

Episode 132 Transcript

00;00;00;00 - 00;00;17;18

Dr. Amy Killen

But I have all these friends in regular and traditional medicine hospitals, people who, you know, take care of, of older adults who still like to think that I'm practicing voodoo medicine. They think that I'm completely like just making things up. Like I'll talk to them about hormones and they're like, yeah, yeah, that's whatever. Like, it's just crazy to me.

00;00;17;25 - 00;00;43;05

Dr. Jaclyn Smeaton

Welcome to the DUTCH podcast, where we dive deep into the science of hormones, wellness and personalized health care. I'm Dr. Jaclyn Smeaton, 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.

00;00;43;08 - 00;01;07;04

Dr. Jaclyn Smeaton

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 this week's episode of the DUTCH Podcast. I'm really excited for today's guest, doctor Amy Killen. I follow her on social media and I find that she has the science forward approach.

00;01;07;09 - 00;01;25;13

Dr. Jaclyn Smeaton

She shares really great information, and I've always learned a lot from her, really diving into her story as well. It's pretty incredible. You know how she went from E.R. physician to a longevity medicine doctor? Now, in today's episode, we get to touch upon a lot and we dive into a lot more of the science of hormones, which is really what she does in her practice day in and day out.

00;01;25;18 - 00;01;43;19

Dr. Jaclyn Smeaton

She takes this approach of hormone optimization, and we really talk about what that

means for women, particularly during perimenopause and post menopause. And what I really appreciated about this conversation was we got into a lot of the physiology and a lot of the why behind the standard recommendations that are there. We talked a little bit more about the research.

00;01;43;19 - 00;02;16;11

Dr. Jaclyn Smeaton

We talked about the timing that's recommended for starting hormone therapy, and why you might make a decision that's outside that normal guideline. We really got to talk about a lot of the in depth areas. The other thing we covered on this podcast that was newer to me, not something I've done in practice, is the longevity medicine approach, the testing that's done to determine things like biological age or organ age, and why that's an important piece for us to be considering in your practice, but also as a patient as you think about living a really healthy latter half of your life.

00;02;16;16 - 00;02;35;24

Dr. Jaclyn Smeaton

So I learned a ton from this podcast. I think you're going to really enjoy it. We also talked a bit about the DUTCH Test and about the research behind the DUTCH Test, and really got the chance to talk about a wide variety of aspects of health for women. So my guest today is Doctor Amy Killen. Like I said, leading expert in longevity and regenerative medicine.

00;02;36;01 - 00;02;59;07

Dr. Jaclyn Smeaton

And she really does have that approach to move people from surviving to thriving. She talks about this when women come in, they're in a little bit of state of overwhelm, but then once they start to feel better, you can really work towards that thriving point of view. After she began her career as a board certified emergency physician, she shift your focus to human optimization, blending hormones, peptides and regenerative therapies to support vitality at every age.

00;02;59;09 - 00;03;19;11

Dr. Jaclyn Smeaton

She's the co-founder and chief medical officer of Humanaut Health and the founder of the Human Optimization Project. Doctor Killen is very passionate about empowering women to reclaim their health and confidence. And she's widely recognized for her engaging, science based approach to aging and wellness. You're going to love everything we talk about today. So let's go ahead and dive in.

00;03;19;14 - 00;03;26;01

Dr. Jaclyn Smeaton

So, Doctor Killen, you're one of the guests I'm most excited to have on the podcast. So thank you so much. I'm so glad you're here.

00;03;26;03 - 00;03;29;13

Dr. Amy Killen

Thank you. I'm very excited. It's going to be a good conversation. I think.

00;03;29;16 - 00;03;49;14

Dr. Jaclyn Smeaton

So one of the things that I really love hearing about is hearing about just your backstory, which I find really fascinating, because you've had this led the like twisted, winding road to get to where you are now in the longevity medicine space. And it was really like, sounds very intense and very humbling. And, you know, just a really a big change for your life.

00;03;49;17 - 00;03;59;03

Dr. Jaclyn Smeaton

Can you start by, for our listeners who don't know you that well, share a little bit about your background clinically, but also just kind of that personality does that you've been through to get where you are today?

00;03;59;05 - 00;04;14;01

Dr. Amy Killen

Yeah. Thank you. So I was an emergency physician for so I was a E.R. doctor for ten years, went to residency, and I worked in the E.R. in Austin for a long time. And it was super fun. Lots of lots of adrenaline, lots of cool stuff. But then I had my three kids within two years, and I was working in the E.R..

00;04;14;01 - 00;04;32;17

Dr. Amy Killen

Still had to be at work at four in the morning. You know, lots of stress, lots of Diet Coke and monsters and not eating well. And just like, you know, lifestyle wasn't wasn't great, but just trying to juggle it all. And I kind of started to get overwhelmed. And I realized at one point when I was in the E.R., I was looking out at the people who were waiting to be seen as patients.

00;04;32;19 - 00;04;48;26

Dr. Amy Killen

And I just had this moment where I realized that if I didn't make some big changes in my life, I was going to be one of those patients in the E.R. in a few years with some kind of chronic medical problem that, you know, could have been prevented if we'd gotten to it sooner. So I decided I needed to make some changes, and I eventually left emergency medicine.

00;04;48;29 - 00;05;04;26

Dr. Amy Killen

That was in 2013 and started learning about, you know, this other kind of medicine, integrative medicine and functional medicine, longevity medicine and hormones. You know, there's a lot of different names for it. But essentially, how can we prevent problems? How can we optimize health? And that's what I've been doing ever since then.

00;05;04;28 - 00;05;25;18

Dr. Jaclyn Smeaton

Yeah. I want to talk a little about you said three kids in two years, which is that's intense, let alone, like, on top of a job. And I, you know, I think that's an interesting piece to talk about. I love talking about that combination of, like, mothering or parenting. Not just mothering, but mothering and doctoring, because I think that's such a it's hard to wear all the hats at one time.

00;05;25;19 - 00;05;31;22

Dr. Jaclyn Smeaton

Can you share a little bit about what that was like, like what that season of life was like with you? Because that's a lot to juggle.

00;05;31;28 - 00;05;49;28

Dr. Amy Killen

Yeah. It was it was crazy. I saw I had twins, twin daughters, and then 20 months later I had my son and it when my son was a week old, my husband, who's a screenwriter, he got a job out of state and moved to California. And I was living in Canada, living in Texas. So I was basically the lone caregiver of these three kids.

00;05;49;28 - 00;06;04;26

Dr. Amy Killen

And I did have a know pair who would work sometimes. But, you know, essentially,

whenever I wasn't working in the E.R., I was taking care of the kids, and there was no real, real help. And I'd, you know, I had to be up at 330 in the morning. So I was I was sleeping 3 or 4 hours a night total.

00;06;04;28 - 00;06;19;21

Dr. Amy Killen

Which was crazy. And I was just in survival mode the whole time. Like, I look back, I don't even remember a lot of it, because I think that I was just in this state of just like, you know, I can I think we women, as women especially, we just kind of are like, I could do this. Like, I'm not going to I'm going to keep going.

00;06;19;21 - 00;06;39;03

Dr. Amy Killen

Like there's no stopping, like you got to keep going. And so I just kept going. And then eventually, after a few years of that, I took a moment to kind of step back. And I just realized kind of the the wear and tear to my, to my brain, to my body, to my family. And that I just I couldn't keep going like this forever.

00;06;39;06 - 00;06;54;08

Dr. Jaclyn Smeaton

Yeah. It's interesting that a lot of people ask because I'm a mom, I've got four biological kids, that I'm a blended families who have seven in total. It's very busy, you know. Of course, wearing multiple multiple hats at a time. And people ask a lot about that. And I think we also had au pairs and my children were young.

00;06;54;08 - 00;07;10;29

Dr. Jaclyn Smeaton

And I think that that's such a wonderful way to kind of smooth the edges and allow you. For me, I feel like it allowed me to be the mom I wanted to be when I was around, because I didn't have that long list of like, pack the lunch to the laundry, like they held together. So many of the aspects of parenting.

00;07;10;29 - 00;07;28;06

Dr. Jaclyn Smeaton

There's privilege, of course, that we had that, but they were able to really make sure that when I showed up, I got to, like, show up as a mom in the way that I want it to be. And so I'm really happy that you mention that, because I think some people think that working women kind of do everything by themselves, but a lot of times it does take a village and it's okay.

