

Episode 131

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Dr. Andrew Rostenberg, DC

You can live essentially a normal length of your life, even with dramatically lower levels of testosterone or estrogen. If you lose your cortisol levels, you're going to be dead in about 72 hours. So it's like, what's the stronger one?

00:00:12:23 - 00:00:38:08

Dr. Jaclyn Smeaton, ND

Welcome to the DUTCH Podcast, where we dive deep into the science of hormones, wellness and personalized health care. I'm Doctor Jaclyn Smeaton and chief medical officer at DUTCH. Join us every Tuesday as we bring you expert insights, cutting edge research, and practical tips to help you take control of your health from the inside out. Whether you're a healthcare professional or simply looking to optimize your own well-being, we've got you covered.

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Dr. Jaclyn Smeaton, ND

The contents of this podcast are for educational and informational purposes only. This information is not to be interpreted or mistaken for medical advice. Consult your health care provider for medical advice, diagnosis and treatment. Hi there! Welcome to today's episode of the Notes podcast. Now, as you know, the DUTCH Test we really focus in on hormones, stress hormones, reproductive hormones.

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Dr. Jaclyn Smeaton, ND

But some of the additional markers we have on the test do look at additional elements that are related to that experience of hormone patterns, and those include some of the things that are on our OTC panel that are related to neurotransmitters like dopamine, serotonin, norepinephrine, and epinephrine. And so today's guest is actually a specialist in those neurotransmitters. He's a chiropractor by training, but uses the DUTCH Tests with patients that have high and low dopamine to really help rebalance neurotransmitter.

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Dr. Jaclyn Smeaton, ND

So it's a really unique perspective on how to use a DUTCH Test. And I learned a lot from today's episode. And speaking with our guests. The guest today is Doctor

Andrew Rostenberg. He is the clinic director of Red Mountain Natural Medicine in Boise, where he integrates chiropractic care, applied kinesiology and functional medicine to really work with patients to uncover root causes and help optimize their health.

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Dr. Jaclyn Smeaton, ND

He has a ton of experience in genetics. He's the founder of Beyond Meat, MFR, and author of Your Genius Body, reflecting his pioneering work understanding Methylation genetics and lifestyle based interventions. He's got experience treating everyone from elite athletes to those with complex autoimmune and neurological conditions. It really emphasizes personalized care that is focused around supporting detoxification, hormone balance, gut health, and brain optimization.

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Dr. Jaclyn Smeaton, ND

And we actually touch upon all those topics in today's podcast. So if you're a listener who is a clinician who's working with patients with mood challenges, or maybe just a patient who experiences that yourself, I think you're gonna like today's episode. So let's go ahead and dive in. Well, Doctor Rostenberg, it's really great to have you back on the podcast.

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Dr. Jaclyn Smeaton, ND

Thanks for joining me today.

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Dr. Andrew Rostenberg, DC

Thanks so much for inviting me on.

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Dr. Jaclyn Smeaton, ND

So I'm excited to talk to you about something that we haven't really chatted about on the podcast before, which is really the application of the DUTCH Test in light of like things like neurotransmitters, which are related to mental health and how our brain work and our stress responses, and we do have that. We do have certain markers on the DUTCH Test to cover that, but it's not something that we chat that much about.

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Dr. Jaclyn Smeaton, ND

But tell us a little bit about your thoughts about neurotransmitters and kind of how they apply in your practice, just to kind of kick us off and give our listeners a framework of your point of view.

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Dr. Andrew Rostenberg, DC

Absolutely, Jaclyn, thanks. You know, I people don't feel well. They go to a doctor. The feelings we have in our, our mental landscape is dramatically influenced by neurotransmitter levels. My own personal history as a not so healthy child, young adult, teenager and everything. I mean, I had neurotransmitter issues myself as part of my part of my interest.

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Dr. Andrew Rostenberg, DC

And so early on in practice, I dove into this subject and one of my teachers, doctor Bob Rakowski, he's out of Houston. He was a big aacé and, functional medicine doctor, for for a lot of years to turn around the country and everything. And I got to learn a lot from him. And he gave a model of the bell curve, that you could really understand human physiology on a bell curve.

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Dr. Andrew Rostenberg, DC

We could, in other words, another. You know, there's such a thing as too much blood pressure. There's such a thing as too low blood pressure. There's being, obesity on one end and being like, you know, psychokinetic and to to the under having not enough body fat on the other end. So really every, every process that we look at in clinic is a bell curve.

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Dr. Andrew Rostenberg, DC

And so, neurotransmitters always interested me because of my own personal health challenges and like, stuff in my family history. And, and lo and behold, the neurotransmitters fit this, bell curve model very well also. So that's something I'm excited to kind of, share with you guys and show you how the DUTCH Test, is a tool that I use to help figure out the where they are on the bell curve and then.

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Dr. Andrew Rostenberg, DC

And then what to do about it. So.

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Dr. Jaclyn Smeaton, ND

Well, let's start with a little bit about understanding how neurotransmitters fit into that bell curve picture. I really like that model. Tell us a little bit more about that.

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Dr. Andrew Rostenberg, DC

Well, it's first of all good to have a model that we can visualize because so much in functional medicine is invisible. It's like under a microscope. It's inside of the dark recesses of our tissue, you know? So it's not just hard for patients. I think it's challenging for practitioners. So anytime we can pull on a thread and connect something that's simple to look at on paper and projected back into, like the clinical picture that we see, it's really useful.

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Dr. Andrew Rostenberg, DC

So in the realm of neurotransmitters, I'll use the I'll use this analogy of like the vagus nerve. So I've been recently reading the Polly vagal theory by Doctor Stephen Porges. Incredible book. It's it's awesome. Anybody out there interested in the vagus nerve? I'd say go jump into that. But he points out that 80% of our parasympathetic nervous system comes from just one nerve.

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Dr. Andrew Rostenberg, DC

So the vagus nerve is responsible for 80% of our patients. And in school, because we get multiple choice questions, we learn all this stuff. Nobody explains to us that, yes, there's like dozens of neurotransmitters, but the vast dominance of our consciousness is really controlled by dopamine. So in the same way that the vagus nerve controls this one, nerve controls this whole system, dopamine is really rules the roost in terms of our treatment consciousness.

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Dr. Andrew Rostenberg, DC

So it has this massive influence, on our whether we're going to be depressed or anxious, you know, have food cravings, have high risk behaviors, be combative with our parents as a child or whether we're going to be, have low stress tolerance as a grown up and, start to have even psychiatric effects of just living our life.

