Introduction to Endo Access

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Do we help? This is Dr. Talks. Welcome, Dr. Liz. It's so great to have you here and I'm so excited to dig into your amazing brain. Let's kick it off with something very basic.

What the heck is endo access? The great question. Whatever you've been working on. So it's endos and endocrinology and then the access that combines all of the understanding of both superficial and depth.

hormones, right? Putting all the pieces together. So that was that endocrinology pieces, together as an endo axis became a brain child name. It's the creation of Dr.

Guy Citrin and he began this journey a few years ago and brought me on about a year ago to help sort out and put together detailed hormone analysis. And so that's really what it is.

it's providing a very detailed view of potentially very complex hormonal stories. Yes, I know that's so simplified. Let's differentiate. I just want to give some context.

This is an analyzer for practitioners, for patients. How do people use it and access it? Absolutely. Yes. Great question. So this is a targeted program for providers.

Who the Platform Is For and What It Analyzes

Right, for those looking to really support patients through their hormonal journeys, we are using, of course, patient lab analysis, but it's a tool for the provider to be able to upload the report, to see in real time the classifications of the high-level hormonally imbalances that are at play, and then get some recommendations on where next steps or strategies could be to provide optimal outcomes for that individual, that patient.

Okay, awesome. Mostly a tool for practitioners. I love that. There are very few, but often tools for us, so it's great. And then what type of testing can you upload?

Absolutely. So right now we've really, we started with urinary hormones and specifically with precision analytical in the Dutch test. That's the dried urinery testing for comprehensive hormones.

Yeah, my favorite. I think it's a lovely test. But we really wanted to have, we wanted just start with the metabolite story, right? Because you can run parent hormones, parent sex hormones in any medium.

You can do blood, you could do saliva, and you do urine. And you see what those circulating estrogen, progesterone, testosterone values are. and make assumptions off of those levels and help support patients with their symptoms.

It's pretty high level. You're almost just giving a service when you just look at those markers and really to know what's going on hormonally. What are they doing with those hormones?

How are the metabolizing those formats? how do those metabolites influence their health? Right. And, and what can those metabolism tell us about utilization, about processing, areas that we can really further target and treat to

give optimal results for those individuals.

And so I think the only way you can get metabolites, the way can see that journey is through urine. So we really wanted to get that deep dive from the get-go.

We do also include serum testosterone and sex hormone binding globulin, and then we're just going to continue to grow and add in more blood tests that complement the adrenal pictures, Add more inflammatory markers, add in organic acids.

So it's just, and even genetics. My background, my baby is genomics and genetic medicine and environmental health. And so bringing that into how it relates to sex hormone production and metabolism, I think would be, will be quite the advanced programming here, but starting slow and yet powerful and impactful with the urinary hormone metabolite.

Absolutely. DutchTest in and of itself just has so much information and data that you've already gathered. And then analyzing and going through all of that information takes a skill set.

So let's talk a little bit about, I guess I'm curious, is this the type of tool that is going to be helpful for the really specialized hormone doctor?

Or is it going be a tool for a newbie that's edging my way into hormones and trying to figure it out? Someone help me. And I've been both at different points.

Reading Hormone Metabolites and Pattern Recognition

We really want to give high level information. So when we're assessing those labs, I think a lot of providers, if they see the merit in doing urinary testing and they, there's so many studies out on especially like our For Hydroxyestron, for example, like we want to know those levels.

We see them in urine. What do we do with those results though? And I think there's a lot of overwhelm and almost like information stagnation. Where it's like, no, don't want learn anymore.

I know what to do. With these little protocols, let's stay in our safety zone. But we really want you to understand that we wanna help providers feel comfortable and calm.

and using this urinary, advanced urinery testing tool, especially on their complex basis, but really for anyone, by monitoring their hormonal journey.

And I think the way we've built it out, it really is built in little digestible pieces. So it says, here's your high level, don't miss these points, right?

If you just want that 30 second bird's eye view. Then we dive in and we say, okay, if you want a little more information, Here's some more assessment.

If really want to dive deep and know here are the genomic variants that can be involved in this pathway issue. Here are the environmental factors. You're at the dietary factors, the medications, right?

We really expand and get a lot of more depth and detail in our strategy and analysis section. And there really is something for everyone. If you're an advanced and seasoned practitioner, but you have a complex case and you just want a second opinion and some different perspectives, we have that.