00;07;28;09 - 00;07;29;14

Dr. Jaclyn Smeaton

Yeah, yeah.

00;07;29;14 - 00;07;48;01

Dr. Amy Killen

And my husband was when I had the twins was very, very helpful. He was here for those first few years. It was the two of us against the world, you know, juggling the babies that it was it was it was like constant. But of the au pairs we had, I had many pairs and they were fantastic. And they would they did help a lot, but they would they only worked, you know, ten hours a day, which is a lot.

00;07;48;01 - 00;08;07;13

Dr. Amy Killen

But that's I was working ten hours a day. So, you know, essentially when I wasn't working at my job, then I was fully taking care of the kids, which was great. Like I wanted to do that. But at the same time, there's never downtime, there's never rest, there's never time. You go to the gym, there's not time to make, you know, home cook meals, like all of that stuff really kind of like fell by the wayside.

00;08;07;15 - 00;08;20;16

Dr. Jaclyn Smeaton

Yeah. I was listening to a podcast yesterday of, like, a high powered business woman who doesn't have children. And they were asking like, well, what do you do when you don't work? And she's like, I work all the time. And just like, well, you know, I love to get facials. And it was just such a stark contrast to my own life.

00;08;20;16 - 00;08;40;18

Dr. Jaclyn Smeaton

And like, I want to get a facial, but what am I going to fit that in? You know, like just the difference when you're trying to juggle as a parent and there's no shade thrown because I think everyone can choose the life that they want. But I think it's, you know, until you have that responsibility and you're trying to do all those things, whether you're a man or a woman, you don't know how what it's like really, that that there is no free time, really.

00;08;40;22 - 00;08;58;24

Dr. Amy Killen

I remember one time I have this very vivid memory when my my kids were all little, my husband was out of state and I was I was talking to one of my girlfriends about like I actually was haven't had a dinner out. So we're talking about, you know, parenting your kids and something. And I mentioned that I had made fish sticks for, for dinner the night before for the kids.

00;08;58;26 - 00;09;15;01

Dr. Amy Killen

And my friend, who didn't mean any harm, but she was like, oh my gosh, how are you? Make like fish sticks are so bad for your kids. They're so horrible. And I also just felt so guilty. And because the worst part was like fish sticks were like one of my better meals, like I did not have time to cook.

00;09;15;06 - 00;09;26;12

Dr. Amy Killen

And even putting something in the oven for 20 minutes was like, I felt really good about myself. Yeah. And so I felt like such a failure. Like, I can't even get like, like fish sticks. It was about as good as I could do for my four kids.

00;09;26;14 - 00;09;48;16

Dr. Jaclyn Smeaton

Yeah. And I mean, ultimately your kids were fed, right? And you were there every night, and that's what they survived, right? So, I mean, we put so much pressure on ourselves, I think especially in like integrative medicine and functional medicine and longevity medicine, we know a lot. And so, you know, do you breastfeed or give formula like all of those decisions weigh in a different way when you have the background and you're in our fields I think so, yes.

00;09;48;16 - 00;09;53;23

Dr. Jaclyn Smeaton

You know, with all anyone out here listening, we've got your back. Make the choices you need to make. Kids are probably going to be all right.

00;09;53;23 - 00;09;57;18

Dr. Amy Killen

The kids are going to be totally fine. They're going to be fine. They're very resilient.

00;09;57;20 - 00;10;05;03

Dr. Jaclyn Smeaton

Especially when they're young. It feels like you're in a blur. I completely relate to that. But you do come out of you come out of it. They come out of it. How old are your children now?

00;10;05;05 - 00;10;07;15

Dr. Amy Killen

My daughters are 17 and my son is 15.

00;10;07;17 - 00;10;09;24

Dr. Jaclyn Smeaton

Oh, you're really you're really on the other side of that now.

00;10;09;24 - 00;10;13;03

Dr. Amy Killen

Yeah, yeah, they're almost out of the house, which makes me very sad.

00;10;13;05 - 00;10;33;10

Dr. Jaclyn Smeaton

I know it's my oldest is 17 and graduating this year. It's it's crazy to see that happening. Yeah. So I want to talk a little bit about like, when you're an er physician and you're thinking you need to pivot, you start to explore a lot of new areas hormone health, esthetics, regenerative medicine. What sparked that curiosity for you, and how did you know that this was kind of the new path?

00;10;33;12 - 00;10;50;09

Dr. Amy Killen

I got interested first in hormones. I had taken a course through EMG and sent a Gen X. They had like, you know, like a week long intensive course and I didn't know anything about hormones. I remember the doctor who was leading the course called me first, and he was like, so, you know, do you know about like, estradiol in estrogen at a stroke, y'all?

00;10;50;09 - 00;11;09;02

Dr. Amy Killen

And I was like, I have no idea what those words are that you just said to me. Like, I literally have no idea. But I started becoming interested, took this course and was just fascinated by all the things that I had never learned in medical school. That seemed kind of important about how these different hormones affect, you know, how our, you know, our metabolism and how we gauge and all of these things.

00;11;09;05 - 00;11;29;07

Dr. Amy Killen

And then once I eventually left the ER, I started working at a franchise for Body Logic up in Portland, Oregon, doing mostly hormones. And that's when I became interested in regenerative medicine. I started doing PRP procedures, and then eventually, moved to Utah and started learning about stem cells and other kind of regenerative biologics. And so added that to to the mix as well.

00;11;29;07 - 00;11;31;10

Dr. Amy Killen

But it started all with, with hormones.

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Dr. Jaclyn Smeaton

Yeah. It's so interesting because you've been at the leading edge like PRP was very new and kind of controversial when it first came out. But now, like I'm in Boston, like Mass General does PRP. It's like everyone does it. Yeah. And now I think stem cells are kind of that next leading edge. How do you as a doc.

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Dr. Jaclyn Smeaton

Because I think this is really an interesting question and something that a lot of us sit with when you're evaluating, kind of especially in a clinic like yours, you want to be offering things that are on the leading edge but also credible. And so how do you go through the process to discern and like, know when you're ready to take something on like that?

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Dr. Amy Killen

Yeah. When I first the first question is always does it seem like it's safe? Obviously, you know, with and with with, with regenerative medicine, with the stem cells that we're using or exosomes, these are generally very safe as long as you have a good supplier and good technique. But it's always, you know, safety is the first thing.

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Dr. Amy Killen

And then does it work obviously is another question. And I think that there's still a lot of questions that we have. Like we don't know for sure what the best way to use these

therapies are with the best dose is, you know, the best form. But but I start with, is it safe? And then I'm always very straightforward with my patients with, you know, we think that this could help.

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Dr. Amy Killen

We don't know for sure or I've seen it work in 70% of patients, but not 30%, like, you know, kind of using, the data that I can find and making sure that I tell patients what I know and don't know and just have a very candid conversation. I'm also pretty particular about the patients that I choose to do these procedures, especially when I was first starting making sure that they're healthy, that they don't have, you know, any red flags or they're they're expecting miracles.

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Dr. Amy Killen

They have, you know, they're smokers and don't heal well, like, you know, we had a whole list of things that would kind of, push, push patients away from being allowed to come in. But I think just, you know, honesty with the patients and letting them know that this is all a lot of it's still investigational and it may or may not help, but I think it's worth a try.

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Dr. Jaclyn Smeaton

I love that you bring up like the patient selection. That's something that we've talked about before, but I want to dive into that a little bit more because I think there is like the you want to make sure they're a good candidate medically. But then there's also the mindset you mentioned. Like you want to make sure they're not having unrealistic expectations.

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Dr. Jaclyn Smeaton

Can you talk a little bit more about that? Because that seems to me like a very ethical approach to take one that you're really transparent, but also, something that really makes sure that the patient has the right mindset for it.

00;13;42;22 - 00;14;00;29

Dr. Amy Killen

Yeah. So at our regenerative clinic and so those CRC clinics, I work with Harry Adelson, I've been working with him since 2014, just part time. I'm up there. And we do these

big regenerative cases. He does musculoskeletal injections, neck back joints, and I do sexual health skin, hair. And then we'll do intravenous as well. But we don't treat in that clinic.

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Dr. Amy Killen

We don't treat systemic diseases. So for instance, you have Alzheimer's or Parkinson's or, you know, autism or things like that. We're very specifically not treating those things because part of it is because we we don't have those the expertise and part of it is we just don't want we don't want to treat patients that, are, are desperate for a cure and they're willing to spend anything, even if they don't have the money.