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Dr. Andrew Rostenberg, DC

So I find it fascinating, that dopamine has such a big influence and so dope. The dopamine bell curve is basically the the model I'm introducing here. And estrogen and dopamine have had is absolutely, an amazing relationship. And that's where the DUTCH Test and, you know, all the education you guys are doing comes in handy because you can you can bring in the hormones and the neurotransmitters, you see where they connect.

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Dr. Andrew Rostenberg, DC

And so you can you're not just dealing with neurotransmitters. You're also having to appreciate hormone levels in order to balance brain chemistry.

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Dr. Jaclyn Smeaton, ND

So tell me a little bit more about the connection between dopamine and estrogen or estradiol.

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Dr. Andrew Rostenberg, DC

So fascinating concept. And again, please, for all of those of you listening, you know, this isn't like I'm not I'm just articulating the dimorphic differences between men and women, okay. And like, chromosomes, there are some physiologic differences that that, that play out over our lifetime. So when estrogen is elevated it is also going to elevate dopamine. So the way to understand estrogen in terms of our mental landscape and then clinically with neurotransmitters is estrogen is an incredible inside depressant.

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Dr. Andrew Rostenberg, DC

It's amazing. It slows down the metabolism of of dopamine through Comt. And it also slows down the metabolism of dopamine through email. So we're we're looking at estrogen as like a it's modifying the metabolism of our neurotransmitters. And so so when dopamine is low or in short supply, an adequate supply of estrogen tends to lend support to dopamine and get it off the low end of the bell curve into the middle, where our brain and our frontal lobe is just working really well.

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Dr. Andrew Rostenberg, DC

But the flip side of this, if we extend this logic out further, you know, we have so many women especially, but increasingly more men who are estrogen dominant. Not just the dials that you mentioned, but, you know, the xeno biotic estrogen is the estrogens in our products and our environment. And so those estrogens, it kind of an additive effect.

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Dr. Andrew Rostenberg, DC

So if you have a normal dose of an antidepressant, you get a positive, you know, you get a change in neurochemistry that can be beneficial. But what if on a DUTCH Test, we see someone whose estrogen is 50% higher in the upper limit of normal, 50% beyond the upper limit of normal for estradiol? Now you've got like a supra physiologic dose of an antidepressant that clinically will be dragging that dopamine level way past the optimum part of that bell curve.

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Dr. Andrew Rostenberg, DC

What are the consequences for us as clinicians and our patients? So I think it's good that we're talking about this because it's it is affecting, our wives and daughters, mothers every you know, it's affecting men. But certainly to more to more an extent it affects women.

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Dr. Jaclyn Smeaton, ND

Yeah. I mean, when you describe that if it's pushing the dopamine higher, you would think that would have an overall beneficial response. But with your bell curve assessment, obviously you're what you're seeing. And what we see clinically is that when estrogen gets too high, people don't feel so great, due to many factors, not just the dopamine reaction.

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Dr. Jaclyn Smeaton, ND

But can you talk a bit about that?

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Dr. Andrew Rostenberg, DC

Yeah, I think the idea would be it's not a linear relationship going back to these other

models that we touched on, like it's not a linear relationship that says somebody with hypertension, maybe they're 160 over 100 that the doctor says, we need to lower your blood pressure. Well, he doesn't mean in a straight line until it's 70 over 30.

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Dr. Andrew Rostenberg, DC

Like that's a problem. Right. So the bell curve has this physiologic optimum. And the same thing is true of dopamine. We while low dopamine presents a unique phenotype and clinical challenges that we that that are reliably there in almost every case of low dopamine. If we have a patient with too much estrogen who's not able to metabolize it, as you can see on the test, you can see that the C1 t is inhibiting, the movement of that estrogen out there.

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Dr. Andrew Rostenberg, DC

Just that may be missing a lot of those other support nutrients that are so important for, processing estrogen. Yeah. It's not a linear relationship. So, like, you know, people are out there with they're getting their dopamine hit. So we kind of joke about it on social media and you hear people talking about it, but it's not a it's not linear.

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Dr. Andrew Rostenberg, DC

It's not like, hey, if I double my dopamine I'm good. I want to go ten x next time. It's like you just actually fall off a cliff on the other side. So,

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Dr. Jaclyn Smeaton, ND

Yeah. Well, a lot of it is related to the change, right? The way we feel is related to changes and fluctuations. And in fact, the other thing that comes to mind for me when you talk about estrogen and the influence on dopamine, is the tight connection between hormonal fluctuation and mood. And a lot of women report that even within a normal menstrual cycle.

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Dr. Jaclyn Smeaton, ND

But then you think about postpartum, you think about perimenopause and menopause, where you have these even larger fluctuations where we know there's a tight connection there and you know, the data, looking at things like PMS and Pmdd, premenstrual dysphoric disorder, which is kind of a more severe form of PMS. It's so

interesting because what we see, people always assume there must be a hormonal imbalance.

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Dr. Jaclyn Smeaton, ND

But what the data shows is actually oftentimes there is no hormonal abnormality. It's just an abnormal neurotransmitter response to a normal hormonal fluctuation in the cycle. Now, can you talk a little bit about what you see there? I mean, could that be related more to metabolism of hormones or other genetics that get involved? You know, the the, the responsiveness of our neurotransmitters to hormonal fluctuations?

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Dr. Jaclyn Smeaton, ND

Do you have any more insights into that?

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Dr. Andrew Rostenberg, DC

That's a great question and thanks for bringing that up. You know, I so in in clinical experience, in the cases of Pmdd that I've seen and worked on, the general best practices has always been to help these women metabolize estrogen faster. And to your point that it's not necessarily like a gorilla's super physiologic elevation of estrogen.

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Dr. Andrew Rostenberg, DC

It's it's just the way I view it is like these are these are for challenged patients. These patients have challenges in the ICU. And the phase two system are just getting estrogen out. Because what's so unique about female physiology is every seven days, the hormone hormone profiles totally different. So there's so much energy in the background, under the microscope that's being spent for that female body to catch up with, like the timing that the brain and the physiology is asking for.

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Dr. Andrew Rostenberg, DC

So just general best practices. If this is something you see in clinic or it comes in, you know, Monday morning, the general thing that I've seen work the best is really, high doses of nutrients like methyl groups, B12, methyl folate, B6, of course, but a lot of the phytonutrients, the lignans, the things that are kind of the cutting edge, leading edge, you know, phytonutrients because that just changes gene expression and it

helps remove the estrogen out of the body faster.