Right. Yeah. my toes in, I just want to know a little bit, getting used to this first before I dive deeper. Then you can read the snapshot notes and still get a really good understanding of what's happening.

Yeah, amazing. I want a dive into the deep stuff. For a practitioner, i'll just take myself as the case study and

maybe other providers will resonate.

I edged my way into doing Dutch testing probably like 10 years ago and certainly like overwhelmed. And you, Dr. Kerry Jones, you guys were so instrumental in me being able to apply that to the fertility patients that we work with.

And now, ten years in, probably a hundred Dutch tests later, I am at that place where I don't even know if there's stuff that I'm missing. What are the patterns that you, someone like you who's so well versed in this, What am I missing from a Dutch test?

And maybe I thought this would could be helpful for practitioners that specialize in fertility. It could help for patients just to hear how we think about things from this whole holism naturopathic perspective that has to do with their hormones and their fertility So I want to serve both audiences and I'm coming at it from this, what are we missing?

What are these patterns that we could potentially be missing out on that are recognizable to experts like yourself that, we can benefit learning? I think when we're building out these pattern.

It's really, it's a relationship, right? So we're, when I was building up the sex hormone patterns, I start with progesterone for cycling women or for women in general.

But especially for our fertility cases, want to know what's projesteron doing in the luteal phase. And we compare that to their estrogen. And then we look at that estrogen detox, and so we're looking not just at a ratio of how much two hydroxy is favored over four or 16, like these intermediates of phase one detox.

But we are also looking at, okay, not the percentage, but how many of estrogen is moving into a phase 1 metabolite? Are they actually transferring it into that that initial clearance out of the body, or is it really high in circulation?

And they have beautiful two hydroxy, but it's only a quarter of their actual estrone and circulation. That's a problem. They're not biotransforming it through phase one detox, right?

Or that's recirculating it. And so we call that out in our patterns. There's so, there's poor clearance here, a poor initial eye for clearance. And then we call out the methylation ratio.

And the methylation is really, it's what we can capture in urine. It's only reflecting phase two for the catecholestrogen. So that's the two in the four hydroxy.

We are seeing that ratio and then being able to gauge, is it too low? Is it to high? These are all our Goldilocks. Or is that just right? And how does that compare then to all this other information that we're bringing in.

And so it's looking at 12 different relationships, right? And then testosterone is brought into the pattern as well, in addition to DHEA, and of course, the metabolites.

So the androsterone, 5-alpha-androsanediol, etiocalinol. All of our intermediates. Totally. When we're looking about what could be missed, I think some patterns that often do go missed.

I do think that looking out that initial transference of estrone into phase one metabolite, I would hear a lot on consultation. Their true hydroxy is 95% preference.

It looks great for hydroxys nice and low. This looks beautiful. Methylation is looking good, it's balanced. I don't think I need to worry about detox.

And yet their estrogens are looking at high end or even above that kind of ideal target luteal range. Actually, we need look at that idea of rules of half.

There's half of estrone getting biotransformed into, if you add it up to 4 and 60 hydroxy metabolites, those come to

half that estron or more, right? And if not, what's going on there?

Do we need help? Is it getting recirculated because of porphase 3 detox, which we're not capping the stool, I think, but elevated beta-glycoramides. for example, and do we need to do some further investigation there?

Do they just need more improvement through phase one by reducing refined sugars in the diet or reducing alcohol? Is that a problem for them, right? There's still maybe some areas or increased fiber, increased fish oils, decreasing inflammation can help that transformation.

So I think that's one that I'll often see skipped because it's easy to see the patterns look great. The pie chart looks beautiful, the other one I would say gets Like, the low-hanging fruit with fertility is looking at the progesterone-estrogen ratio, I would say.

And, you know, when projesterones low luteal, even below lutial range, that's like half the cycle. That's a bummer, right? Like we need to optimize that projesterone.

We need really make sure estrogen is in balance.

Estrogen Detox, 3A4, and Environmental Influences

But another one that I think, and even if estrogens don't look too high, but patients are struggling maybe with estrogen-dominant symptoms, is that 16-hydroxy metabolite is very estrogenic as an intermediate.

It's not nearly as estrogenac as estradiol. We do want to take that into consideration as well for both our fertility patients and just women's health in general.