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Dr. Amy Killen

So one of our, you know, prerequisites is we, we we don't do like, we don't let you pay over time because we don't want to have patients that can't afford it to do these procedures. If you can't afford it, we, you know, as bad as this sounds, we would rather not do it because, you know, these don't always work.

00;14;37;24 - 00;14;59;01

Dr. Amy Killen

And so what you don't want to do is do a procedure that's not going to work. And now you've been put into debt. So we're very careful about making sure that the patients can afford it, that they understand the risk. They understand that that may not work. And then we stay very closely within our lane of expertise, and we don't treat people that we just don't really understand the, you know, the disease mechanism for them.

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Dr. Jaclyn Smeaton

I think that's great. Well, let's turn this and talk a little bit about hormone. So on social platforms, I've heard you use the phrase hormone optimization therapy. Not like menopausal hormone therapy. Or honestly, can you talk about why that terminology feels like a better fit for you?

00;15;13;07 - 00;15;31;26

Dr. Amy Killen

Yeah, I, I, I sometimes will use HRT or to use other words, but to me a hormone optimization therapy is a better fit because a we're not just treating menopausal women. You know, I think any of us who are in this space are understand that we're

treating women of various ages pre-menopausal, PCOS, you know, people who have pain with periods, whatever.

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Dr. Amy Killen

But we're and I also treat men. So I'm treating men and women, and I'm not necessarily trying to replace the hormones and get them back to what they were before when you were 18 or 20. But I'm trying to optimize hormone, so I just think it's a better term to that explain what we're actually doing. And it also is a little bit more, you know, broadly focused on the population of patients that we're treating.

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Dr. Jaclyn Smeaton

Yeah, I really love that because I think when we look at hormone therapy, particularly like perimenopause and menopause replacement, I mean, what are you replacing because you're not going back to cycling levels like a Wiley protocol unusual that providers are doing that where they're trying to actually like restore a menstrual cycle. That's quite unusual. And then the range that you're targeting is usually between post-menopausal and a luteal range.

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Dr. Jaclyn Smeaton

So it's still kind of a much lower level of hormones than you'd have in your reproductive years. So it does seem like you're thinking about it from that optimization point of view to mitigate side effects, but then also look at long term health outcomes, which of course, those are not FDA approved indications, but really kind of exciting research.

00;16;32;28 - 00;16;33;24

Dr. Jaclyn Smeaton

Yeah that's happening.

00;16;33;24 - 00;16;54;19

Dr. Amy Killen

We're also not just using estrogen, progesterone, you know, testosterone. A lot of us are also using thyroid or, you know, melatonin or, you know, other other hormones that might also potentially need to be replaced, DHEA, things like that. So I, I just like the tweet and I also like saying that I'm a hot I'm a hot doctor provider.

00;16;54;22 - 00;17;00;02

Dr. Jaclyn Smeaton

Brilliant. Okay. What do you think about that. That's brilliant. I need to get an army of hot doctors out.

00;17;00;05 - 00;17;03;07

Dr. Amy Killen

We just know that we need all the hot doctors to come together to.

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Dr. Jaclyn Smeaton

Talk about, like, rebranding this whole process. God, that's so brilliant. At the Hot doctors, I love it. It's good. Right? That's right. So what are your core goals? When women come in for hot therapy?

00;17;15;24 - 00;17;30;08

Dr. Amy Killen

My goal, you know, I always want to see obviously establishing their baseline is important. Doing what we do. I humanize where I'm like chief medical officer. We do a bunch of different labs. Of course, we're doing diagnostics on blood test, blood test. And we're also doing other things like Dexa scans and VO2 max and things like that.

00;17;30;08 - 00;17;53;07

Dr. Amy Killen

So really getting a good picture of where they are from a clinical standpoint. And then obviously the patient history and understanding what they've been through, what their goals are, what their concerns are. I think that if you listen to a patient, a woman or man, but a patient long enough, you'll, you'll, you'll learn so many things about about them and know, you know what they're most worried about, what their what they're really want to achieve by seeing you.

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Dr. Amy Killen

And then and then obviously talk about kind of what the options are. And I am very pro hormones, but obviously not everybody not every patient wants to take them or can take them. So you know, making sure that we talk about the risk and the benefits and who's a good candidate and then kind of going from there.

00;18;08;20 - 00;18;30;25

Dr. Jaclyn Smeaton

So I use AZT or pro hormones. Let's talk a little bit about why. So I think some of it is, you know when we look at especially menopausal hormone therapy, it's predominantly designed around hot flash mitigation. And if you look kind of historically, and a lot of the other benefits that were suspected, like cardiovascular protection earlier pre Women's Health initiative are now starting to be more well studied.

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Dr. Jaclyn Smeaton

I wonder about your point of view, because I think in our lifetime we're going to see that hormone, menopausal hormone therapy or predominantly estrogen is going to be recommended as a primary prevention. Like I think the research seems to be going that direction. Do you agree with that or what do you think about it?

00;18;47;06 - 00;19;07;12

Dr. Amy Killen

I think it absolutely will be. And and honestly, it should be right now. It should be right now. I'm actually I'm working on an article right now about vasomotor symptoms and, and brain health. And the fact I know we know now that hot flashes, night sweats, especially night sweats more than hot flashes. But night sweats are damaging in real time to your brain.

00;19;07;18 - 00;19;31;07

Dr. Amy Killen

And we have MRI evidence that it's essentially causing like little micro strokes in your brain when you have these recurring night night sweats over and over again. And we know that this is a risk factor for dementia. We know this is a risk factor for heart disease. And, you know, all of these things like we have this data even though we don't have, you know, a lot of long term data that shows that preventing these things with estrogen necessarily prevents dementia.

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Dr. Amy Killen

And a lot of there's a lot of reasons we don't that's kind of messed up data. But we do know that in real time, if we prevent vasomotor symptoms, we could probably prevent these, you know, these hyper intensities on the on the MRI. And and I think that that's up to me. That's enough. Like why do we yes we want more data.

00;19;49;01 - 00;19;56;10

Dr. Amy Killen

But if we can prevent the things that are probably driving dementia and heart disease, why are we not doing that?

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Dr. Jaclyn Smeaton

Yeah, it's interesting because when you look at evaluating a therapy, we go back to two minutes ago. You talked about like first you evaluate safety and it does feel like safety has been well evaluated here. There it's been with so many women for so long. We know the risk factors. We know how to screen women for contraindications. I mean there's still more to know I think, on forms of hormone, right.

00;20;15;19 - 00;20;35;00

Dr. Jaclyn Smeaton

Like most of our research is on CTE and progestin, not progesterone and estradiol like it's most commonly used. However, if you look at some of the early like observational French studies that make it look like progesterone might be better, you know, it's likely that we've well evaluated safety, that we could start to think about using them for broader indications.

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Dr. Jaclyn Smeaton

And I know a lot of clinicians do probably yourself as well. Yeah.

00;20;37;17 - 00;21;05;28

Dr. Amy Killen

And honestly, even if we just use estrogen for one of the menopause society's indications, which is osteoporosis prevention, that's that's enough. I mean, 50% of women develop osteoporotic fractures over, you know, those are who are over the age of 60. So if this affects 50% of women, then why are we not preventing it in women. So even if we don't look at cardiovascular disease and dementia, we know that these hormones absolutely help prevent fractures, absolutely help prevent pelvic dysfunction.

00;21;05;28 - 00;21;30;19

Dr. Amy Killen

And utilize, you know, all that like pelvic floor issues. And that's a no brainer. We also know that because, I mean, these are motor symptoms, cause brain injury in real

time. And to me that's enough that we can start using them. And I agree. Totally agree with you. I don't think we know enough about the dosage. Perfect doses, perfect forms, you know, is estradiol transdermal versus oral?

00;21;30;19 - 00;21;42;01

Dr. Amy Killen

Is there are there benefits to CTE that we just we kind of dismissed it, but maybe there were some benefits. I think there's a lot of questions still. Right. Whether we should be using the hormones I don't think is really a question.

00;21;42;03 - 00;21;58;15

Dr. Jaclyn Smeaton

Yeah. I was on one of your most recent posts. You were saying you got a call from your mom and she was talking about like, maybe my GPU kind of leave me alone about this. And you wonder, like, what is it going to take for things to become a little bit less controversial in mainstream medicine? I think part of it is just the timing of education.