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Dr. Andrew Rostenberg, DC

But to your point about neurotransmitters, you know, looking at pregnancy is really such an interesting physiologic state. And and estrogen levels at delivery can be up to 100 times higher than the day of conception as is. Incredible. Right? Like. And what does that do to down regulating or up regulating our sense of woman's sensitivity to dopamine? And within about 72 hours after birth, her estrogen is back in baseline.

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Dr. Andrew Rostenberg, DC

So if those if the brain doesn't adapt with its receptors versus the amount of dopamine in that steep rate of change, I mean, that would be an an easy that time of, of life for the for the dopamine system to get out of balance and for symptoms to show up.

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Dr. Jaclyn Smeaton, ND

So. Right. And it's so common for most I'm, I mean, having been a mother myself, I had kind of variable response as postpartum, but it was a pretty similar experience where, you know, Azure milk comes in day to day three. Your hormones are coming down. It can be pretty intense and it resolves fairly quickly. So I think you're right.

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Dr. Jaclyn Smeaton, ND

It is just like receptor reset under normal circumstances for most women. Sometimes things continue and perpetuate. And then of course, you know, we want to make sure women get the support they need when that's the case. But, you know, it is a time of that really intense hormonal fluctuation with progesterone and estrogen, postpartum. So absolutely, a sensitive time as far as hormone change triggering some, changes in neurotransmitters.

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Dr. Jaclyn Smeaton, ND

Add that to maybe not sleeping as well, physical recovery, birth, etc., etc..

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Dr. Andrew Rostenberg, DC

As exhaustion, blood loss, fluid loss. I mean, it's it's amazing what women can go through breeding bring bringing the baby and. Yeah. And it's amazing.

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Dr. Jaclyn Smeaton, ND

Yeah, absolutely. Well, I want to talk a little bit about like the catecholamines markers on the DUTCH Test, HVA and VMA and how that really how you use those in practice. Like, what do they show you about how the body's coping with stress or recovering on a day to day basis?

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Dr. Andrew Rostenberg, DC

You know, it's a really nice marker to have. I don't I don't see any reason why you would ever take that off of the DUTCH Test. Because I hope it stays. Because it's, it's a good marker. And even if you're just a clinician looking at adrenals and you're throwing in the the estrogen, sex hormones, because there's just that added value.

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Dr. Andrew Rostenberg, DC

Because you lump the test together, you know, save your patients a little bit there. But having a little bit of that final metabolism to, to look at is excellent. Because, again, the bell curve model of dopamine is a real thing. Now in research they use a term called the inverted you curve. And I call it a bell curve.

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Dr. Andrew Rostenberg, DC

And you know we they basically mean the same thing. But dopamine has this.

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Dr. Jaclyn Smeaton, ND

Sounds like exactly the same thing.

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Dr. Andrew Rostenberg, DC

That means optimum range, that they recognize like symptoms of low dopamine when you're, you know, when you're looking at symptoms of low dopamine, let's say in an initial visit, doing a workup, you're you're putting your clinical hat on and your patient shares with you that they're sleeping 14 hours a day. They are having severe cravings. The cravings are typically more towards the starches, the carbohydrates, the

sugars.

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Dr. Andrew Rostenberg, DC

You know, they're having a hard time concentrating. They've been diagnosed with ADHD, and these are just the most common patterns. You get these, patients all the time in clinic. And so I'm obviously usually, like most of us, we're talking to patients and beginning that clinical relationship before we have a test in our hand. But what's nice about having those kind of gloomy markers is you just keep it very simple.

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Dr. Andrew Rostenberg, DC

You have a you have a normal range. Every test you ever get right. Every test we've ever looked at in clinical practice is itself a bell curve. There's a bell curve to hemoglobin, to estradiol. So catecholamines are the same way. There's that normal range. And so when they're at the borderline or low you know there's a clinical indication, for intervening there because those patients cannot necessarily they're not going to necessarily raise their dopamine level unless you as a clinician take that responsibility on.

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Dr. Andrew Rostenberg, DC

And that has to do with the fact that we only make tyrosine and phenyl alanine. We don't we actually don't make it. I should rephrase that. So human beings we cannot make tryptophan tyrosine a female element. I find that to be very unique because that that's like the majority of our mono amines and certainly our dopamine system.

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Dr. Andrew Rostenberg, DC

So we're dependent on our diet for giving us enough tyrosine and phenylalanine that would come from the protein, part of our diet. But we're also dependent on our gut microbiome for producing those amino acids also. And what's this is not to get too far afield here, but roundup and the active ingredient, roundup, glyphosate specifically, the reason it kills weeds and kills things that are growing is because it stops plants from making the aromatic amino acids tyrosine signal, alanine and tryptophan.

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Dr. Andrew Rostenberg, DC

So when we are exposed, this whole generation starting around like 2010, to all this

saturated glyphosate food, you're seeing that clinically where those bacteria are getting killed and they're not making it out. So I just point, you know, in clinic, I know you're seeing it because I'm seeing it all the time, but I want to give you guys that confidence to say, okay, if the cattle colony markers are low in the DUTCH Test, it's not just like, don't just breeze over it and move on to the thing that, you thought you're going to find if you're in clinical practice.

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Dr. Andrew Rostenberg, DC

So you get that test back, I can pretty much guarantee you nobody else in health care that they're ever going to see is going to do anything about it. And you might be the only one that makes a difference. So please, learn more about how to raise dopamine in a healthy way and conversely, how to lower it in a healthy way.

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Dr. Andrew Rostenberg, DC

Your patients need that.

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Dr. Jaclyn Smeaton, ND

Do you want to share a couple of the clinical pearls that you have on those?

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Dr. Andrew Rostenberg, DC

Absolutely. So being a big and far nerd, in my career, just, you know, kind of went down that rabbit hole, a lot and, and in a very deep way, it gets very complicated. But what comes out of that are some really good pearls. And ultimately, what's nice about being fluent with in charge of just understanding it, is it has a dramatic effect on neurotransmitters.

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Dr. Andrew Rostenberg, DC

So you you have to see these patients who are coming through your practice. Obviously look at the estrogen. Make sure that, you know, that's kind of a separate discussion in its own right, but it's connecting into to neurotransmitter and brain balance because of the OMT, shared detox pathway. So on the on the low end of the scale, I'll often see women, for example, with lower levels of estrogen, lower progesterone, lower DHEA pools, and lower dopamine levels because they tend to all drive in the same direction.

