Menopause as a Whole-Body Stress Test

Welcome back. Today's conversation is one that I think every woman in perimenopause and menopause needs to hear, especially especially if you've been told your symptoms are just hormones because of course, yes, hormones matter.

But what if menopause is actually exposing deeper dysfunction that's been building in your body for years? You know, so many women are trying hormone therapy and supplements and restrictive diets are one protocol after another, only to realize they still don't feel truly well.

My guest today is Doctor Peter Kan, an expert in functional medicine and functional neurology. He specializes in helping people uncover the deeper root causes behind chronic symptoms and complex health conditions.

And that applies to menopause. And what I appreciate so much about Doctor Kan's approach is that he looks at the body as an interconnected system, and he teaches that a pause is not simply an isolated hormone event, but it's a whole body transition involving the brain, the immune system, the gut metabolism and nervous system.

So Doctor Kan, welcome today to the conversation. Thank you so much for having me. Laura, I'm really excited about today's conversation. I am too, and you know, we've done a lot, a lot of interviews together over the years, but I've never interviewed you on this topic, so I'm really excited to go into this one and hear what you have to say about it.

So let's just jump right in and tell me what you mean when you say that menopause isn't primarily a hormone problem. And I'm going to say that again, you believe it's not primarily a hormone problem.

And so many women are led to believe that it is. And why do you believe that they're being. The women watching today are being led to focus so narrowly on hormones, while deeper dysfunction in the brain, the immune system, the gut and metabolism is actually being overlooked.

Yeah, that's a great and very important question, because hormone replacement therapy has been invoked for a long time. And I want to start off by saying that hormone replacement therapy can be absolutely life changing for people who need it, right?

And some people get miraculous results, like everything just turns around for them. So I'm not here to downplay hormone replacement therapy because I think it's a very useful tool, but it's not a miracle cure.

End all, be all for everything. We totally agree. Totally. I've seen this in my own practice where women. But I did the hormones and they didn't get the miracle they wanted.

Yeah. And I think if the hormone replacement worked great for you, awesome. Congratulations. I'm happy for you. I'm all about just people getting the lives back and feeling great.

But what about for those people where hormone replacement either didn't give them satisfactory result, didn't get them all the way there? Maybe you fixed part of the problem, but didn't fix all of the problem that they thought, or it just simply didn't work at all.

There's a reason for that. And the reason for that is because menopause is not simply a estrogen deficiency right now.

Why Hormone Therapy Alone May Not Be Enough

That doesn't mean that there's not an estrogen deficiency component. It's just that that's not the only piece that's involved. In fact, menopause is actually a stress test.

It is a stress test. Meaning coming into menopause. It is a test of how well has your body weathered your entire life with toxins, stress, blood sugar, metabolism, brain function, and all of it.

And if you're coming into menopause already stressed, then you're going to fail the stress test more likely, and you're going to be the one that's going to have a harder transition into menopause, where women go into menopause feeling just fine, right?

Yeah. So fascinating. I you know, what's coming up for me is it's almost like a litmus test. Did I say the right litmus test of how you did all the first, you know, five decades for four and a half, five decades of your life, how you did to get to this point.

And then either you're going to go one of two ways. Menopause is going to be easy or menopause is not. Yeah, that's a great way to put a litmus test. I like that, and that's what I mean by a stress test. Right.

Kind of like the EKG stress test. And that's exactly what it is. The transition. The menopause transition is a systems transition that involves the brain, the immune system, the gut metabolism, mitochondria, your stress response involving adrenal glands and your whole entire endocrine network.

So it's a stress test of all the system, whether they're working or not, to be able to handle this natural transition. Menopause is not a disease to be managed.

Menopause is a natural phenomenon that occurs. So it's not a curse. It's a transition. You transition from one stage of life to another, you know, in life, but also biologically.

You go from cow rearing to not needing to ring anymore. And this transition is a stress test for all of your neuro metabolic system. So what I'm saying is that hormones matter, but hormones, they operate inside a terrain, okay?

Hormone does not just operate on on their own. So if the terrain is inflamed, if the terrain is insulin resistant and you have brain inflammation, you have leaky gut.

Your guts compromise your sleep deprived from years of stress, right? That stress test we talk about your toxic or your metabolically unstable. Then hormone replacement may help temporarily.