Because if you have a patient and they're like, maybe their progesterone does look pretty good and it is balanced with that estradiol. And maybe we're not too concerned on the estrogen dominance front, but yet here's a person that's struggling with fibrocystic breasts and bloat and a lot of menstrual headaches.

And there's 16 hydroxys off the charts, right? And that's an estrogenic intermediate. We've got to address that. And we don't want to miss that, and we wouldn't see that in blood.

we would see in saliva. So that a nice one that again, you don' want miss, but could easily be overlooked. Those are good. those are great patterns. When, and this may not be exactly the pattern that you were talking about, but I've seen lately like a higher E3 than E1 and E2.

So sometimes they even look like they're super low, then they are over converting to E 3 and they have high 16 OHE. Curious about that. Yes, absolutely.

And I agree. I do see that one pop up a fair amount. E3 and 16-OH-E1. e3 is technically, chemically speaking, 16 OH-e2. So these are the metabolites. They're phase one intermediates of estrogen through the CYP3A4 enzyme.

so they're both partnered to that path. The 6-3-A-4 is a powerhouse enzyme, right? It's responsible for over 60% of metabolism of a lot of our environmental and medication toxins.

Oh. So it's the 3A4 and 2D6 that are our big powerhouse pathways, right? Yeah. Just got the chills. I know where this is going now. When we're looking at why an enzyme might be upregulated, we have to look at the promoters upstream for that transcriptional response.

And with 3a4, because it such a power house and it is involved in so much, there can be medications that promote more transcriptional activity. Upstream, there could be medication that suppress WC really low, that could medication as well.

But there's med involvement. There can supplement involvement, St. John's Wort is actually a very potent promoter

of the CYP3A4 enzymes. And this is why a lot of especially antidepressant meds say, do not take it, right, with St Johns Wort.

Because not because of serotonergic influence of St Johns Wort necessarily, it's really because St interfering with the ability to get the prodrug, which is the active component of that SSRI.

And so that's like- Problematic. That's a little problematic. But if you're exposed to a lot of like xenoestrogenic, polyaromatic hydrocarbons, misphenols, these are things that require that CYP3A4 among other enzymes to be active, and they're going to increase transcription so we can get them out of the body and taking with it the estrogen as well.

But you're seeing environmental, especially, you know, estrogens, this upregulation of both the 1B1, the 4-hydroxy, but also the 3A4. And I think that one can get overlooked sometimes.

One of my biggest things to shout from the rooftops is do not suppress that enzyme preference for 16. Yes, it is estrogenic. And yes, we want to make sure we have balance, but don't get balanced by inhibiting that.

Because it, is upregulated likely for a reason and it may need to be to pull out our toxins or other exposures. That should become more toxic. Interesting.

Have you seen it upregulate at all with like too much iodine or hidden sources of iodide that maybe we didn't compensate for? Absolutely. I think so thyroid in general, over conversion of thyroid can definitely up regulate the transcription of several of our enzymes.

Under active thyroid can actually be a problem as well, but more for the reduced activity for CYP3A4. Underactive thyroid actually increase 5-alpha reductase transcriptional response.

That's an interesting feedback to try to Yeah, so that, if you want to jump to that pattern, the 5- sorry, say that enzyme again. The 5 alpha reductase.

That one is often like feeding, like the thyroid and PCOS picture kind of feed each other. And is it that through that enzymes? It can be partially through the enzyme.

Right? Progesterone actually is a big one for thyroid as well. Pro gesterones supports thyroid conversion and thyroid balance. And so when women with PCOS, they don't ovulate regularly.

There's tons of follicles, but they never mature any one of them with any regularity or success. So the progesteron overall tends to be pretty low. If you don't have a progesterone, you make thyroid, right?

That's a big one. And so that's more of the trigger for that thyroid relationship with PCOS. So when we talk about the genomic factors with androgen dominance and PCO risk factors, the SRD5A1, which is the 5-alpha reductase, that one can be upregulated just genomically, right?

You can have polymorphisms that increase preference for that pathway, and that is often associated with ECOS. It's driven by insulin. And so I think the insulin is a factor for that pathway.

Oh my gosh. Okay. Yes. But yeah, I mean, thyroid and PCOS goes so hand in hand, but I can get the progesterone more so that's driving the thyroid issues.