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Dr. Andrew Rostenberg, DC

And when your dopamine is low, the most important thing that you need to do clinically is provide a source of tire scene and provide a source of methyl groups, that are used in the chemical reaction to basically activate neurotransmitters. So back 25 years ago when methylation just became, you know, something that clinicians were starting to pay attention to and functional medicine, it was one of those like one of the big reasons why it was discussed was with depression.

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Dr. Andrew Rostenberg, DC

And you're like, well, you know, why does this affect depression? Well, because, again, dopamine is the most important neurotransmitter, just like the vagus nerve is the most important nerve for the peons. It's not it's a hierarchy of dopamine absolutely rules the roost. So making sure your patients are getting enough methyl B12 and folate, specifically methyl folate by itself, if you had to pick one B vitamin and one amino acid, you give them a scene and you give them methyl folate, and you will reliably raise dopamine.

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Dr. Andrew Rostenberg, DC

And it can it's so fast. People will come back. They'll save in 48 hours. They felt like a different person. So I love working with loved openly people because I get dopamine from how fast they change.

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Dr. Jaclyn Smeaton, ND

That's cool. You get the benefit. That natural boost of dopamine. That's great.

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Dr. Andrew Rostenberg, DC

Yeah.

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Dr. Jaclyn Smeaton, ND

Now you've talked about, comt a few times and this is a genetic a genetic snap or genetic pathway, that really connects stress chemistry and hormone metabolism. And like the most simple terms. Can you explain a little bit about that, why it's important

and what happens when that pathway is either slowed down or it gets overwhelmed, which can be genetic.

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Dr. Jaclyn Smeaton, ND

It can be lifestyle related. I just want to kind of give because you talked about Comt a few times, and I want to just make sure that we, our listeners kind of know what we're talking about there 100%.

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Dr. Andrew Rostenberg, DC

Yeah, I think metaphors are really helpful when you're talking about the nerdiest stuff, out there. So CMT is a is just an acronym for a long chemical name, the chemical reaction that has to take place in order for us to remove things from our body. And specifically, it has to take place to remove estrogen, and it has to take place to remove adrenaline and dopamine, which is just fascinating because like dopamine and adrenaline are these key markers of stress.

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Dr. Andrew Rostenberg, DC

And, in our brain chemistry. And then, you know, you have estrogens having this big influence on hormonal pathways. So that the analogy, I think that makes the most sense is to think of just think of, parking spaces. I don't I don't live in Manhattan. I would never drive a suburban full of eight people down into downtown Manhattan and look for a parking space, because there's not that many available.

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Dr. Andrew Rostenberg, DC

And that would be a very painful, expensive, and confusing experience. But in your body with if you're if you're born with two copies of this CMT variant or as you mentioned, Jaclyn that, you know, there's some environmental challenges, nutritional deficiencies, etc., if this is going slower, if you're CMT is slowed down, it's analogous to being downtown Madison Square Garden just exits and you're driving to try to park your your big vehicle.

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Dr. Andrew Rostenberg, DC

So that's kind of what your estrogen molecule is trying to do. It's trying to find a parking space. So is your dopamine. And it's all about traffic. So when you have these

genetic challenges at that particular Conti point, the traffic is heavy. And so you have to drive around the block listening to a great podcast on functional medicine for 30 or 45 minutes or an hour before you can park your vehicle.

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Dr. Andrew Rostenberg, DC

And that's the analogy of what's happening in the liver. So with these genetic variants, the specifically, it might be that when you release dopamine instead of only being in your body for, you know, a half life of three minutes, your half life might be five, it might be seven. And so and you're you're going to have an outsized response to stress.

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Dr. Andrew Rostenberg, DC

If the dopamine sticks around too long and the adrenaline as well. And conversely, if you don't have enough estrogen, you could potentially have really low dopamine and you can't keep it in your body at all, as much as you need. So I hope that basically traffic and when there's, when those parking spaces are full, your molecules, your body's trying to get rid of are just going to be in circulation, look way longer than they're supposed to.

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Dr. Andrew Rostenberg, DC

And and those have effects on how we feel and how we handle stress. And they can make your cycle heavy. They could cause clotting, heavy heavy bleeding. You could always be chronically anemic because of this, because no amount of oral iron seems to be enough, because of how heavy your cycle is. And, you know, we've met, we meet patients like this, and we work hard to help correct that.

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Dr. Andrew Rostenberg, DC

So,

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Speaker 3

We'll be right back. Here at Precision Analytical, we've launched the biggest update to our report since 2013. The new and enhanced DUTCH Report puts the most actionable hormone insights right on page one, making it faster and easier to interpret. You'll see a re-imagined summary page, upgraded visuals for estrogen and

cortisol metabolism, and an all new about your results section, what we call the DUTCH Dozen, a 12 point framework that helps you understand your patient's hormones story in minutes.

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Speaker 3

It's a smarter, simpler, and more insightful DUTCH experience. From now through December 19th, 2025, all registered DUTCH Providers can order five DUTCH Complete or DUTCH Plus kits for 50% off. Give us a call or visit. DUTCHTest.com/order now. Must be a registered DUTCH Provider. Promotion not available to distributors can mix and match DUTCH Complete and DUTCH Plus kits pre-paid only.

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Speaker 3

No drop ships cannot be combined with any other offer. Kits must be purchased by December 19th, 2025.

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Speaker 3

Welcome back to the DUTCH Podcast.

00:27:15:15 - 00:27:38:21

Dr. Jaclyn Smeaton, ND

I like your parking lot analogy. I mean we think about Comt with with predominantly drives methylation. And so it's a really important step of the estrogen clearance process and also other detoxification processes. So is it true that other things can stress that pathway when it comes to detoxification, that can actually make neurotransmitter imbalances worse?

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Dr. Andrew Rostenberg, DC

You know, for clinical practice? Jaclyn, the trifecta is really it's dopamine and adrenaline. And when and when we when we say catecholamines of course. What, Jaclyn, I mean is it's there under the umbrella of the same, same basic shape.

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Dr. Jaclyn Smeaton, ND

Right. That adrenaline noradrenaline.