00;21;58;15 - 00;22;16;06

Dr. Jaclyn Smeaton

Like, I took a course at Harvard this year on menopause management, Harvard Med School, and they are a very much pro hormone, like it's very modernized. But I think unless you're a menopause provider, like you're studying under the menopause Society or you're seeking that out, it's taking a long time to translate into the rest of the medical community.

00;22;16;08 - 00;22;31;04

Dr. Amy Killen

Yeah, it's kind of crazy to me. I mean, yeah, my mom, you know, I've had my mom on estrogen for ten years and she's doing great. And her, you know, her doctors keep trying to take her off of it. She's in her 70s, you know, she has literally no medical problems, except for she did just have osteopenia. And she broke her hip a couple of years ago.

00;22;31;08 - 00;22;49;08

Dr. Amy Killen

But but I have all these friends in regular and traditional medicine hospitalist people who, you know, take care of older adults who still, like, think that I'm practicing voodoo medicine. They think that I'm completely like just making things up. Like I'll

talk to them about hormones and they're like, yeah, yeah, that's whatever. Like it's it's just crazy to me.

00;22;49;08 - 00;22;50;00

Dr. Amy Killen

Yeah.

00;22;50;02 - 00;23;09;24

Dr. Jaclyn Smeaton

Yeah, it does seem crazy. And I mean, I went to school when, Women's Health Initiative kind of was published. It was, I was I graduated 2007. So it was, you know, I learned everything like lowest possible, shortest duration, possible, and, you know, endless like that. Unless you seek it out, you're not really reeducated on it, which is probably all of medicine.

00;23;09;24 - 00;23;16;16

Dr. Jaclyn Smeaton

Right? Which is a scary thing that you can see a GP and if they haven't trained and updated what's going on, they could miss Mark.

00;23;16;18 - 00;23;20;09

Dr. Amy Killen

Yeah. I mean, no, I'm willing to give doctors a lot of leeway because I understand how.

00;23;20;10 - 00;23;20;13

Dr. Jaclyn Smeaton

I.

00;23;20;18 - 00;23;35;10

Dr. Amy Killen

Understand that we all get in our you all have our very narrow focus, and we're really just trying to do our best for our patients. And especially if you're in traditional medicine, you know, you only have 5 or 10 minutes to see each patient and do your charting and, you know, I so I understand that it's just absolutely crazy.

00;23;35;17 - 00;23;43;05

Dr. Amy Killen

But I also think it's time that we stop making excuses and start educating ourselves about hormones.

00;23;43;08 - 00;24;06;23

Dr. Jaclyn Smeaton

Yeah, I mean, it's a systemic it's a system problem really, because I think most physicians have so little time with the patient, so little time for continuing education. I mean, it's the entire system that is about kind of moving patients through as quickly as you can. So it's definitely doctors are not that we have to take responsibility because we care about our patients, but it's not like it's a lack of desire to do good for our patients.

00;24;06;23 - 00;24;20;11

Dr. Jaclyn Smeaton

That drives that kind of great to have it. Yeah. Yeah, absolutely. So what do you think is really driving this like massive surge in interest in hormones? Totally. Because I think we are in this time of a movement where we everyone's talking about it.

00;24;20;14 - 00;24;50;05

Dr. Amy Killen

Yeah. It's so interesting because I've been doing this and I'm sure you have to like, I've been doing this for what, 12 or 13 years now. And yes, and the same thing does all these years and like no one cared. But. Yeah, exactly. But in the last three or 4 or 5 years and we've had a few kind of big names in social media who who've built big followings, who I think are really good at just getting, you know, getting the word out there and speaking the language of regular women, women who, you know, maybe aren't in medicine and just are having these problems.

00;24;50;05 - 00;25;03;22

Dr. Amy Killen

But I think that a lot of it goes, you know, a lot of credit goes to these doctors, who have come out and just done a great job with their their education, with their PR campaigns, with their book writing. But I think it's helping. It's a good it's a good thing for all women, I think.

00;25;03;25 - 00;25;20;24

Dr. Jaclyn Smeaton

Yeah. And it wasn't just talking a little bit more about kind of the future with the state of research. I know you are. You stay on top of the research. You know, we talked about how hot flash management and osteoporosis prevention are, kind of the two indications that are approved right now. Others as well, like for some other hormones

like libido and testosterone, things like that.

00;25;20;26 - 00;25;30;12

Dr. Jaclyn Smeaton

But what do you think are going to become the future indications for this hormone optimization therapy, like looking at where the data is at and what things where things are headed.

00;25;30;14 - 00;25;49;24

Dr. Amy Killen

You know, I think that we will in the next hopefully few years, see progesterone recommended outside. You know, even in women who had a hysterectomy, I think that there's enough data that we know that progesterone has benefits, that it does counteract some of the negative benefits of estrogen, you know, not just in the uterus, but also the breast, the brain, other organs.

00;25;49;28 - 00;26;17;04

Dr. Amy Killen

So I think eventually we'll see recommendations that people who are taking estrogen should also take progesterone. Yep. All the time. I think I, I feel like the testosterone is really going to be slow, most slow moving. I don't know when we're going to have testosterone recommendations outside of hyperactive sexual desire disorder. And I think the reason for that is because the studies that they've done so far in testosterone, and many of them use such a small dose that they didn't see benefits outside of sexual benefits.

00;26;17;11 - 00;26;41;04

Dr. Amy Killen

And so they, you know, the people keep going back to those studies and saying, see, there are no cognitive benefits to testosterone. There are no, you know, motivation benefit. There are no muscle building benefits. But I think we have to take that with a grain of salt. They probably weren't dosing at high or not high enough to see benefits, but I think that that's probably down the line if we're going to see that, I think we'll continue to see a big push for vaginal estrogen that's become something that's, you know, obviously become talked about a lot on social media.

00;26;41;04 - 00;26;55;27

Dr. Amy Killen

And doctors, I think, you know, are starting to use it more and more. Even my mom's

regular urologist finally recommended vaginal estrogen for her, which I was I was excited about. So that's a big one that I think is going to make a huge difference in women's lives. And I'm super excited about that one.

00;26;55;29 - 00;27;18;29

DUTCH

We'll be right back. Here at Precision Analytical, we've launched the biggest update to our report since 2013. The new and enhanced report puts the most actionable hormone insights right on page one, making it faster and easier to interpret. You'll see a reimagined summary page, upgraded visuals for estrogen and cortisol metabolism, and an all new about your results section.

00;27;19;06 - 00;27;43;23

DUTCH

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00;27;43;27 - 00;27;57;10

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00;27;57;13 - 00;28;00;10

DUTCH

Welcome back to the DUTCH Podcast.

00;28;00;13 - 00;28;21;29

Dr. Jaclyn Smeaton

Yeah, I'm actually really surprised to hear you talk about progesterone. That's not what I thought you were going to say. And it's actually really exciting because that's something I haven't seen a lot of discussion around the same. And of course, especially with for the brain like Alo pregnant alone as like so critical for brain health. Yeah. So can you talk a little bit more about that progesterone piece?

00;28;21;29 - 00;28;41;03

Dr. Jaclyn Smeaton

Because I think just to kind of set the stage right now, if you are a patient who's listening or a woman who's listening, estrogen is really the focus of menopausal hormone therapy right now. Progesterone is recommended really only for women with the uterus so that you don't develop hyperplasia, which is like overgrowth of this, the lining of the uterus, which can lead to endometrial cancer.

00;28;41;03 - 00;28;59;12

Dr. Jaclyn Smeaton

So if you don't have a uterus, it's not recommended. And in fact, some clinicians get criticized for even adding progesterone in a woman who doesn't need it. So yeah. What you're talking about Doctor Killen is like that. There are potentially benefits to having progesterone as well. So tell us more about that because I find that awesome that you brought that up.

00;28;59;14 - 00;29;18;20

Dr. Amy Killen

Yeah, yeah I hope I think I think that the part of the problem, of course, comes from back to my other studies where they use progestin. And the progestin, of course, were slightly associated with increased breast cancer risk, increased blood clot risk, etc.. So I think that a lot of doctors, you know, lump progesterone and progestin together and say these are not great.