Do you want to circle back to the 3A4? Because the other feature of the Estriol and 16OH, these aren't catecholestrogens, so they don't methylate. So methylation is beautiful.

If not like really high, they're like kicking out all the 2 and the 4. If the 16 and the S3, all the you want to need to, they're primarily bile conjugated and excreted out in stool, pretty direct.

And so it's sulfation and glucuronidation that you really want make sure is intact if you're seeing those build up. So again, any time you are working with metabolites of estrogen through phase one, support by reducing things that could increase that transcriptional response.

A lot of that is decreasing alcohol, decrease in environmental estrogenic exposure. And checking in on their meds because they could be on promoters, right?

And not that we would want them off of those, but that could pulling that 16 through. And then really making sure that they have good gut health, that their pooping every day, they've got to get that out.

They're really ensuring that there bile is conjugating in a healthy way. So supporting bile, supporting stool. checking in on their gut health potentially, making sure that they don't have elevations in beta-glucuronidase or opportunistic bacteria that could be augmenting their estrogen clearance.

Sorry, I wanted to work. Yeah, that's good. I want to loop back around to 3A4 also. We see that pattern. E3 is high, 16 is within range, and then two is maybe lower within-range, then would we still try to have more of that estrogen clear out of the CYP2A1 pathway?

Endometriosis, Phthalates, and Targeted Support

So, with the idea of adding DIMM or something to upregulate 1A, I mean, yeah. Yeah, that's not my first approach. Always work backwards. Work with the gut first.

Because if you're pushing phase one, I think it can be a knee-jerk response to want to throw in dim when there's estrogen dominant symptoms, which becomes dim in the stomach.

But I there is that knee jerk response, to say, oh, let's just give them the dim. And wrong, but it cannot exacerbate estrogen symptoms for somewhat for, actually, in my experience anyway, a lot of women, because if they can't, if their not getting it out, fully, right?

Then you're just pushing it through this one phase, and it's still going to pool, it still gonna be a problem. Really, It's more avoidance of the things that could be pushing negatively through the other two.

So the three or four and the one A1 or the 1B1, that B isn't bad, but that we're hydroxy, we really want to keep low. That one's upregulated by polyaromatic hydrocarbon.

I will throw this out too. So smoked and charbroiled meat products and cigarette smoke, and even hydrocarbons in the environment. People who live in really densely crowded cities and get a lot of that exposure.

That's also upregulating SIP3. Yeah, can do both. We want to see this, we want remove as much as we can. And if you're living in a city, just clean up the air that's in your MVF space, in that case.

Right. Got an air filter, yeah. But yeah, you really want take away the things that you can that would be maladaptive, increase the things that are protective.

So fish oils are great for increasing 1A1, so 2-hydroxy production. Interestingly, rosemary, great, for pushing 1 A1 without augmenting estrogen and creating push into 2 hydroxy, right?

It's more of a nourishing way to go that the 2 Hydroxy way. Increases fiber, right? Making sure that methylation looks good, that sulfation and glucuronidation are working and then making sure really ultimately that they're pooping every day.

Start there. Yeah. That's awesome. Awesome. But yeah, I think those would be the big ones. I would see sometimes with providers who, because grapefruit is a big inhibitor of 3A4.

This is why a lot of meds also say don't take with grapefruits because it inhibits. And that can be, I've actually seen providers where like because they are getting too much 16 and we want to push it more too, we're giving them a little bit of grape fruit every day.

I think we want to embrace N3A4 is working well. We don't want it to suppress its response because it's likely working overtime for a reason. And then we just complement and support the other downstream metabolites and pathways.

Check the cells from oxidative stress using our Nrf2 promoters, using free radicals, scavengers, antioxidants, making sure glutathione, all those things.

Yeah, lovely. So we talked a little bit about estrogen and progesterone disharmony. We talked about these estrogen metabolism pathways. I'll just ask you, because I have my own theory, I don't know that anyone has said yes to this.

But I have found that a lot of women with endometriosis don't have classical estrogen dominance like I was taught in school, but really repeatedly I've seen the 4-OHE.

4 OHE is the one that's off the charts. Their other estrogens are usually low, and then they're not metabolizing through the other, so just the 4-OHE that's elevated.