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Dr. Andrew Rostenberg, DC

Yep, yep. And and dopamine. Right. So those are all like grandmother, mother and daughter chemicals. Then you have the estrogens. But what's really fascinating and this was something that we kicked to in practice about ten years ago, you have all this gut activity. So you have all these phenol compounds in the gut. They go up into our portal vein, which, you know, the main reason the liver exists, you could argue, is to simply, like, detoxify what's happening in our intestines.

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Dr. Andrew Rostenberg, DC

That's like one of its main jobs. Huge filter. So if our digestive system is imbalanced and there's all this extra, let's say, bacteria or yeast that's flooding in every second, 24, seven, taking all the freaking parking spaces up constantly. And now what are you going to do with your hormone levels? Now you're, you know, you're a female. You're you're you're a 36 year old female and you're you're seven days away from your menstrual cycle.

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Dr. Andrew Rostenberg, DC

You should be progesterone dominant and your estrogen levels in a few days should begin to drop that because your guts imbalanced. And it's clogging all the parking spaces and cramped.

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Dr. Andrew Rostenberg, DC

This is why clinical practice and functional medicine is exploding. And that's so important because we can solve these things for people. This can be logically understood and solved. And your test is a real important tool. And in that process.

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Dr. Jaclyn Smeaton, ND

Yeah, I love that you bring up the microbiome because I think when it comes to testing our estrogen metabolism, people generally recognize that the microbiome has an impact through the astro belum, right through specific just biotic microbes creating beta glucan, which can cause estrogens to recycle. But you're really describing other ways in which the microbiome, or just biotic microbiome, could really impact metabolism of estrogens and other compounds.

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Dr. Andrew Rostenberg, DC

We all know. I mean, you know, laypeople, people who don't nerd out on functional medicine. There's commercials educating people that, you know, the gut's the cord or health and all of this. And I remember learning this, and just as a student, I'm like, how do you know the how do you know that's more true than saying estrogen dominance is the biggest problem.

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Dr. Andrew Rostenberg, DC

But, you know, the cool thing about practice and I, I explain this to patients a lot. And then to my colleagues when we're teaching them like it's about knowing which layer to peel first. So that's really the the experience what experience teaches you. But for example, if you get your DUTCH Test back on your patient and estradiol is, you know, 15% out of range, elevated high, and your patient goes to the bathroom once every five days and has a bowel movement and has been on 45 rounds of antibiotics in the last ten years.

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Dr. Andrew Rostenberg, DC

You're going to have to deal with the gut dysfunction. Normalize that physiology before you'll really be able to make that deeper change that you see on the DUTCH Test. That would be my kind of best practices advice. The you know, going to the bathroom is phase three detoxification. If, as you mentioned, if something is so like women generally have a predisposition to being constipated, it's, it's it's really interesting in the research, women are constipated about three times more often than men.

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Dr. Andrew Rostenberg, DC

And that has to do with estrogen, sort of its effect on the sphincters of the in the smooth muscles of our GI tract. So a woman who doesn't go to the bathroom not to get you know, I talk about this all the time. So we're just throwing that in here.

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Dr. Jaclyn Smeaton, ND

Yeah. You know, digestion is a common topic. We are not afraid to talk about it. Yeah.

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Dr. Andrew Rostenberg, DC

Yeah. So if you don't go to the bathroom and have a bowel movement that estrogen that your liver just detoxified is exposed to, the bacteria basically just undoes everything. Your estrogen just your liver just did. And now the estrogen goes right back up the portal vein. It has to get detox again. So in that traffic model like yeah that's creating traffic.

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Dr. Andrew Rostenberg, DC

So sometimes the simplest thing like that solving constipation can move the needle 30 or 40% for a hormone problem. Before we get into the more elegant, you know, functional medicine stuff. So.

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Dr. Jaclyn Smeaton, ND

Yeah, I think it's worth talking about. I mean, it's really a foundational aspect of health, and I'm glad that our microbiome is getting the attention, are getting more attention now. And we're learning about not just the gut microbiome, but microbiota really everywhere in the body. And it really influences, you know, when we think about hormone balance. I was talking about this with another doc on our team yesterday.

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Dr. Jaclyn Smeaton, ND

You have like the core hormone production pathways, the hypothalamus the pituitary gland. And then the end organs that manufacture in response to the brain. But then we have to consider what happens in the tissues. Right. And I would call that the terrain. Like how are they metabolizing. How are they utilizing. How are they metabolizing detoxifying and microbiome as a critical piece of that.

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Dr. Jaclyn Smeaton, ND

But also just the tissue health and how metabolism is working on the cellular level is a really important part of a patient's experience with hormones or, you know, their overall impact of hormones. So I'm glad you bring up microbiome because it's something that is such a critical piece. You really can't tease it out or talk about hormone balance without thinking about that.

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Dr. Andrew Rostenberg, DC

You know, there's some interesting research that I've found over the last few years. They call the the microbiome phase zero detoxification. And I'm like, I think that's the second. That's something in your mouth. It's getting modified. And it's almost kind of that incredible that we can eat all these colorful vegetables and things. And like if you're like, if your gallbladder stops working, okay, this is something to think about.

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Dr. Andrew Rostenberg, DC

If your gallbladder stops working completely for 24 hours, when you go to the bathroom, it looks like concrete. And to eat all this pomegranate juice and superfoods and highly phenolic stuff, that we put in our mouth that are just amazing superfoods and like natural medicine, our body rips that stuff apart so well, that gut just breaks it down and absorbs that.

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Dr. Andrew Rostenberg, DC

There's literally no color left. And all the color in your stool comes from your gallbladder. So of course, if you're having dysfunctional colors of your stool, you need to go see someone like me and get that worked on. But, yeah, it's the whole picture. But that's what. That's what the public wants. Jaclyn You know, people are people have I know they're they're they're they're being coached on what to ask their physical, their medical doctor.

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Dr. Andrew Rostenberg, DC

And I think it's creating a map. I think the change is just going to continue to happen across the board. It's going to be really exciting to see. Yeah, the whole healthcare gets upgraded.

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Dr. Jaclyn Smeaton, ND

Yeah, I totally agree. I mean, we've seen that there has been this consumer push to health and and we're getting a little off topic, but I think this is really interesting. I think providers have to either embrace it I mean a lot resistant. Right. Because traditionally when you went into your physician, they were your only source of information and the only ones who had the training to really properly diagnose.

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Dr. Jaclyn Smeaton, ND

Nowadays, I really believe all of the information that all of us know is on the web, right? You could learn every single fact that we learned in medical school. An MD and DS video doesn't matter. All of that information is available online. It's been democratized. The synthesis of it is what physicians learn and what they can do to apply it and help patients get well.