00;29;18;20 - 00;29;37;16

Dr. Amy Killen

And so we shouldn't give them if we don't have to. And by half to what? Meaning that you have a uterus that we can't, you know, we can't give you estrogen unopposed. But I think that there is a good amount of data that the progesterone that the bioidentical form has so many benefits. And like you mentioned, you know, when you take progesterone especially, you're taking the oral form, the pill form.

00;29;37;19 - 00;29;53;29

Dr. Amy Killen

It gets metabolized in the liver. It gets made into pregnanolone, which then goes to your brain, acts on GABA and is very good for, you know, reducing anxiety, helping with sleep, helping with kind of calming your mood. At least for 80 or so percent of women, it can be the opposite for some, but it can be so helpful.

00;29;53;29 - 00;30;16;10

Dr. Amy Killen

And we know that the brain needs it needs progesterone. In fact, the brain can make progesterone on its own. But you know, it would also like it for you to have some progesterone in your body. So I think progesterone for that purpose also for, you know, counteracting the estrogen in the breast, there is there's a lot of data coming and there's some already out there that the progesterone, you know, it modifies the way estrogen works in the breast tissue.

00;30;16;17 - 00;30;34;17

Dr. Amy Killen

And it kind of helps reduce some of that proliferation that estrogen can cause in the breast. And so I think that we we should be taking it for the breast that progesterone also has bone benefits. Certainly they're not as strong as its estrogen bone benefits. But both progesterone and testosterone, have bone benefits in women. And so, you know, we should be studying those.

00;30;34;17 - 00;30;48;12

Dr. Amy Killen

We should be considering them. But, you know, it just makes sense if we're giving a hormone like estrogen. Estrogen is so powerful. And it's just like there's, like, loud. You know, amazing hormone. But like, you kind of need the thing that's going to it's going to balance out estrogen and work with it and tone it down a little bit.

00;30;48;12 - 00;30;49;23

Dr. Amy Killen

And that's progesterone.

00;30;49;26 - 00;31;06;26

Dr. Jaclyn Smeaton

Yeah I thank you for going into that a little bit. It is interesting because hormones are not you know, well we think about things in two ways. There's hormone production. But then the way tissues use hormones shifts depending on what hormones are around. And I think that's a piece that we try to of course, for the sake of explaining.

00;31;06;26 - 00;31;24;26

Dr. Jaclyn Smeaton

We kind of oversimplify sometimes. But you're absolutely right. Like in a cell, if estrogen is applied and not progesterone, the behavior of the cell is different than if both are supplied. And I think we sometimes forget that, that it actually affects same

thing with insulin. Insulin is another one of those where there's a lot of insulin around cells behave really differently.

00;31;24;26 - 00;31;34;05

Dr. Jaclyn Smeaton

So it really can change the kind of the tissue environment. And that impacts the way we use hormones and probably affects risks for use of those.

00;31;34;07 - 00;31;50;17

Dr. Amy Killen

It's so there's so many things we don't know right about hormones. And we can measure blood levels. You measure urine levels. But there's like all these pieces in the middle that we still really don't know. Like we do know that progesterone, you know, affects the actual the way that that that estrogen binds to the receptors, it affects the shape of the receptors.

00;31;50;22 - 00;32;02;22

Dr. Amy Killen

You know, when you have progesterone there versus not there. And so I think that, you know, it makes sense that if your body made these together and we understand kind of how they work, that you would maybe want to take progesterone as well as estrogen.

00;32;02;24 - 00;32;20;25

Dr. Jaclyn Smeaton

Yeah, absolutely. I mean, one of the other kind of really well-documented examples around that environment is that we have this kind of timing hypothesis for initiation of hormone therapy, which was a big issue in high. But when women go a long time without hormones being supplemented and then you reintroduce them, the impacts very different from a continuous supply.

00;32;20;26 - 00;32;29;10

Dr. Jaclyn Smeaton

Do you want to chat about that a little bit, too? Because I think people know like, oh, ten years are over 60. Not such a good idea, but maybe don't understand the why behind that recommendation.

00;32;29;10 - 00;32;49;19

Dr. Amy Killen

Yeah. So when we think about estrogen for instance there is a we have a good body of data that early start estrogen. And this again mostly oral estrogen. So this is key with estradiol as well. But early estrogen use within 6 to 10 years of menopause will reduce cardiovascular disease risk in, you know, 20 something studies like a big big studies lots of studies.

00;32;49;22 - 00;33;11;29

Dr. Amy Killen

So we do think that it is helpful for heart disease risk, but that if you start estrogen later after 6 to 10 years depending on the study, then we don't see a reduced cardiovascular disease risk in those people. And when I think about this, I think about estrogens benefits on on the blood vessels and cardiovascular system, kind of in like two categories I think about like direct benefits, like how does estrogen directly affect the blood vessel?

00;33;11;29 - 00;33;32;12

Dr. Amy Killen

Like we know, for instance, that it causes vasodilation through nitric oxide pathways. We know that it can actually improve endothelial function by binding to the receptors there. So we have direct vessel benefits. But then you have indirect vessel benefits like the estrogen we know can help with your lipids. It can, you know help decreases your visceral fat like some other things that of course are going to also influence cardiovascular disease risk.

00;33;32;15 - 00;33;39;29

Dr. Amy Killen

So, what what we think is happening is that after a certain amount of time, you know, from menopause onset.

00;33;39;29 - 00;33;40;26

Dr. Jaclyn Smeaton

Or.

00;33;40;28 - 00;33;59;25

Dr. Amy Killen

After you start to develop endothelial dysfunction inside the blood vessels, like you start to develop heart disease and dysfunction, then those those receptors in the blood vessels for estrogen change. And so that when estrogen binds it, it doesn't cause some of the same probably direct blood vessel effects that you had before. So

maybe you still get the indirect effects.

00;33;59;25 - 00;34;13;26

Dr. Amy Killen

Maybe you still get the, you know, like reduced visceral fat and lipid effects and things like that, but you're not getting the same direct effects. And so, so far in the studies, late start estrogen does not seem to reduce cardiovascular disease risk as far as we know.

00;34;13;28 - 00;34;28;21

Dr. Jaclyn Smeaton

Yeah it's really interesting. And hopefully we'll learn more about that in the future. I think the brain was another area, pretty well established. Like when you have cognitive maintenance, hormones are continued. But then actually if you reintroduce estrogen, the outcomes are not as good in the. Yeah, exactly.

00;34;28;26 - 00;34;52;07

Dr. Amy Killen

It's not like late start estrogen in the brain and the heart don't prevent further disease. Doesn't mean it makes anything worse. It just doesn't prevent disease. But and so in late starters you know I do I do still start estrogen late. But I always start a transdermal not an oral in those cases. But I you know I use oral in other cases sometimes and that but I do think, you know, I do know that we have other benefits like your bones for instance, don't seem to have that problem.

00;34;52;07 - 00;35;09;11

Dr. Amy Killen

Like your bones are happy to have estrogen if you're 75 years old and haven't had it since you were 50 and you add estrogen, even a small amount your bones are like, thank you. And they love it. And they you know, it actually could help to prevent, further bone loss and even improve bone building even in the late starters.

00;35;09;11 - 00;35;20;28

Dr. Amy Killen

Same thing with the pelvic floor and, you know, and urinary symptoms. So some systems seem to don't to not have the receptors change and others seem to have those receptors change after time, which is very interesting.

00;35;21;00 - 00;35;45;22

Dr. Jaclyn Smeaton

Yeah. You're bringing up for me this thought about like just listening to you talk, it's like, this is why women need doctors who stay with them and understand what their needs are and what their life is like, what their risk factors are, because there's not. While we have these guidelines, what's really standing out to me is there might be cases where you'd go outside of guidelines, like if a woman's had a long period of time off between menopause and wanting to start hormone therapy, depending upon her risks and her quality of life.

00;35;45;22 - 00;35;57;22

Dr. Jaclyn Smeaton

And it's about shared decision making and having a doctor who helps you understand what the risks are and the benefits might be, and really making that decision together. And I think that's it's hard to find and it's hard to find, but it's so, so important.

00;35;57;29 - 00;36;03;03

Dr. Amy Killen

It is hard. It's hard and it's hard to stay up on all this information. I know, you know, I do this, you know, almost full time and it's still hard.

00;36;03;11 - 00;36;18;17

Dr. Jaclyn Smeaton

Now, another thing that I thought was so interesting, you shared this study from nature that came out this year, this like Multi-omics study where I want, first of all, you to explain what that is, because I think a lot of people are new to the concept of these markers that can be picked up to look at, but it's part of longevity medicine.