But a lot of women still, even with HRT, can still experience brain fog, right? Maybe the HRT made it better, but they still have it. Well, they still have anxiety, or they still experience the weight gain that doesn't go away to spy HRT.

So have fatigue. Maybe sleep is not great. Hot flash usually is a symptom that improves with HRT. Some women still get some hot flash doesn't completely resolve, although that's usually something that resolved the both.

With HRT, you can still have mood swings, and this is what a lot of people don't understand is that as you go transition into menopause, even with the hormone replacement, it does not resolve the inflammation and immune system problem that you have.

So if you're going into menopause with autoimmune problems, you may have more autoimmune flares. As a result of this hormonal transition. You have may have more histamine issues.

You may have more, you know, associated or accelerated aging due to more oxidative stress. That's not necessarily completely resolved by HRT alone. So the question is not just do you need hormone replacement?

The bigger question is can your brain and your metabolism and your neuro metabolic respond to the hormone that's given to you, right. It's not about whether it's not just whether you need a hormone is can you a body actually

use the hormone and respond to that?

That's the main thing. That's the main thing. And you kind of alluded to it. You started to mention toxins and inflammation probably infections.

How Hormones Work Through Brain, Transport, and Clearance

And so so you know, so many women here are struggling with symptoms like fatigue and anxiety, insomnia, brain fog and that inflammation and the weight resistance even when they're on the hormone therapy.

So what deeper root causes do we really need to unpack today. What's being missed? And were the things you really want to highlight so that they know when they go back to their hormone prescriber.

Hey, can we look into these things? Absolutely. Yeah. And what I see, I think the first step is to understand how hormones actually work. Right. So hormones again, don't work in isolation when we're doing hormone replacement.

Hopefully people are getting tested for the hormones. So you can test the hormone through the dry urine test, Dutch test or blood test or saliva test.

But what we're measuring is how much hormone is circulating in your system in one of those tissues. But that doesn't tell the whole story, because hormone is an intricately controlled neural biofeedback process, works on the negative feedback loop.

So it starts with the brain, right? Hypothalamus and pituitary. Right. The hypothalamus is sensing how much circulating levels of hormone you have. And then based on that is controlling the releasing hormone in the stimulating hormone.

Right. That's the neuro control part of that. So start with the neural control hypothalamus controlling the releasing hormone and stimulating hormone that will actually control the gonads whether it's ovary or test.

Well in this case menopausal ovaries. So then ovary can respond by making progesterone and estrogen. So it starts with hypothalamus territory. But even as the ovaries making it then there has to be transport protein.

The hormone that's made had to be transported somewhere. That's your sex hormone binding globulin. It's got to be able to go to where it needs to go. And once it gets where it needs to go, then it has to stimulate the receptors, right.

The hormone have to get into the cell through the receptor side. So there could be a receptor size sensitivity problem. Once it gets a lot of steps, there's a lot of steps where things can go wrong.

There are steps. And it's important to understand these steps because you got to bring it's got to sense the level of hormone. And it's got to send a signal to the gonads, to the ovary to make the hormone.

That's usually where most people are doing an intervention at that level. But then once you make the hormone, it has to be transported. And that can be thrown off by many things such as blood sugar problem, insulin resistance, inflammatory cytokines, all these problems.

And then once it gets to the site, for example, estrogens very much needed in the brain. It's neuroprotective. It's cardio protective for females. It helps to dampen inflammatory response.

So estrogen serves a lot of really important function. But what if it can get in because the receptor site is blocked. And then once the hormone gets into the receptor side it's going to trigger a proteomic response, which means DNA transcription.

It's going to actually make protein. So it's doing what the hormones telling to do to produce enzymes and protein

that requires nutrients like proteins and different intake.

Right. And then after that it has to be cleared or among clearance is very important in female. And it's primarily mediated through liver gallbladder function with bile and liver function biotransformation.

And then the gut microbiome play a role. So that's called astro below. Astro below which means how your gut microbiome interact with the hormone to help you to eliminate that.

And methylation. So we have feedback loop from the brain. We have production from the gonads from the ovary which is what you're trying to solve with HRT.

And then we have transport. We have receptor. We have proteomic response. We have clearance addresses only that one level at the ovary with the hormone production.