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Dr. Jaclyn Smeaton, ND

But with AI, patients are starting to do that on their own. I don't think that's for the best. I'm not recommending that people go without a doctor and just use, you know, grok or ChatGPT to diagnose and treat themselves. But it is allowing patients to come in a lot more informed. And I think if something that medicine's really been working to adapt to, of course, there's a ton of direct to consumer products and healthcare services and telemedicine.

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Dr. Jaclyn Smeaton, ND

You know, we can debate the pros and cons of that. But absolutely, the democratization of data has led patients to want to go a little bit deeper, and they need physicians who can do that with them.

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Dr. Andrew Rostenberg, DC

They will be they want a coach also and a quarterback. And I think that's the challenge to your, you know, your other physicians that you work with and other clinicians is that we don't we might be specialists in one area, but really and I come back to this more and more like I'm a basically a quarterback for people, because of my clinical experience seeing so much wide variety of different ailments and histamine issues and mast cells and neurologic problems and limbic system issues and PTSD.

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Dr. Andrew Rostenberg, DC

And what does that do to your gut and your hormones? Like people need someone to say, you're not crazy. It's not in your head. You don't need a psych med. I may not have this tool exactly in my kit right now, but you can go see this neurofeedback clinic. Or you could, you know, to be just kind of helping people know that they're not crazy and help educate them about what's going on.

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Dr. Andrew Rostenberg, DC

I think that truly, truly, at a fundamental level, being a doctor is teaching people. So it's, it's never boring, that's for sure.

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Dr. Jaclyn Smeaton, ND

Yeah, definitely never boring. Now I want to shift gears a bit, because when we talk about hormones, we don't always talk about how hormones affect men in the same way that we do women. Can we talk a little bit about, like catecholamines, like dopamine and norepinephrine and how they play a role in men's mood and things like motivation, overall energy?

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Dr. Andrew Rostenberg, DC

I'm happy to step on this landmine. Thank you, Jaclyn, for offering that landmine.

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Dr. Jaclyn Smeaton, ND

Gosh, I hope it's not a landmine.

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Dr. Andrew Rostenberg, DC

Well, I'm going to have to because I'm going to have to make generalizations about the differences of, the neuro, the, the, the neurologic terrain of the sexes. So, it's coming from clinically and it's coming from a place of love. So just just keep that in mind. But men are generally grumpy. And the general there is a movie when we were younger called Grumpy Old Men.

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Dr. Andrew Rostenberg, DC

It's kind of raunchy, but it's kind of funny. And it would never have sold if it was called Grumpy Old Women. Nobody would have ever seen that movie because our eyes and our life experience teaches us that, you know, men tend to have this curmudgeon, you know, kind of edge to their life. And it's it's and I don't mind that I think we should embrace it as men.

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Dr. Andrew Rostenberg, DC

It's just part of how we're made. So it's just our it's part of our Constitution. But I think

it's also good to understand why. Why do we have this, generalization that men tend to be grumpy and become curmudgeons as they get older? Well, if you look at lifetime dopamine levels and you track that decade by decade, men start in like the low normal range.

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Dr. Andrew Rostenberg, DC

And as we go through life, that actually gets lower and lower and lower. And so in order for grandpa to like, take a nap every day and it's easy chair from three in the afternoon till six at night and then wake up, eat dinner, do a few things, and then go back to bed and sleep another eight hours.

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Dr. Andrew Rostenberg, DC

Like that's really only possible because of low dopamine. So what men have as a greater risk than women? All of these, you know, colloquial things aside, the kind of risk that we have for our, our, our patients and the and the men in our lives, men are at risk of having really low dopamine. And that leads to can lead to so self-destructive behavior in an attempt to raise dopamine.

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Dr. Andrew Rostenberg, DC

And it's just my again, this is kind of my clinical opinion, but I think a lot of this stuff, guys, guys just do more dangerous stuff. We die more often, we do stupid stuff, and we're just trying to calm ourselves down by getting our dopamine levels elevated. So when it comes to hormones circling back, the reason this is such a strong effect in men is testosterone is essentially kind of an anti estrogen in a way.

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Dr. Andrew Rostenberg, DC

It's certainly on its effect in our brain. So in this in the same way that estrogen acts like this wonderful sort of natural effervescence to raise dopamine and be an antidepressant, as long as estrogen levels are within this normal range and they're within its bell curve range, we would expect dopamine to also stay there. But in men, when men have, healthy testosterone levels, you know, mid to high range, we actually are going the other direction.

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Dr. Andrew Rostenberg, DC

Our dopamine levels get out of our brain too fast. And so it's like you look at boys, I have a 14 year old, my oldest, and it's like school environment is really good. If your estrogen levels are high and you're female because you're not needing to do anything to raise dopamine in women, and the girls are beating the guys, they're scoring higher, they're more successful in that environment.

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Dr. Andrew Rostenberg, DC

And so the estrogen levels that, you know, young, young, teenage girls have, is it raising their dopamine. Now what are guys going through? The boys are getting their testosterone surges and other now their, their dopamine levels are going down. So now you're getting they can't focus. They can't pay attention. So it's a really great question and an important subject.

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Dr. Andrew Rostenberg, DC

But in my perfect version of reality, all of these boys that exhibit this behavior at that younger age in life as as young men, they're taking extra methylation support, they're getting extra tyrosine. And when they start misbehaving, you make them go to ten, win sprints in the yard, out front, and that'll raise their dopamine. And they'll be fine for a couple hours.

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Dr. Andrew Rostenberg, DC

But in men, as we get older, we also need to pay attention to this. And clinically again, those same things I mentioned before, tires seen in big the methylated BS are just so important for men, and we cannot make dopamine out of the ether. You cannot give someone a homeopathic. I'm sorry, I like homeopathic, but homeopathic are just an energy signature.

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Dr. Andrew Rostenberg, DC

It can't create an amino acid if the pathway doesn't exist in our bodies and it does it so.

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Dr. Andrew Rostenberg, DC

So I think you have to view men and women, with a little bit of, patience and a little bit of nuance when you start to look at it through the hormone dopamine connection

that women and men, you know, men are from Mars and women from Venus. You know, men tend to have, lower dopamine. And it drives a lot of our behavior.