00;36;18;17 - 00;36;36;01

Dr. Jaclyn Smeaton

And it was interesting because they kind of compared that individual organ markers to that kind of overall biological age calculations that are being done to. So anyway, I know that's you know, so much more about this for me. Can you tell us a little bit more about just this field of measuring lifespan? Healthspan. Let's start.

00;36;36;01 - 00;36;54;17

Dr. Amy Killen

There. So in the longevity space, a lot of people or you're talking about these aging clocks, in fact, I was just at a conference in Switzerland. The whole thing was about

aging clocks. And you have people like Steve Harvey Roth, who kind of invented one of the first aging clocks. But these clocks are there's different ways of, you know, looking at your body and trying to say, what is the age of either the body or the organ?

00;36;54;22 - 00;37;12;24

Dr. Amy Killen

And so they can use epigenetics, for instance. You know, that, like the decorations around the DNA, that of course, change as you get older. Those can give you an idea of this like biological age. And but there are other things you can use the glycans around your immune molecules, meals, the proteins in your blood, the, you know, RNA in your blood there.

00;37;12;24 - 00;37;39;12

Dr. Amy Killen

So all of this whole category is called metabolomics, essentially doing some sort of testing of these various pieces of the of the body, the metabolism, the DNA, the genomics, and then trying to understand what is the biological age using that category. So what this study in nature did was they essentially were looking at all kinds of things, but they started looking at menopause and the effect of menopause on various organs age.

00;37;39;14 - 00;37;57;16

Dr. Amy Killen

So they looked at these metabolomics and they would look at, you know, the age of your heart or your brain or your liver or immune system. And how does menopause affect those the age of those systems. And they found that, you know, almost across the board, menopause was detrimental to it, made all the system age faster. And then they also said, well, what about estrogen therapy?

00;37;57;16 - 00;38;09;16

Dr. Amy Killen

How does that seem to affect those systems aging. And they found that in most systems, especially the immune system in the liver. And I think one other when it came about, it was that it slowed down the aging of that.

00;38;09;16 - 00;38;10;23

Dr. Jaclyn Smeaton

It was syncretic.

00;38;10;23 - 00;38;16;11

Dr. Amy Killen

It might have been. I can remember that. I know it wasn't heart, because heart actually wasn't a blood vessels. It was blood vessels.

00;38;16;11 - 00;38;18;02

Dr. Jaclyn Smeaton

Oh, blood vessels, blood vessels.

00;38;18;04 - 00;38;34;06

Dr. Amy Killen

So blood vessels, liver immune system were very susceptible. And a good way to estrogen. And they would actually slow organ aging when you got estrogen compared to not, you know, not having hormones. And then there were other systems that didn't seem to be as affected, like muscles were not that effective as effective.

00;38;34;06 - 00;38;36;12

Dr. Jaclyn Smeaton

But that was surprising to me that muscles weren't as effective.

00;38;36;12 - 00;39;02;25

Dr. Amy Killen

I know I was kind of surprised and even heart wasn't that effective, right? Blood vessels were, but heart wasn't. So, you know, this is one of those things that I think it's important to understand, because we don't necessarily have to wait 10 or 20 years to see how therapy is working. If we have tests like this. And, you know, one of my favorite tests is book, like an age test, because it's very receptive to estrogen status in the body, and it's a test of inflammation of your immune system.

00;39;02;25 - 00;39;18;04

Dr. Amy Killen

But when you add estrogen, if you need it, it can markedly affect this glycan age test. And so I think that tests like this can be really helpful for doctors once we know how to use them, and ones that we can kind of prove that they're actually, you know, precise and accurate, which right now there's a little bit of question about that.

00;39;18;06 - 00;39;37;13

Dr. Jaclyn Smeaton

Yeah. Like, I know this study, that number of women was very small was like 47 women. So you but it was exploratory and it's so interesting. And it's a really great step on the pathway to trying to learn more and learn how we can do this type of work in a scaled way. Yeah. The other thing in that study that I found really interesting was women who went through an early menopause had a much greater speed of organ aging.

00;39;37;13 - 00;39;55;14

Dr. Jaclyn Smeaton

And it makes me think about, you know, I have a fertility background, most of my clinical practice, and it's like patients with bad fertility tend to have worse morbidity and like, worse outcomes with chronic disease. But it's not the infertility that's causing it. It's the thing that causes the infertility that's also causing this kind of chronic disease.

00;39;55;14 - 00;40;14;16

Dr. Jaclyn Smeaton

And it makes me think about early menopause and the way we think about that, whether it's true premature ovarian insufficiency or whether that's like, gray version of that, if that's black and white, some kind of in between where our ovaries. And actually there's this kind of cool paper that came out about just the environment within the ovaries and the the way that changes with aging.

00;40;14;16 - 00;40;17;22

Dr. Jaclyn Smeaton

It's not so black and white. So we're really starting to kind of hone in on that.

00;40;17;25 - 00;40;33;13

Dr. Amy Killen

Yeah. I think it's so interesting, the role that the that the ovaries and the eggs play in women's longevity. And I think that if you anyone who's studying longevity, if you're studying women and you're not talking about the role of the ovary, then you're missing a huge part of the picture, not the whole picture, but a big part of it.

00;40;33;16 - 00;40;58;05

Dr. Amy Killen

And and like you said, like, you know, ovarian aging, the speed that what our ovaries age. It is not something that, you know, is the same for everyone. And environmental factors, lifestyle factors, genetics, of course, but many things influence how quickly the

ovaries age and so those are important. But then also once the ovaries have kind of aged out and you've had menopause or premature ovarian insufficiency, if you're younger, then that's also going to have a big impact on how you age.

00;40;58;05 - 00;41;15;08

Dr. Amy Killen

Also, it's kind of like are more rapid aging sets in when the ovaries kind of stop working. So there's it's kind of a chicken and egg and there's a lot of things happening at one time. But the role of the ovaries in how quickly women age in multiple body systems is well known. But we're we're learning more about it all the time.

00;41;15;10 - 00;41;31;24

Dr. Jaclyn Smeaton

Yeah. I mean, if I had to summarize it quickly for the sake of, you know, a clip, it would be that mitochondria really drive ovarian function. Same with testicular function. And, Matt, when we learned about mitochondria in medical school, I always learned about it with the cardiovascular system. It's like, you know, the role of the way that the heart needs so many mitochondria.

00;41;31;24 - 00;41;51;25

Dr. Jaclyn Smeaton

And to cook you ten for your heart and all that stuff. But really the organs that are most dependent upon mitochondria are testes and ovaries. And so it's so interesting because I think as we have, you know, poor lifestyle, high stress, you know, poor diet, high insulin, all these things impair our mitochondrial function. And then we start to see change there.

00;41;51;25 - 00;42;00;04

Dr. Jaclyn Smeaton

First. It's like the canary in the coal mine. So you know I think if as we roll back it's like protect the mitochondria, to protect your ovaries, to protect your, your hormones and your long term health.

00;42;00;06 - 00;42;21;10

Dr. Amy Killen

And also if you do estrogen is very is integral to how mitochondria work. So, you know, if you get to the point where you aren't making estrogen and you also aren't taking it, then you're going to have worsening mitochondrial function system wide because it's no longer getting that positive signal from estrogen, which is, you know, is

a positive marker of how help it helps that mitochondria work better.

00;42;21;10 - 00;42;24;26

Dr. Amy Killen

So there's a whole it's a it's a it's such a dynamic interesting process.

00;42;24;28 - 00;42;42;04

Dr. Jaclyn Smeaton

Yeah, definitely. Now when it comes to the stem cell therapies in your clinic, you'd mentioned that was used predominantly for like injuries or pain. Is that right. Or are you seeing that there could be applications for stem cell therapy for overall longevity and benefit? How is that different than the kind of targeted treatment?

00;42;42;06 - 00;43;04;18

Dr. Amy Killen

Yeah, I mean, so both can be done for sure. So we you know, in our district clinics in Park City, we're using primarily look like localized treatment. So for skin health, you know, scalp health sexual health and then joint health and injecting it into those areas. But we also at that clinic as well as at Human Eye will also do intravenous, you know, either stem cells or extracellular vesicles like, like exosomes.