It does not address all the other levels. So what if these other levels are broken then the hormone won't work. So then that's your next question, right?

Are there any particular reasons that those different levels would break? What would be the things? Yeah, absolutely. For example hypothalamus pituitary.

What will cause that to break. Well, let's just go straight to the very straight forward thinking. You just have the injury concussion you hit your brain.

Hypothalamus can literally get structurally injured. So if you have some examples of that because people don't realize like I never had a brain injury, I'm not a football player.

I didn't ram my head into anything. I mean, it can be the simplest thing. It could be just concussion. You can hit your head and you don't. And people think like, what's concussion? You know, like, I didn't pass out.

You don't have to pass out or lose consciousness to have a concussion. All you need to do is hit your head hard enough for your brain to be inflamed. That inflammation symptom results in usually brain fog, disorientation.

This is why you know the football injury protocol. How many finger am I holding up? You know, time, place, orientation. Where are you? What day is today?

They're asking these questions because you had mentally confused. Now sometimes you can have that post-concussion right away. But sometimes it comes on gradually over time.

That's called post-concussion syndrome. So it can be a delayed onset and people don't know that. And what happens each successive concussion makes it worse than the previous one. So that builds up.

So the next time you hit your head even mildly because you have history of concussions, help this next head bump against the kitchen cupboard. It just triggered brain inflammation.

You're bending down and you come up and smack or I had a ski accident once wearing a helmet. Fell bang, hit my head right on. And so you're not. And I got up and skied away.

But that was a traumatic brain injury. It can be. Right now, not every traumatic brain injury resulted in the same injury. Right. So that again depends on preexisting conditions.

Some people with insulin resistance, hypertension, inflammatory states, then that same concussion will be worse for that person compared to somebody else who's doing relatively well.

Brain Injury, Stress, and Receptor Problems

That's why people it behooves people to work with a functional medicine practitioner like yourself or myself, to really look at these factors and baseline status so that we can design a protocol to help you, to move you along so that you're you're removed from that preexisting state that might predispose you to not only concussion, but these menopausal symptoms, because all these things that we're talking about all impact menopause.

The fact that you have history of concussion, that means brain inflammation. If you have brain inflammation, that's going to impact your brain's ability to work.

And this is going to impact downstream hypothalamus, pituitary because the hypothalamus to take input from the cortex itself. If your brain is inflame your hypothalamus and it's not going to work.

Hypothalamus pituitary also very sensitive to cortisol and inflammatory cytokines. So again you ask what's the thing that can impact that level. Blood sugar dysfunction extreme stress with a lot of cortisol right.

Because that HP axis is feeding back to the adrenal. So then stress cortisol level inflammatory side that can all throw out the hypothalamus pituitary and have a downstream impact on the ovary.

Now and then the hormones don't work as well because the HFPA the the hypothalamus pituitary ovarian axis cannot work. So your ovary doesn't know how to respond to the brain signal.

So therefore downstream you have hormone problem. Now below that we talked about receptor sites. That's a very common problem for people to have receptor sites.

That doesn't work. So what can gank up the receptor sites will be things like again cortisol and inflammatory cytokines. Sometimes there could be a substitution that happens because these hormones may be very similar.

Like steroid hormones are all steroid hormones. Cortisol, testosterone, estrogen they're all steroid hormones. So they can kind of like substitute the receptor side.

They can occupy each other's receptor sites. So then if you have way too much cortisol, that can block the receptor side from accepting the estrogen because it's already there.

Another thing that can cause receptor site down regulation is environmental toxins. Right. There's a lot of these xenobiotics that are estrogen mimics.

And that can also block receptor side sensitivity. And keep in mind that even hormone replacement itself can block receptor sites. Right. So if you're taking hormone, then if you're taking too much, too much estrogen can cause receptor side to down regulate.

So then you're not no longer sensitive. Just like insulin resistant you can become estrogen resistant. Why would you become estrogen resistant? Same reason why you become insulin resistant.

Too much insulin spikes. So if you're taking a new source, it's not well monitored and you get overdose and you're not getting tested properly or frequently enough, then that can cause you to actually not be able to take in the estrogen that you're taking.

So sometimes adjusting the dosage is important. Now downstream from that, that's where a lot of these functional problems can happen. That's the clearance side right.