And that, it's always a head scratcher when I see it, then I'm like, I am sorry, but you need to go get worked up for ENDO. And like 95% of the time it is spot on.

So I don't know if there is anything too scary. That's a really interesting association. I do not know that it was established as a culprit of Endo. I do.

Endometriosis, contrary to what I was taught too, is not an estrogen dominance condition. It is worsened by estrogen dominants for sure, right? If you have high estrogen, you're going to make the symptoms intense because you had endometrial tissue outside the uterus, so all of that tissue would get that response for estrogen.

So I actually going over a review article very recently. Because I'm like, just so fascinated. We live in a horribly toxic world. I mean, it's so fascinating to find out what the Xenoestrogens have on so many hormonal concerns.

One of them actually is endometriosis. So exposure to Xeroestrogen in utero is broadly correlated with risk for endemetrioses as an adult. Did I see somewhere that also phthalates specifically correlate with endometric?

Specifically the pthalates as a Xenosteroids, so it is a hormonally estrogen mimicker. Yes, and phthalates are everywhere. They're in our perfumes, in lotion, when I make that.

Oh, that's so good. It really is one that I think is undervalued, but it is strongly correlated with endometriosis, those exposures. And then it's really the retroverted endomytrial tissue, right?

Instead of being for developed, fully out into a nice, external flow, it's the reverse flow.

Cortisol Metabolism and the Cortisol Awakening Response

And that's where that endometrial tissue ends up in the perineal cavity. I had this one case of it in school, which wasn't my case. It was a case study of a gal who had endomeutrial tissues in her nose.

Every time she menstruated, she would get a bloody nose, right? She'd get epistasis. You can go anywhere, but it is most likely, most commonly, in that the pelvic region.

and it will be wrapping itself around the flow pitot tubes, around ovaries, and its just the external side of that uterine tissue. So any time you get an estrogenic response, proliferating, right, and causing problems, sorry, causing pain

and definitely fertility becomes a concern.

But because the phthalates can increase are also associated with fire for hydroxy production, I could see that connection. That's interesting. I think makes a lot of sense.

I don't like, I just kept seeing it and I was like wait, you have Endo. Okay. You also have endo you too. And I'm like. Wait, all of them have had high for Keith and.

Yeah. If there's anything to that I have yet to find a study on it, but at least it makes it direct association. I love it. I loved it, you just made sense of this theory.

Sure, on case study. Yeah, yeah, I think that would be so valuable because honestly, so many women come with endometriosis type symptoms, but they've never been worked up for it data.

They just internally are like maybe I have endo, right? This fear thing. And laparoscopic surgery is not something you want to take lightly. So they're always like, I don't know, what can you do?

Can you figure it out? And I'm like we're going to do a Dutch test and then we'll see. And yeah, and this is my little hack to say, yes, more testing or no, you're probably okay.

Let's work on other stuff and then you can still save the testing for later. If your symptoms don't get it. And I will, I'm going to shout out, because the other thing that Endo Access does, so we are a tool to help evaluate complex hormonal patterns.

Starting with the Dutch, but expanding to CRM and expanding other tests as well to really enhance that story. But the other big thing that we're doing is customizing formulations based on these, right?

So that providers don't have to scrap and search and pull ingredients in this product. And it's like the right dose. So I'm going to have get this project, I don' really care for these other stuff.

I like, yeah. We give you what they need for that pattern. And for hydroxy in particular, one of my favorite blends, we're using this beautiful Nerf 2 promoting blend of Trubroc, which is glucoraphanin with mustard seed, and which has myrosinase to really help optimize sulfur effects.

detecting that oxidative stress of poor hydroxy. Remember, for hydroxyl, the big issue is that when it doesn't methylate, it goes down the quinone pathway and becomes a three, four esterine quinones.

And those are what result in those DNA addicts that over time can lead to oxidate of stress, cellular change, and even cancer risk. Right. That's another interesting feature of endometriosis.

There's that increased risk for endomitrile cancer, which again, would correlate with for-hydroxy, right. But with the chlorophane, it enhances phase two clearance and supports.

It's a nerve two regularly, so it uncouples nerve from the KEEK protein to really help improve the production of glutathione, catalase, and SOD so that we have these potent free radical scavengers to suck up all of that quinone response and repair DNA and make sure that were structurally sound.

