our medicine. And everything about what's happening is becoming public display and also privatized or taken out of private hands into the government, which is not safe and not okay.

And I am so proud to know you. If I have not told you that recently, I mean, you know, I fan girl all over you. I just think your brain is extraordinary and I love your sense of humor and I love your no nonsense.

And I love when you drop an f bomb. I mean, all of it is just perfectly placed every time. And the fact that you're fighting for women's health and that you've, you know, you've taken your own journey of just crappy menopause, you went through crappy menopause and your body betrayed you, and everybody around you couldn't help you, and their advice betrayed you.

And look what you're going to do with this. I mean, no pain that we ever go through cannot be experienced for good, right? So you're taking that painful experience and you're doing something good with it.

So I'm just so proud. I'm so proud to know you. And you must be so proud of yourself. I'm pretty excited. Yeah. Like, my nerd gets super excited. You know, like, when I built, I.

When I built a method for that study, I was like, oh, I can add that and this and that. Like, there's we're already going to be publishing stuff that's not out there.

I can't wait, I cannot wait. Tell us, tell our audience how they can find your work. Where can they connect with you? Where can they find what's going on in Betty Murray's world?

Yeah. So you can obviously find me on Instagram at Doctor Betty Murray, Instagram, Facebook, LinkedIn. And then you can also look me up on the web at drbettymurray.com And then you can find my podcast, Menopause Mastery, that's on all podcast platforms.

I put something out every week, and so we've got information there as well. For how long? About four years, 3 or 4 years that I've been. Doing well. Now. I've never had this particular talk with you before.

Usually when I bring you into my community, we're talking about all of the myths around hormone therapy and the the botched studies and the Women's Health Initiative and hormone metabolism, and who can safely take hormones and and who needs to do something different.

And it's been really fun to actually dive in with you on this topic. I, you know, I thoroughly enjoyed. So thank you. I hope everybody viewing and listening enjoyed as well.

And definitely go find Betty online and follow her work because she's changing the world. Until next time everyone take good care. Bye now.