You can have liver gallbladder problems pretty easily from chronic exposure to toxins. Just eating too much fatty foods. Gallbladder is not working properly.

You can have flukes coming up your bio ducks. You can have parasite issues, right? You can have toxin problems. You can have problem with your gut microbiome by being despite, right?

By eating foods that may have damage to gut microbiome. Things that are contains, you know, pesticides that can damage the gut microbiome. So there's a lot of these functional or nutritional lifestyle factor that can cause decrease in clearance.

And we can when you can clear estrogen progesterone well it tends to get recirculated. And then you're creating this artificial elevated levels that can gunk up the receptor sites again causing receptor side downregulation.

Therefore it feels like you don't have enough when in fact you have way too much simply because you can't clear it. You can recycle it, or you're just getting exposed from other sources that look like estrogen, but it's not actually estrogen.

So you touched on it already, but I want to know if there's anything else you want to layer in here. So between the brain, the immune system, the gut, the nervous system and all interacting because this is really what you're known for is helping simplify that interacting of all those systems.

So considering that they all interact, how dysfunction in one area can amplify symptoms throughout the entire body. So is there anything else you want to say about that particular piece?

Yeah, absolutely. You know, so the brain immune gut endocrine access is something that I put forth. Now. It's not something that I discover. It's already in the literature. It's just that a lot of people are addressing individual pieces and parts of it.

And so what I've done is just put forth a framework and making people aware that, you know, if you have brain symptoms, you may need to look at the gut.

If you have gut symptom, you may need to look at the immune system. You have immune system problem. You may need to look at the brain. If you have endocrine problems, you may need to look at all of them right.

Hormone issues and realizing that the brain controls the endocrine system through the autonomic right through the pituitary hypothalamus. Right. So that feedback loop.

But the brain also controls the immune system through the vagus nerve. So the vagus nerve is a major modulator at the immune system. So if your vagus nerve is not working you lose the ability to put a brake on inflammatory response.

So your body has this natural end time response that's controlled by the vagus nerve. And if you lose that, you've become more inflamed at baseline. And remember, inflammation, which is going to result in increased production of inflammatory cytokines, is always going to gunk up your hormones and primarily through impacting cortisol levels.

Because when you're inflamed, these cytokines actually trigger cortisol release. And when you have excess cortisol that start to cause receptor side down regulation, not just the cortisol receptor itself, but can start to do the substitution work and impacting other hormone receptor sites.

And then that causes blood sugar problem so that end up causing a metabolic issue. So then your blood sugar becomes unstable. Then that causes mitochondrial failure which causes oxidative stress which causes more inflammation.

This is how one domino feel it. And so real quick Peter, they feel it as waking. Right. Like I've got this insulin sensitivity I'm getting.

Brain-Immune-Gut Dysfunction and Autoimmunity

Wait, what's going on? I'm taking my hormones. How come this is happening? How is she feeling through this? Right. Yeah. So if there's a vagus nerve issue they're going to feel anxiety. Right.

And then that's one of the main symptoms associated with menopause. They feel these mood issue mood swings some of his anxiety. But that could be simply vagus nerve not being firing properly.

So you get the sympathetic overdrive and then you get inflamed as a result of that. So you may feel achy. You feel like stiff, like I'm just getting older.

And that inflammatory condition causes increased aging, literally. So they feel like their skin is more wrinkly and then they think like, well, you know, estrogen can make my skin just look more youthful.

They hear that. So they think it's just a estrogen deficiency, when in fact it could be just, you know, they're inflamed because they can't dampen inflammation in the vagus nerve level.

Now that's just the brain to self when we're talking about inflammation. That's really one of the biggest thing here because estrogen is a very good immune system modulator.

It dampens inflammation really really well. Loss of estrogen can increase and of kappa be increased. Cytokines make a massive activate. More cost more autoimmune tendencies, increased microglial activation in brain causing brain information.

All of that results in more inflammation, more proclivity to autoimmune disease. So if you already have preexisting autoimmune disease, it might get worse. If you don't already have autoimmune disease, you may start to develop one, right.

So that's why at that transition time, 50 years. And so a lot of people start to get more autoimmune disease. Part of that is because it's increased inflammatory response.