00;43;04;20 - 00;43;27;05

Dr. Amy Killen

And the there is some research looking at longevity and after stem cells and in stem cells potentially helping with markers of longevity. Most of the studies that have been done use, like umbilical cord stem cells and looked at older people who had frailty and they would say, if we give them IV stem cells, does this help with markers of frailty, like how fat, how far you can walk in six minutes or your grip strength or things like that.

00;43;27;07 - 00;43;46;24

Dr. Amy Killen

And it did seem in those small studies that the stem cells were helpful mechanistically. It makes sense. We don't have large studies, and certainly not like large randomized controlled trials that say that, you know, IV stem cells or exosomes or things like that. You know, increase, longevity in any, any real way. But we think that it could, that they could.

00;43;46;26 - 00;44;13;09

Dr. Jaclyn Smeaton

It's exciting to think about because it's an area of, you know, we we focus a lot on removing injury, like reducing inflammation, you know, creating a better environment for health. But when it comes to actual like cellular repair, that's something that we do on our own. Our bodies know how to do that. So thinking about ways to optimize that beyond just changing the immune system's kind of external function, but truly, the cells function is a really interesting piece that we've not unlocked.

00;44;13;09 - 00;44;16;04

Dr. Jaclyn Smeaton

It's kind of the last piece of the puzzle to unlock, I think.

00;44;16;07 - 00;44;39;14

Dr. Amy Killen

Yeah, I think it's really interesting. And then pairing it with other therapies, you know, pairing it with hyperbaric oxygen or, you know, a therapeutic plasma exchange or some of these other things that have come online more in the longevity space in the last few years, like how did those work together with some cell therapies and then obviously pairing those all with a good, healthy lifestyle and all the things that we know work just in general for health?

00;44;39;16 - 00;45;01;01

Dr. Jaclyn Smeaton

Yeah. Now, you mentioned like hair and skin as well. And I want to ask your opinion about this because I see a lot that longevity medicine and esthetics get kind of partnered in a practice. And so I really would love for you to share your perspective on this kind of like outside and inside kind of pairing of work and how that benefits women, or why clinics are doing that for the sake of women.

00;45;01;03 - 00;45;20;07

Dr. Amy Killen

Well, I can tell you why I started doing it. So when I was I started doing hormones in Portland at this small clinic. I was like a one man show. I was running the whole clinic by myself. I didn't have any help. It was very it was very funny. But I was seeing patients and I when I would first see them, they would come in kind of in this, you know, survival mode, like I'm sure you've seen, like they're stressed out and they're overweight and like nothing's working in their at the end of their rope.

00;45;20;13 - 00;45;37;05

Dr. Amy Killen

And so we would start some lifestyle changes and supplements, some hormones, and then they would come back in 3 or 4 months and they're starting to feel better. And they're like, okay, I'm losing a little weight. My energy's up. And they would invariably then ask about one of two things. They would say either, now, can you help me with my sex life?

00;45;37;07 - 00;45;55;27

Dr. Amy Killen

Or they would say, now can you help me with my skin and hair? And so I got the question so many times that I started thinking of like, what can I do? Like, I'm not a dermatologist, I'm not a urologist. But surely there's some connection between all the things that I'm learning about in terms of how to be healthy and helping people with, you know, skin, scalp, sexual health.

00;45;56;05 - 00;46;09;24

Dr. Amy Killen

And so I kind of started diving in and learned, you know, all the things we could do from a lifestyle standpoint. But then the other regenerative therapies that were, can I kind of coming online at that time, PRP and then eventually stem cells and shockwave therapy and red light therapy and, you know, all these other things.

00;46;09;27 - 00;46;25;12

Dr. Jaclyn Smeaton

What are your favorites for a skin? Because there's so much out there that I think women are like, it's hard to kind of cut through. And you look at like the red light therapy mask, they're hundreds of dollars. Like no one wants to spend money on things that aren't going to work. Are there things that you feel like are really trustworthy recommendations in this space?

00;46;25;12 - 00;46;27;14

Dr. Amy Killen

I mean, sunblock is probably.

00;46;27;14 - 00;46;31;26

Dr. Jaclyn Smeaton

The most gosh, yeah, I wish I did that on like 20 years ago. Yeah.

00;46;32;03 - 00;46;46;04

Dr. Amy Killen

And I love I mean, I love the sun. I think the sun does have some good benefits to health. I think we should be getting some sun every day, but probably not on your face. And you know, and now, like, my neck is always I never, I always forget my neck. And now it's like getting brown. Anyway. Sunblock.

00;46;46;04 - 00;47;05;15

Dr. Amy Killen

Mineral, sunblock every day is important, I think. I think a retinoid of some sort before bed has a lot of data behind it. We know that this is a good good for slowing skin aging, so there's various antioxidant options out there that can be helpful as well. Kind of pair that with, you know, the sun block. The sun is the block is helping to prevent the sun damage.

00;47;05;19 - 00;47;21;17

Dr. Amy Killen

And then you add in something to help repair the damage, like vitamin C and vitamin E and resveratrol. And some of these NAD precursors, etc.. So there's a main I think those are the main things. And then there's certainly many things that you can try on top of that. But still, getting the basics right is going to get you a long way.

00;47;21;19 - 00;47;37;12

Dr. Jaclyn Smeaton

That's gotten a lot of those, like the retinol that you can get, prescriptions that are not out of, like high cost out of pocket to the fusion, which I really like, like a treat. No one is. You get a copay for that. It's not like you have to pay \$300 a month for some fancy skincare cream, and you get a lot of great results.

00;47;37;12 - 00;47;44;14

Dr. Amy Killen

Yeah, I mean, I think I get my treat known for like \$10 and it lasts me, you know, 2 or 3 months. And so you just get a little tiny bit at a time. It's it goes a long way.

00;47;44;16 - 00;48;01;08

Dr. Jaclyn Smeaton

Yeah. Great. So I do want to talk a little bit about the test if you're open to it. And I have to tell you, I actually probably our team probably sent me your post that you put up, like, should I take a DUTCH Test? And I thought it was really first of all, it was very fair. And I really appreciate the way you, took the time to do the research.

00;48;01;08 - 00;48;19;00

Dr. Jaclyn Smeaton

And like I could tell you really looked into the research. In fact, I wish we had your spreadsheet when we had done our webinar like six months before. You put that post up. But I really, first of all, wanted to say I really appreciate it. And I know when we your post talked about estrogen metabolites specifically, why did you look at estrogen metabolites?

00;48;19;00 - 00;48;21;20

Dr. Jaclyn Smeaton

Is that what most people associate the DUTCH Test with? You think?

00;48;21;27 - 00;48;41;11

Dr. Amy Killen

Yeah, I think that, you know, first of all, when I went into this, I, I've been for years, I've had I've been wondering like, should I be doing this test? And I, I think that there are potentially benefits, the task. I just wanted to make sure that I understood what they were. I have many doctor friends in the functional medicine space who like, love the DUTCH Test, and I do it all the time and they're like, if you're not doing it, you're not, you know, you're not even doing hormones, right?

00;48;41;14 - 00;49;12;18

Dr. Amy Killen

So I but I've also kind of heard the other side, and I chose estrogen metabolism and breast cancer because mostly I was curious about the relationship I've been hearing, you know, so many times at this pathway causes breast cancer and this one's healthy and this one's not. And I didn't know if it was true. And what happened when I started looking into the research, I found that a lot of studies were referencing other article, but like but very few people had actually gone back to the primary studies to see what the primary studies had shown.

00;49;12;21 - 00;49;23;25

Dr. Amy Killen

And so that be kind of came my like six month mission. Like, let's go back to the primary studies and read them all and see what they showed, and then try to understand what this tests can tell us. And what it what it can't.

00;49;23;27 - 00;49;47;15

Dr. Jaclyn Smeaton

Yeah. Well, we I went through your spreadsheet as well because we had done we did the same work. I mean, we really try our best to be evidence based. And hopefully people know that, like, we care about science. In fact, Mark, our founder, used to work for us a little lab. I don't know if you know that a saliva hormone testing lab, and he was responsible for like creating all the education and eventually he went to the owner and said, I don't think saliva is the best way to measure hormones.

00;49;47;17 - 00;50;05;07

Dr. Jaclyn Smeaton

And the the guy didn't really wanna do anything about it. So he founded a urine based lab and developed that method. And so he was like, I taught saliva for so long. But then when I looked into it, I didn't feel good about it. So I went to urine. And I really respect that, actually. And I remember actually, Tara Scott asked Mark a question and shared some data, and we looked at it.