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Dr. Andrew Rostenberg, DC

So if you're the guys in your life are driving you crazy, maybe this will give you a little insight into why. And then, of course, women, they're at risk of having too high levels of dopamine. And there's consequences of that too. So we want to help everybody just be optimal.

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Dr. Jaclyn Smeaton, ND

Are there any differences? And like the patterns that you typically see and testing between men and women in regards to catecholamines, metabolism and like, the HPA and BMR, estrogen metabolism, are there any kind of variations that or patterns that you see more in men or more in women?

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Dr. Andrew Rostenberg, DC

Certainly. I think what you're going to see on the DUTCH Test is that women who are exhibiting clinical signs of elevated levels of dopamine, which would be symptoms of like insomnia, panic attacks, high levels of like just sort of state anxiety, just like general anxiety.

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Dr. Jaclyn Smeaton, ND

I call that like stressed and wired. It's like that stressed and wired versus stressed and tired. You guys probably listening could probably relate to one or the other. It's like when you see patients under stress, they respond one way or another, collapse or hyper stimulation 100%.

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Dr. Andrew Rostenberg, DC

So yeah, that an excellent, succinct description of falling off the high end or the low end of the bell curve. But what I like about the DUTCH Tests is that I'm an adrenal fatigue like junkie. I just try to screen everybody for it. I used to have that problem. It is a real clinical phenomenon. There's no surgery, no CPT code for it, I get that, but that doesn't mean it doesn't exist.

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Dr. Andrew Rostenberg, DC

So seeing the seeing the HPA activity on the DUTCH Test and the cortisol in the free cortisol, that'll also correlate. So what you'll typically see is people who have been in the stress in a stressed environment for a really long time, you know, months, months, maybe years, you're going to see a depletion of in a female progesterone.

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Dr. Andrew Rostenberg, DC

You're going to see lower levels of cortisol. It's at the low end of normal or off the range low. And that will translate down and also pull down your catecholamines. Conversely, when you see the HPA axis on the DUTCH Test, states of overactivity, where the cortisol level is in the 80th percentile or 100 or more, you're also going to see that driving the sense that the sympathetic nervous system, you'll see the high catecholamines in that state as well.

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Dr. Andrew Rostenberg, DC

So it's it's like the catecholamines metabolism thing to keep in mind is it's really quick. It's much easier. So much easier to construct a molecule of dopamine than to build a molecule of cortisol. I find this really fascinating. Right. You know, you can turn on a dime and dump adrenaline. Boom. You know, it's like within seconds you can just squirt.

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Dr. Jaclyn Smeaton, ND

This stuff out, when you like, see the police lights in your rearview mirror and you get that rush. Maybe I'm the only one who gets that.

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Dr. Andrew Rostenberg, DC

Yeah, hopefully you begin to. You know, you need to settle down, Jaclyn, We need you. Yeah. We don't need you in prison. But the thing I teach patients about, and I think it's good clinically to remind ourselves, is that the body works in anticipation. That's so important to keep this perspective. It's it's it's thinking ahead when they.

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Dr. Andrew Rostenberg, DC

When the sun shines, it makes hay. So it makes DHEA when it's abundant and easy to

make it. And then it sticks a sulfur group on it to inactivate it. But it's right there on the shelf. They can just grab it. It's like a rip the package, open it, boom. You have DHEA and you can begin to support your hormone pathways.

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Dr. Andrew Rostenberg, DC

So catecholamines metabolism is kind of disconnected from that. It's situational. It's it's the the the frequency is a lot tighter. But what I love about DUTCH Testing is it just gives me like I can look into somebody's 24 hour cycle. I can see if their cortisol rhythm is within the the normal rhythm where, you know, the body's releasing cortisol to peak at nine in the morning, or is it releasing cortisol to peak at nine at night.

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Dr. Andrew Rostenberg, DC

And I think it's important as a clinician and in the space of functional medicine to be to be flushed with adrenal function, to be fluent with circadian rhythm, because it's up to us to educate the patient why things are happening. And believe me, if you what patients do is this is what I used to do. I knew if I didn't eat food and I kept working on projects, I'd get what's called a second wind.

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Dr. Andrew Rostenberg, DC

And I thought that was kind of cool, that I could just keep going past stopping point, that I should have stopped. But I just kept going because I don't need to stop now. It's like I get dopamine from getting this thing finished. Let's go. What ends up happening is you're just using you're abusing your endocrine system, and it's kind of like a plane that takes off and it's it's, you know, it takes off and it takes like four hours for it to circle hit its destination and come back.

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Dr. Andrew Rostenberg, DC

So if you if you push your cortisol levels out of your body, it doesn't your body can't reel it back in in 20 minutes. You have to take the ride just like we've all felt. If you have that, you see the lights in the mirror and you start, you know you have that big adrenaline dump. You can have a rough morning.

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Dr. Andrew Rostenberg, DC

The problem is over in 30 minutes, but you don't feel normal for the next eight hours, you know? So I love this conversation. I love hormones and the endocrine system because it is the most influential system, like it's the most powerful system in how we feel day to day. The nervous system is big. I'm a chiropractor, of course.

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Dr. Andrew Rostenberg, DC

It's huge. It's moving information around and processing it. But what we see on the DUTCH Tests the sex hormones, stress hormones has the sets, the background tone for pretty much your daily experience.

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Dr. Jaclyn Smeaton, ND

Yeah. I'm glad you brought cortisol into our discussion because it's something that, you know, we haven't talked about yet today, but certainly is so impactful, you know, to get into that proper circadian rhythm and the data around cortisol and adrenaline, you know, and epinephrine, norepinephrine, all of our catecholamines and pretty much every single bodily system, it shows a connection where when stress is elevated and those hormones are released outside of a normal pattern or elevated response, you get downstream effects and and really, every tissue that they've looked at as far as a function of the end organ, there was just a really interesting one that came out around like the innovation of the

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Dr. Jaclyn Smeaton, ND

ovaries. Particularly important when we talk about women who are trying to conceive and women who are going through perimenopause and menopause, that actually stress has a effect on the ovaries throughout the lifespan that impacts their function at these key times and reproductive cycle. Really interesting, you know, data. But the more we look, the more we uncover with that.

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Dr. Jaclyn Smeaton, ND

So I'm really glad that you brought cortisol into the picture, because it's such an important part of neurotransmitter activity as well as reproductive hormones.