So let's talk about some of those. So maybe it's Hashimoto's. Maybe those thyroid antibodies are going up. Maybe you're starting to have joints that hurt and your doctors running blood tests on you and discovering, you know, maybe you have early rheumatoid arthritis or, you know, these are the autoimmune conditions that tend to crop up there right around menopause.

Definitely Hashimoto's, you know, because the endocrine polyneuropathy is very common, right? In fact, I would say when you when it comes to autoimmune, autoimmune, they really like the endocrine system.

They like to attack hormone glands. So thyroid gland pancreas that makes insulin adrenal gland autoimmune. And then keep in mind. There's also ovarian autoimmunity.

You can have autoimmune to the ovaries. And so there's a condition called poly endocrine autoimmunity where your immune system is attacking multiple integral endocrine glands.

So that's not that uncommon actually. So autoimmune really likes the hormonal glands that some people do have autoimmune to the ovary that's causing that type of problem.

But really you can also have a lot of connective tissue autoimmunity as you transition like showgrounds tend to show up. You know in that stage a lot.

When I worked in the Western medical space, I would say, yeah, a lot of showgrounds and then a lot of, you know, lupus, mixed connective tissue disease, these are all connected tissue related as we transition.

Because when you get more inflammation, inflammation is going to affect, you know, tissue that are more numerous. And you have connected tissue everywhere.

So that means those tissue gets inflamed, which means that they have a higher chance of getting presented to the lymph node for autoimmune antigenic presentation.

So then you get autoimmunity. So this is why these connective tissue autoimmunity is very common. So that's the immune side. And then for the gut by the way when you have gut dysfunction from this brain immune gut access dysfunction it's going to influence primarily how you recycle estrogen.

Because the guts involved primarily with that through the liver bile pathway as well as the gut microbiome. So you may have more estrogen dominance issue that might cause you to have like heavy bleeding, even menopause.

You may have some spotting that comes back, and then you may have neurotransmitter issues, because when you can recycle estrogen, that's going to start to cause estrogen dominance.

That may make you feel more of these depression anxiety episodes. You may have more detoxification problems that can show up as skin problems feel like your brain foggy. Your brain doesn't work.

Definitely. Gut problem can in fact affect sleep too, though. You know, a lot of people who go to transition to menopause, they feel like it's all just hot flash affecting the sleep.

But sometimes, even when the hot flashes control, they still have sleep issue. So that can be because of instability. Fuel delivery problem. Mitochondria problem actually can cause sleep problem.

So those are all problems that could be associated with gut. Not to mention the normal Gus something that it can have from gas bloating and bowel movement trouble.

So you know menopause can really wreak havoc if you see it that way. Because because these hormones, estrogen impacts so many systems. So when they when they start to transition and you don't make as much of it, it can feel like everything's broken.

And then if you come into it with preexisting conditions of bringing you got endocrine dysfunction, then that's going to just make everything feel like it's worse.

It's just so I'm so thankful that the black box warning came off of estrogen, and that it's now more widely and freely prescribed. I do think it was one of the biggest mistakes, one of the biggest mistakes that has impacted an entire generation of women in a negative way that they were they were not offered estrogen and hormone support during this critical phase when so many.

I agree. Yeah, I agree. I think if you need hormone and you get the hormone, it can be live changing. But the problem is a lot of women who is treated with estrogen, if they're still insulin resistant, they're still going to be insulin resistant until you fix it, right.

If you take estrogen replacement, but you still have high cortisol because you're stressed like crazy, you're still going to have high cortisol issue.

You know, if your sleep is poor, you know, and if you take estrogen, but your sleep could still be poor because you choose to stay up late and get stressed out by watching the news.

So, you know, these things still need to be addressed is really the point, right? It's not that estrogen replacement is not helpful, it's just that it may not be enough.

And how you know it's not enough is that you take estrogen replacement therapy and you don't feel like you're a new woman. That means is more than just an deficiency going on.

You may have mitochondria. That's the public service announcement right there. Right there. Like this is the mic drop moment. If you're on hormones and it's not the things that you're dealing with are not resolving, you've got to dig a little deeper to figure out what is impacting your systems.

Yeah. And as as Doctor Kan just explained, a lot of this reveals itself during menopause as estrogen depletes. So,

Doctor Kan, what is the biggest mistake that you see women and even practitioners make when they're trying to fix meta pause, especially when they're jumping, maybe from supplement to supplement or protocol to protocol, or they're focusing only on hormones without addressing foundational physiology.