And so we had this beautiful blend with the Trubrox, glucoraphanin and morosinase. And then it has a little pomegranate. It has EGCG, so green tea and CoQ10.

and it's just this. Beautiful. I love this combination. it is great for endometriosis. That's protecting those cells. Great for hybrids, which are another one that can be really promoted through elevated 16-hydroxy in particular.

But yeah, that's a neat formulation targeted to that path. I think this is another fun feature because of kind of that understanding of what enzymes are involved in metabolism.

The blends are really targeting the enzyme. So whether we know if they have a polymorphism or not, if there's a dysfunction in a pathway, we known that enzyme needs, right?

That pathway needs help. And so we target that with not the nutrients necessarily for hormone, but for the enzymes. Yeah, yeah, just a quick aside. Cool.

Yeah. I love it. Okay, so can we jump to cortisol? And I feel like that's another big fertility specific area. So I'm curious if you can just share like, things, patterns that are outside of the realm of what most practitioners know, which is, oh, if it's within the range that Dutch test gives, it is good, you're good.

But the metabolizing of cortisol, the metabolism to cortisone, all that stuff that is just so nuanced, I find. Absolutely. And yet so important and critical that we don't miss.

If I think back to school, the way I was taught to look at the adrenals was to run an ASI, an Adrenal Stress Index. And at that salivary test, it's looking at those P points throughout the diurnal curve of free cortisol.

Then we make assessments off of that. I remember at school thinking, man, I'm just crashed. And then I wrote a dutch test and I realized, no, I'm just a rapid metabolizer.

I shouldn't be taking anything. And I'll get to this, but so the free quarters were so ingrained to just look at that free diurnal. and that is important because it's showing us in the moment, what is their output.

to a universal stressor to waking up in the morning? And then what is the response to stress throughout the day? Are there stressors that are spiking them when they should be starting to decline or not?

Right? So that's that diurnal rhythm in assessing those key points. That's the free cortisol. It's only one to 5% of cortisol at any given time when you're looking at those measurements.

Metabolized cortisol, this is 90% percent of all the cortisol that was made on that day of testing. We have to look at the two because it's the relationship between those that has the biggest impact on health and where we want to treat, right?

If you see someone who has beautiful free cortisol, they got this great diurnal rise, so they wake up in the morning, are getting that nice spike in cortisol.

It's within range, coming down in afternoon, it is nice and low at night, and yet their metabolites are like flat like. There's a problem with clearance, there's problem and potentially total production.

That free cortisol, that graph was only 5% at most of the free cortisone at any given time. Here we're seeing 90% is not looking good. What's the discrepancy?

And more often than not, we'll see that pattern with hypothyroid with low, specifically low cellular free T3. And so it goes beyond just looking at a TSHT4T3, you want to look at the reverse T three as well.

How are they incorporating and utilizing that thyroid? And doesn't need help because thyroid and adrenals, they are interconnected. We need to treat both.

So making sure that we're evaluating and addressing like what's going on. And you know, so often I'll see providers like just look at the stress pattern and not at their metabolism.

They'll base their treatments off of that. And then, for example, if it's say they have a really high stress pattern, they're overshooting their morning cortisol, or they are shooting up in the middle of the afternoon, but metabolism is low.

And you're not addressing that, and you are not address liver health, you aren't addressing adrenal support and

just like that the nutrients to rebuild just adrenal function in general just target phosphatidylserine and magnolia and chamomile and the things that would call them.

What can happen is you can shut them down. both sides, drop on both ends, because now you didn't treat the root. You didn' treat, the fact that the metabolites were compromised, so there was something happening.

So I think that's a really big thing to remember and what we catch, what were looking at is that relationship. And again, conversely, you see this flat line, not necessarily flat lines, see really low free cortisol, and then metabolite cortisol is like through the roof.

That person's got a lot of exposure to cortisol. That's a lots of inflammation in their bodies. Their liver is exposed to all of that cortisol, that can increase that.

In the metabolite. To be a metabolite, that was produced in circulating cortisol that had to process through the liver. So that's a lot. And then if you were only looking at the free cortisol and we're like, oh, but they're so depleted, we've got to get the- Then you give her more.

Hydrocortisone. You're putting kerosene on a burning fire. Yeah. It's only want to treat the HPA response. We want it to calm down the inflammation in the body.