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Dr. Andrew Rostenberg, DC

I sometimes mentioned to patients that, you know, heaven forbid you would, you

know, a woman could experience a full hysterectomy at a young age for some life saving procedure. We wouldn't ever encourage that, but that hasn't been known to happen. Men have been castrated for different reasons, potentially, than just health reasons at a young age, and you can live essentially a normal length of your life, even with dramatically lower levels of testosterone or estrogen.

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Dr. Andrew Rostenberg, DC

It's not you're not going to be healthy per se, but you can live that that, that time. If you lose your cortisol levels, you're going to be dead in about 72 hours. So it's like, what's the stronger hormone, you know? So.

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Dr. Jaclyn Smeaton, ND

Critically important. Yeah. Well, the last topic that I want to touch upon is I know you do a lot of testing, and I'm sure our listeners are really wondering, like, how do they put this together clinically when they're using the DUTCH Test? Now, I know we look at hormone activity, neurotransmitter activity. Can you start by talking just generally like how do these influence one another, and what's the value in looking at them together when you're looking at a DUTCH Test?

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Dr. Andrew Rostenberg, DC

Well, I think part of what sets our practices apart is we're in the business of understanding why and explaining why. And I think the, the, the value of Life-Saving heroic medicine is you're not looking at someone's estrogen levels when they're bleeding out in the O.R., you're just going to keep them alive for the next 24 hours and then hopefully the next two weeks.

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Dr. Andrew Rostenberg, DC

But eventually, once the fire's out. How do we rebuild people and, you know, are we are we doing our job in that respect? So your your job in the clinical sense is to gain the understanding so you can help patients understand why things happen. And when we have that understanding, our decision making and our accuracy goes way up.

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Dr. Andrew Rostenberg, DC

And now as with experience interviewing people and just listening to their history, you begin to put that together. But I just it's just really valuable to have in your hand. Objective data. I mean, I'm a biochemical nerd. I got straight A's and. Oh, Ken, I mean, I'm weird that way. But I love the fact that, you know, patients who aren't that same kind of person can look at this test and see relationships, and I can explain that, explain it to them.

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Dr. Andrew Rostenberg, DC

But it's just important in functional medicine to remember that everything is connected. We may not I mean, I even I, you know, may not even be able to explain all the different connections. Of course I won't. But it's important to understand that when a patient has, you know, estrogen levels, let's say on the DUTCH Test that the primary estrogen and circulation, E1 and E2 and E3 are in the normal range for a 36 year old female.

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Dr. Andrew Rostenberg, DC

But her metabolized estrogens are really below range. And so that you begin to be able to understand that it's not it's it's the liver's metabolic pathway. It's the processing of that estrogen that's being influenced. So again, everything we work on in clinic, it's invisible. Guys, we're not walking into a house and like physically crawling in the crawl space and up in the attic looking for the dysfunction, we have to look at a person, and we need to test that does that for us.

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Dr. Andrew Rostenberg, DC

So I'm not even sure. You know, blood testing has some value. There's some. There's some, maybe double checking you would do in blood, from what you see on the DUTCH Test. But ultimately, I'd love to know why things happen. And as good as I am, maybe with my experience, like just talking to patients and hearing their history, it's nice to see levels on a test.

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Dr. Andrew Rostenberg, DC

So you're doing that. You're doing us a service by offering this test. We it's up to us to learn what to do with this.

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Dr. Jaclyn Smeaton, ND

Yeah. No, that means a lot. I mean, I think when it comes to neurotransmitters, there's a lot of information that you have to synthesize. And the fact that we include a couple of markers on the test can be helpful. You know, I need to get the patient's clinical picture into place, of course, and looking at things like microbiome, but it's really great to hear reflected back to so useful for your practice.

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Dr. Jaclyn Smeaton, ND

So thank you so much. It's been really wonderful having you on today. I always love how you can dive into the biochemistry and make complex things make become more understandable for our listeners. So thanks for joining me again today, Doctor Rostenberg and thanks to all of you for listening.

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Dr. Andrew Rostenberg, DC

Thanks for having me on, Jaclyn, I appreciate the invitation.

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Dr. Jaclyn Smeaton, ND

If people want to learn more about you, what are the best places for them to connect with you?

00:53:04:04 - 00:53:23:03

Dr. Andrew Rostenberg, DC

So there's a couple different, ways that interested parties can reach out. If you're a patient, I would encourage you to reach out to my, my physical clinic. I'm sitting in my treatment room right now, so. Yeah, we have a brick and mortar clinic, and I work on the Idaho. I'm in Boise. It's a wonderful place, and I see about 80 people a week and my tables right behind me.

00:53:23:03 - 00:53:41:01

Dr. Andrew Rostenberg, DC

So that's where all the magic happens. So if you're a patient, you're interested in, having someone, like, with my skill set to help you out, I love to work with you. And I work with people in 46 states and 14 countries. So we have a we've had a thousand telemedicine telehealth patients over the years. So we've got a pretty good system for that too.

00:53:41:01 - 00:54:02:01

Dr. Andrew Rostenberg, DC

And and then if you are a clinician and you're interested in some of the work I've done, I'm in the process of like curating everything into one website. It's got I got I got stuff everywhere. But, I do teach and I teach seminars occasionally around the country, in person, but I have a coaching program called willpower.

00:54:02:03 - 00:54:24:18

Dr. Andrew Rostenberg, DC

It's called willpower practice. If you go to willpower practice, dot com can learn more about that. But I love teaching and I love helping people like to make functional medicine complicated. It obviously is. But the the what sets our coaching different is you don't need another degree or 1000 hours at another institute of functional medicine in order to practice this stuff.

00:54:24:18 - 00:54:41:04

Dr. Andrew Rostenberg, DC

You just need you need good coaching and to know how to do things in the right order. That helps you get started on Monday morning and that's kind of that's my passion is like leading from the front and like, yeah, we don't need another PhD unless you want to get one get for you. But most of us just want to like this tool is amazing.

00:54:41:04 - 00:54:50:20

Dr. Andrew Rostenberg, DC

I know it's going to help my patients, but it's complicated. How do I throw that out and get it to use? Get it usable in clinic? And that's what we, really strive to help you do.

00:54:50:22 - 00:54:55:12

Dr. Jaclyn Smeaton, ND

Wonderful. Well, thanks again for joining me, Doctor Rostenberg and I hope you have a great day.

00:54:55:14 - 00:54:59:05

Dr. Andrew Rostenberg, DC

Jaclyn, I appreciate it. Anytime.

00:54:59:07 - 00:55:12:00

Speaker 3

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