That's one of the biggest mistakes that, you know, even functional medicine doctors make. But a lot of women who are transitioning into menopause, the mistake is that they're either doing HRT exclusively, ignoring everything else, or the other extreme is that they're doing everything all at once, you know, talk about that.

Well, you know, people because they here, oh, you know, they hear like, oh, everybody have, you know, metabolic issue. Everybody needs to do x, y, z. So then they think that they need to do it too.

And not it's not that they don't need to do detox or address parasites, that they have it or address mold that they have it. They do.

Common Mistakes: Overdoing Protocols and Fasting

It's just that if you do it all at once, it may be overwhelming. So some, you know, a lot of women are taking way too many supplements. They need that.

They don't even know why they're taking it. And they may be doing conflicting diet or overly restricted diet that's actually robbing them of nutrients.

So they're not feeling good simply just because they're not eating enough food. They may be doing way too much fasting. You know, they think, oh, I heard fasting is good.

So they just fast, fast, fast. And then like fasting is not a long term plan, right? Fasting is a short term strategy. You can like fast, you know, every single day meaning like just eat nothing.

You know, you could do a prolonged fast five days, but it's not like, hey, I'm just going to fast for 30 days. That's called a hunger strike. Okay? That's a that's not a plan for for being healthy or to feel good.

Right. So a lot of stress on the body. Yeah. It's a lot of stress especially for females to to do extreme fasting. It's not good. Right. So I think the important thing for people to understand is that, you know, physiology is hierarchical okay.

There's hierarchies. Right. So there's these metabolic priorities I call it. And the metabolic priority number one, people with menopause or any kind of hormone issue, it's actually to address blood sugar.

Which another way to say that is metabolism energy. Right. Because if your blood sugar is out of balance, then it's going to be very difficult for you to stabilize your energy.

And therefore, is it going to be very difficult for the hormones to work, even if you're if you even if you have a deficiency? Because number one, we talk about the brain immune gut axis.

The brain is so important here because it controls the hypothalamus, pituitary and vagus nerve and everything downstream. And your brain is energy hungry.

So it needs a lot of energy. And blood glucose is one of the main things that is dependent on for its energy. So before optimizing hormone, I will always making sure that the person have a stable blood sugar level, not too high, not too low.

And that's usually promoted by lifestyle, right? How you eat, how you exercise and things like that. Does this person have enough oxygenation? How do we know by oxygenation circulatory problems.

Do they have right. Do they have low blood pressure. Do they have anemia. Those things also need to be

addressed because if you don't address glucose and oxygen you'll mitochondria is not going to produce ATP.

You know I don't care how much D ribose you take or how much CoQ10 you take. If your blood sugar and oxygen is insufficient, you're not going to be able to produce ATP. Okay.

So that's kind of nice sound advice doctor. Gone. That's a that's a priority. What I'm saying is physiology is hierarchical. If we just follow the creator's plan then we kind of have a way in that's following the sequence that addresses the first thing first.

And oftentimes people are ignoring the first things first and then going straight for HRT, which is not wrong. It may be necessary, but if you're ignoring the five steps ahead of that, then you may be still the one that suffer with symptoms despite taking HRT.

So I think metabolic priority number one is blood sugar stability, which means energy stability. And then metabolic priority number two for people with hormone problem is actually to reduce inflammation because inflammatory cytokine, an inflammation in general causes a lot of problem with the hormonal system.

It'll cost receptor down regulation. It makes it harder for your hormones to work. And your hormones do not work in isolation. They work with all the other hormones, including thyroid, adrenal.

So if you're trying to balance estrogen, you have to also mind thyroid and adrenals. And if you're inflamed, your thyroid and adrenals and therefore your estrogen is not going to work.

Right. So we have to address inflammation. Yeah. Talk about that. How would you test a woman for adrenal for information? I think he just gave us some clues around thyroid and adrenals.

And then what would you recommend to solve inflammation. Well, that's a summit and a match class in and of itself to talk about. Just give us some just give some tips. Yeah.

Because we think inflammation is like just one marker and then one supplement for it. But you have to realize that your immune system is made up of whole bunch of different white blood cells, different kinds.