That's like a very prone trait. That's a high excess T3 pathway, right? To get it out of the body. The checking in on thyroid in that case too, opposite problem.

And then really addressing, yeah, these people are going to feel exhausted because they have no diurnal response, but they're kicking out a lot of cortisol.

So they are exhausted, inflamed and anxious and agitated. These are people where support that inflammation of blood sugar, get them on adaptogenic herbs that are supporting that free rise a little more sufficiently.

And they're not hypertensive, licorice is actually a great herb here because it slows metabolism of cortisol while also augmenting immune function and reducing inflammation.

Is that, so that like over-metabolizing of the cortisol, is that a need that the body has because cortisol is anti-inflammatory? So is too much inflammation, we need to have more cortisol to decrease inflammation?

Or is it the cortisone metabolizing, over metabolising is causing more inflammation. No, the Cortisol is produced because of inflammation Right, yeah.

So the signal from the body to the brain is some sort of inflammatory trigger, like usually a cytokine, IL-6. A big reason why we might see this over metabolism is actually excess adipose tissue or more metabolically active kind of fat tissue.

Adiposed tissue releases a low-grade level of IL6, all the time. This is an inflammatory cytoking. And that's going to be in circulation. That's gonna be affecting our blood vessels, right?

It's also gonna crossing into our brain, intoing our brains, hey. Got some stuff here and the brain's kicking out CRH, right? Kicking out ACTH, knocking on those adrenals saying, we've got to make some cortisol out of those tissues.

It's a unique endocrine gland, it misbehaves sometimes. No fault of its own, its trying to protect us, that's evolutionarily doing the right thing. It will actually sequester that cortisol for its own metabolic purposes and actually pull cortisol out of circulation and over-metabolize it.

It's not that they aren't making cortisol, it's just that it is getting metabolized too efficiently, too quickly. But it there, its affecting the body and that means that there is inflammation present.

So the metabolize cortisol is high because there was a response somewhere in the. Could be the fat tissue, could be pain. chronic pain, joint pains, muscle pains.

Headaches. It could be another one is more like environmental stressors or even so 60% of our immune system is regulated by our guts. A low grade dyssiosis can be a factor there.

Using Endo Access and Closing Remarks

That's just driving up that inflammatory response in the body. Yeah. I think of it, the fire hose is wide open. But they can kind of just get it out, get naked it.

leading what we have in the moment for our receptors to be like, okay, let's stimulate. So you're lacking a nice. Right. Yeah. It's basically the fires are so intense compared to I need this so that I have energy.

so it's like putting out the fire is more urgent than I haven't need to function in my life. That's not keeping it around long enough for a brain to utilize it and get that cortisol awakening response to get all the benefit from that rise to The neurotransmitter upregulation is still calling dopamine response.

Yeah. And that's where we get lousy brain and achy and agitated and tired. And they will say, that's the cortisol awakening response. If they agree, and that is the ideal, it's okay.

They agree. they're making and utilizing cortisol efficiently, right? Making it and clearing it. if you don't get that rise in the morning. And so this is really something that you can determine in a salivary car.

So this would be like the Dutch plus. so you use the urine for metabolism, but you are looking at the in-the-moment production of cortisol using saliva.

Much more sensitive marker for that. And so watching that, what they call the car, the cortisol awakening response, before you even open your eyes, right, you take this first salivary sample.

So you're out, but you haven't gotten out of bed. You put this little swab in your mouth, your collecting all that cortisol should be nice and low, because you hadn't had a response yet.

But then you open you eyes. Your getting sunlight, hopefully. Very importantly. Active and so cortisol shouldn't be rising significantly, 50 to 160%. in that 30 minutes, and we can see that within a few minutes.

We can that rise starting. So we want to capture them at the 30 minute mark. And then we wanna capture the 60 minute to see, does it keep rising? Or does come down?

Does it come too fast? Are they overutilizing or not sustaining that cortisol? But the importance, the really important part is that zero to 30, right?

Waking for 30 minutes. If you're not getting a rise of 50 to 160%, that can lead to all sorts of dysregulation to your immune system, to fertility, HPO response, your diurnal.

All of our body is very diurinal in its activity. And if we're in a good rhythm, and that could be seen by that cortisol in particular. we're not going to have that same fertility response.