You have neutrophils, monocytes, U. S. fills. You know, you have dendritic cells and then you have these different lymphocytes. You have T helper one T helper 2 to 17 trillion cells.

You have natural you have a lot of different immune cells right. And then they're all capable of triggering an inflammatory response of their own. So in effect it's almost like you have the world that speaks like all these different languages.

And you're saying like, okay, what's the one language that I can speak to everybody that's speak differently? No, it's like there's multiple different ways to understand inflammation.

So I mean, we think of C react to protein, you know, as an inflammation marker. And it is but it's a very specific inflammation marker. You know C reactive protein is really the end result of interleukin six being broken down in liver.

So that just tells you about interleukin six which is useful. But that's not the only way you can be inflamed right. Interleukin six doesn't directly tell you how much you know natural killer cell activity there is.

It doesn't directly tell you how much tune of course Factor Alpha are you making. So we have to be careful with that. So I don't want to over speak on that because that's going to take a lot.

But we will do a host of, you know, tests and then put a picture together of how inflamed the person are. And then as far as how to fix it, it's there are things that we can do specifically on inflammation side to quiet down the immune system response.

And then we have to look for the trigger of the inflammatory response, which might be infections of various kinds toxins, blood sugar, stress, physical injuries, you know, previous history of concussion.

These are all things that we have to look at to see, okay. Which one of these are important, pertinent current carbon drivers so that we can remove in.

So then this person can have less inflammation. So it's a I think of inflammation is not a pill that you take to reduce. But I think of inflammation as a process to identify all the different ways you can be inflamed, because it's not one way.

Where to Start: Nervous System, Blood Sugar, and Inflammation

And all the different triggers of inflammation, which could be multiple. Yeah. So you were talking about hierarchy and you talked about blood sugar regulation being first in the hierarchical way to support the body and then finding the inflammation and solving it.

What would be the next thing? Yeah. So you know, in a lot of my content, I talk about the neural metabolic roadmap. And that roadmap is basically describing these hierarchies.

And what would I go after first, second and third. And I talk about blood sugar and oxygen. Then that's an important hierarchy. The next section will be, you know, gut right.

And the gut could be divided into digestion and immune. Right. Because there's a digestive component to the gut and there's an immune component that got right.

So then that could be kind of diagnosed separately and addressed separately. But you know, definitely when it comes to people with hormone problem, these priority number one is fuel is, you know, blood sugar or oxygen.

These blood sugar problem is very common because when you're insulin resistance it causes all kinds of hormone problem right. Aromatase up regulation.

It causes females to get PCOS. So blush sugar is a big deal. And then the second thing is inflammation which really gunk up the receptor sites and really block hormones from working.

The third priority will be liver biotransformation liver and bile function because that's where the hormone clearance really happens. And then the fourth area that I will look at is actually the gut microbiome.

Right. In the past we usually think about detox as like liver detox. Oh yeah. Liver. What do we do with the liver. But really now when we're thinking about detox, especially when it comes to hormone with thinking about the gut microbiome.

So for example, if you have certain type of gut despite pattern, you can produce too much beta glucuronide, which is an enzyme that basically undo the detox that the liver just did with the estrogen.

It packaged packaged the estrogen in such a way so you can poop it out and eliminate it. But that beta glucuronide is that can be produced by gut dysbiosis.

Basically unpack that estrogen and put it back into circulation. So now you get more estrogen dominance. So God microbiome is a thing that we look at.

We look at liver bile. We look at inflammatory cytokines or inflammation period. And we look at blood sugar. Now that's just a some of the steps. There are other steps that might be necessary in this process.

But those are the priorities when it comes to hormone management that I always look at first. Another one I'll add in there is fatty acid deficiency or imbalance between omega three omega six.

That matters a lot more to menstruating female, although it still matters to menopausal female because in menstruating female that prostate gland introduction from omega six can really drive the PMS symptoms.

But as we mentioned earlier, usually the one that have trouble with menopause transition are the one that comes into the menopause already having more problems that the litmus test are failing the limits test.

They already have hormone problems coming into it. They already have toxicity problem coming into it. They already have blood sugar problem coming into menopause.

So that's why they have problems. So if they already have history of having fibroids, having heavy menstrual bleed, irregular cycle, estrogen dominance.

Right. All these problems associated with that, which one of the reasons for that problem could be fatty acid imbalance between omega three omega six.