That would be the way to describe that, but yeah, infertility can be a risk at low car. Yeah, absolutely. We spend so much time trying to optimize the diurnal response because that's going to be the foundation for fertility hormone regulation.

So everyone's so focused on those. And if we get the Foundation, then we might have a really great house to build. Yeah. Exactly. Yes. It's working on the root, on a deep.

foundational work, that then everything else just becomes easier. Everything else happens. And then we die. Wow, everything's so much better. I'm lying in the morning, like, getting outdoors, for sure.

Yeah. Yes. So important. Just get that body moving. And I think movement throughout the day here just to keep that circadian regulation going. We don't want to be too endearing.

The other thing that's interesting with the cortisol rise, sleep. Right? Like I get patients all the time. Often we get this lungey car over time because people aren't sleeping well.

But it's almost a vicious cycle because If they're not sleeping, right. So if you're knocking, you know, so if they are not asleep and they aren't getting that nice response in the morning, they don't get that rise, that sharp rising.

Cortisol and adenosine are complementary in their brain. They bind to the same receptors. cortisol blocks adenosine from binding and making us tired. so we feel really energized.

Coffee does the thing, which is why we get a little perk when we drink coffee, blocking adensine. But we should as cortisol goes down, we shouldn't be getting more and more adenosine binding.

We should be feeling more, and we're groggy, being as stimulated as is produced or with norepinephrine surges. And so the more noraphy we get, which happens with cortisol, right?

The more active we are, the cortisol response we'll get. The better our adenosine production and the better response at night. So I will have patients all the time that are like, no, I need to work on sleep, not my car.

I don't. No, you actually need that because that will help you sleep. And so I think that. Yes. Oh, that's so good. That car, so important. So important and car is very interesting.

It's. There's some research saying that CAR is actually the biggest predictor of lifespan than everything else. So, yeah, it's like a pretty powerful necessity that our body has to make that cortisol in the morning.

Very important for all of you non-practitioners that are trying to get pregnant. Optimize, go get some sunshine, do some jumping jacks like Dr. Liz did.

Get that, get, if you're dragging and you need coffee to wake up and your brain is still off before your coffee, like those are all the people that need that stimulation of cortisol awakening in the morning.

That programs the body for the rest of the day. If you don't get that awakening, you are tired all day long. Yeah, absolutely. Yeah. Go for the walk in the morning.

Make that part of your routine. I love it. To drop my child off to the bus stop in morning because it gets me out and it's 15 minutes in sunshine. And he's, mom, can you be a car rider?

Can you drop me off in a the car? I'm like, no, this is my time. This is the time I get sunshine and all that. Yes. Thank you so much for being with us.

For practitioners that are listening, how can they get supported with ENDO Access? Where do they go to get started? Our website is www.endoaccess.com.

You can sign up to be a provider. So yes, look for us and do access.com. It's free to signup. There's no commitment on your end to play around with us, upload some Dutch reports, read some reports.

See what the input is. Really what we want this to is a second opinion type system. You just want to run it by another medical professional. We get an automated version of that.

Then you get access into our catalog of all of our amazing supplements. We have 26 supplements being launched

along with the programs. Lots of really targeted, in my opinion, but a beautiful but very targeted blends to address not just the hormones but that enzymatic dysfunction that's leading to these hormonal imbalances.

I love it. And for those of you listening in, I am sure you can already tell Dr. Liz's brain is amazing. Just amazing! So the value, for you that don't know, Dr Liz is a lot of the brains behind endoaxis.

So when you see that report, you could be like, whoa, this is the creator right here you guys. And Dr. Guy is also really brilliant and really smart and has contributed so much to this.

Yeah, like amazing minds behind this is what I'm getting at. Yes, it's been a great, amazing experience and amazing team that I've been able to work with and collaborate.

Yeah, we're just, and the beauty of this is it's just going to continue to advance and grow from here. We are not limited. If you're going through, this was my other, just not public service announcements per se, which is my little plug.

Give us feedback, give us insights. So we want to know, how to make this really good and good for all providers. Yeah. Use us, check us out. And just know that we're going to continue to grow in advance.

I love it. Thank you for joining me today, Dr. Liz. And for those of you listening in, we'll see us again very soon. Take care and have a blessed day.

Each day is a new opportunity to make choices that empower your well-being. For more insights and strategies, subscribe to our podcast and visit our website, www.doctortalks.com.

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