Then when they go into menopause, they may be the one that's more likely to have menopausal symptoms. I know our audience is really appreciating you, breaking this down into all the important steps.

You know, top down and inside out, all the things that need to be looked at when you're trying to regulate all these symptoms that are showing up in midlife, you know, for women listening right now who maybe feel overwhelmed or exhausted or they just know they're inflamed, they're unsure where to begin.

You know, I know that there I know that you have some advice for them in the very first area that you think they need to focus, calm the system and get, you know, momentum on this to really solve some things.

So where would you tell her to start? So simple things to think about, to start to optimize. First you can calm the nervous system. Right now that might be easier for some than others, but it's well within your control because when you calm the nervous system, you're basically promoting vagal tone and you're also calming down the stress response, which then help to reset the hypothalamus system, which then kind of goes in that feedback loop.

So common nervous system could be an easy first step, right? You don't even have to take a supplement necessarily. So how do you calm the nervous system.

Well you can do deep breathing exercise, right? You can do meditation. You can regulate your sleep even right, just by going to bed early, turning off news, right.

These are simple things that doesn't cost you money, that you don't have to buy a supplement that can help to calm the nervous. And now some people may need more in-depth work with that.

They may need to do more vagal support, either with vagus nerve stimulation or even with supplements. But for most people, just being more mindful. Meditate. Breathing.

That may be a first step that's easy to do. Secondly, what I will do is help them to stabilize the blood sugar. You know that's a big deal. And if you are someone that tend to experience hypoglycemia, then I will have you eat more small, frequent meals.

If you tend to be very insulin resistant and you already have weight problems, right? If you're overweight, you have some weight to lose, then what I would do is have that person potentially consider even in a minute or doing longer term fasting.

So not everybody will do the same thing. But certainly it depends on your pattern, right? If you hypoglycemic eat to stabilize your blood sugar, if you're already insulin resistant and you know overweight, then eat less to try to correct for that insulin resistance.

Either way, the diet should be something that doesn't promote blood sugar spikes, which means that you want to

remove refined carbohydrates and sugar and more fiber and more protein.

So that's the second thing that you can do. That's pretty easy. Again, that's just lifestyle, right? Beyond that, that may require diagnostics. Working with Laura, working with myself to run the appropriate tests to know what specifically you need.

But just everyone. We all can stabilize your blood sugar, we all can calm our nervous system. And then third step, when it comes to reduce inflammation again, there's a lot there early I said that could be a whole lot of stuff.

But you know for everybody. How do you normally would reduce inflammation. Well it'd be helpful to find out where the information is coming from. Right.

If you know that okay, there's a mold problem in my house, you probably want to remediate that. If you know that, you know, there's certain things that you eat every time just causes problem like gluten.

You probably want to eliminate that 100% just for a period of time and see how you do so. Cutting out reactive foods that you know is a trigger could be helpful.

If you don't know, then that's where elimination diet. So you follow a structure and you just kind of find out what food you know it you eliminate is helpful.

So that could be a step towards reducing inflammation. Well thank you, Doctor Kan. Can you tell our audience where they can find you, where they could get Ahold of you, where they can find your work?

I know that you're prolific and have a lot of information out there. Thank you. Laura, for allowing me to share. I think a good resource is just my YouTube channel.

They can just, you know, go to YouTube type Dr Peter Kan, DC, the ball head of Chinese guy will pop up candy is there's his so I you can I find me by my haircut and yeah I have I put a lot of video content online and it's very very helpful.

So I heard so and it's free. So you can go there and you can also go to our website at askdrkan.com You know, I really appreciate you unpacking all this and pouring into this audience, because so many women who are viewing this or entering this phase of life, of really struggling with brain fog and fatigue and anxiety, insomnia, gut issues, inflammation, the autoimmune flares that you talked about, the weight resistance and feeling like their body suddenly can't handle stress the way it used to.

And the insights that you've given today really gives them a starting point for a conversation with their doctors that they're already working with, or even a starting point to start finding another practitioner to work with.

And you work with people from all over the country, right? Correct. He's a good guy. You should check him out, everyone. Doctor Kan, thank you so much for jumping in here in this really important conversation.

As always, I really appreciate having the opportunity to interview you. It's just wonderful to connect again. Until next time, take good care of everyone by now.