00;50;05;07 - 00;50;26;25

Dr. Jaclyn Smeaton

It was a completely different topic. But Mark said to me, and I'll never forget this. He said, my, my worst nightmare is to know that we've sent anyone down the wrong path with any clinical decision, right? So yeah, we really do. My point being, the reason why I like working there is that I do trust that if that we look at their research and would pivot if things didn't look like we were going the right direction.

00;50;26;28 - 00;50;50;27

Dr. Jaclyn Smeaton

That being said. So we looked at your spreadsheet. We've done that literature research before and seen most of the same studies. But one thing that I want to highlight is that and I learned this a lot working at DUTCH is that method matters for hormone measurement. And when I looked at the research that was looked at most of the studies that showed no benefit used immunoassay for the hormone measurements, the ones that showed better connection actually were done with LCMS.

00;50;50;29 - 00;51;13;20

Dr. Jaclyn Smeaton

And that's something that I think a lot of clinicians like. I hope you don't mind me using this opportunity to back it up there, because people don't know, like us as docs don't know, to ask, even in serum, when you're expecting low levels of hormone like

measuring estrogens at a postmenopausal women, you're always better off to ask for LCMs because of sensitivities there where immunoassays are not typically as sensitive.

00;51;13;20 - 00;51;33;05

Dr. Jaclyn Smeaton

That's one of the challenges with saliva is they're immune. There are LCMs methods, but not commercially available. And so with saliva they're using immunoassay. So that was really I just would offer that as like a layer to consider. Because then we filtered out a lot of the studies that you included because they were immunoassay. But the last study, I think it was Brantley was the author.

00;51;33;05 - 00;51;44;08

Dr. Jaclyn Smeaton

Yeah. That was really like we're spending some time looking at that one because that was LCMs. And yeah, so a connection and that was an outlier. So that was a newer paper since we did our review. So I really appreciate you bringing that one up.

00;51;44;09 - 00;52;05;09

Dr. Amy Killen

And I'm glad that you said that because I, I did try to I went through a noted how each if I could find it how they how they actually calculated the levels. And to your point, immunoassay is is notably in hormone space not as good as Elysium as we've seen that especially for like progesterone, you know, like amino acids, like overestimating progesterone by, you know, three or 4 or 5 fold for years.

00;52;05;09 - 00;52;26;02

Dr. Amy Killen

And we had no idea. So I think that that is a fantastic point. And I think how you measure definitely matters. And I think, you know, my takeaway wasn't necessarily that these that, that, that the that the it that the hormone pathways that the, you know, the two the four hydroxy don't tell us anything. My pathway was more like my takeaway was more that I don't know that we know as much as we think we do.

00;52;26;02 - 00;52;48;02

Dr. Amy Killen

And probably there's just more like probably as we continue to gather information from from women, what are their genetics? What what's their lifestyle? What's their epigenetics? You know, as we gather all this information together and then use some

of these tests, like the DUTCH Test, I think we'll start to understand why we're seeing this, you know, benefit or this effect in some people, but not others.

00;52;48;04 - 00;52;56;11

Dr. Amy Killen

Yeah. But I just don't think that it's as easy necessarily as saying this pathway is good. This pathway is bad in the case.

00;52;56;13 - 00;53;22;27

Dr. Jaclyn Smeaton

I completely agree with you. And I really aligned with what you're saying with that. And we actually kind of we stopped using that like good and bad language, which again was never technically correct. It just simplified the message and help people understand. But we now say like preferred because I think we we believe from the research that we could say that that two pathway is preferred because it doesn't make reactive quinones that can damage DNA compared to the four hydroxy pathway.

00;53;23;00 - 00;53;42;03

Dr. Jaclyn Smeaton

But I think you're totally right in that making the leap to this is associated with cancer. We're not there yet with the clinical research. I totally agree with you and I. I'm very sensitive to overstating anything. Either we want like then we want to be in line with the science. We'd like to be cutting edge with it, but we do want to make sure that it's aligned.

00;53;42;03 - 00;53;51;09

Dr. Jaclyn Smeaton

But we do think that based on the literature, you know, there are there's a preferred pathway for estrogen metabolism versus not. And it's a it's an interesting thing to be studying.

00;53;51;10 - 00;54;06;17

Dr. Amy Killen

And I will say that my, my doctor friends who are in this space who use this test a lot, they will tell you, well, we know that the two hydroxy is a better pathway because when we get our patients to eat healthier and cut alcohol and cut smoking and do all the things, then they will move more towards that two pathway.

00;54;06;17 - 00;54;20;29

Dr. Amy Killen

So that makes sense that that's a healthier pathway. And so I think it makes it I think that makes sense. I would love, love to see more tests with patients who actually are on hormone therapy. You know, of the ones that at least from what I can see, only 4 or 5. The studies even included people taking hormone.

00;54;20;29 - 00;54;22;21

Dr. Jaclyn Smeaton

Oh, you're totally right. That was a great one.

00;54;22;21 - 00;54;38;09

Dr. Amy Killen

Was a whole different beast. And your body's making hormones. And so, you know, when when I'm thinking about, you know, doing a test like the DUTCH Test, it would mostly be because I only I mostly treat women in perimenopause and menopause. So I'm not treating younger women. So most of my patients are either on hormones or they probably will be soon.

00;54;38;14 - 00;54;50;28

Dr. Amy Killen

So how do we use tests like this. And women who are on hormones is there are there things that are different that we should be taking into account? And I think we just don't have enough information about that yet. But but certainly would love to to to know more in the future.

00;54;50;28 - 00;55;08;29

Dr. Jaclyn Smeaton

Yeah. The way that we think about it for hormone therapy we can take this off line. But I think they will be interested if they're listening is I think that, well, there's two things. One, I think that monitoring can be helpful for women on hormone therapy. If you're thinking about trying to achieve goals beyond hot flash management, that's a controversial hot take.

00;55;09;01 - 00;55;22;26

Dr. Jaclyn Smeaton

So people could disagree. We're going to get it in the comments. We like to disagree. And that's okay. It's outside of standard guidelines. But it is the only kind of hormone family we don't test. When we put people on hormones. We talk men on

testosterone, we test thyroid. And I really think that's due to a couple of things.

00;55;22;26 - 00;55;48;15

Dr. Jaclyn Smeaton

One is that if you're looking at symptom management, you don't need to monitor. You can just ask the woman, are your hot flashes gone? And if they are, you're in a suitable range. And the second is I think serum is a terrible way to monitor, we don't have a good tool for it for serums. Great. If you're on a patch, maybe where you get a steady state level, but with pharmacokinetics, with oral or a transdermal cream or gel that you're applying every day, you get this up and down pattern and absolutely it's different.

00;55;48;15 - 00;56;06;07

Dr. Jaclyn Smeaton

You like six hours, eight hours measurement later. It can look so different from woman to woman. So I think that we have limitations in testing, which this is one of the reasons I get excited about the DUTCH Test, because you get a 24 hour window with four sample, so you actually catch the whole pharmacokinetic curve. Yeah. And that I think gives you a better estimate.

00;56;06;07 - 00;56;29;25

Dr. Jaclyn Smeaton

So I think you have a tool and then you can ask, should I use that tool. And when we look at the did you see Sarah Glenn study in menopause. And I think it was February of this year out of the UK, where it was actually shocking to me that she was looking at the NHS available, like commercially available estradiol products, and whether women on different doses reached the targets for osteoporosis prevention.

00;56;30;01 - 00;56;37;10

Dr. Jaclyn Smeaton

And even at the highest doses available, about 30% of women did not hit that target, which was I was really surprised, actually.

00;56;37;12 - 00;56;57;09

Dr. Amy Killen

Yeah. Would up my news and news and and Glenn. Yeah I it was fascinating. They were all using transdermal app you know applications. But you're right. They whether it was gels or patches, a lot of them were on Macs, you know, kind of Mac's pharmaceutical dosing. And they still had the very low, at least serum estradiol levels,

which was very interesting.

00;56;57;12 - 00;57;12;16

Dr. Jaclyn Smeaton

Yeah. And there was this other study that I've looked at before, and I can't remember the name of the author. I'll put it in the show notes so people can take a look at it. It was very small. It was only like 19 women. But he actually did pharmacokinetic tracings for women, like on a patch. And then he would put them on a gel.

00;57;12;16 - 00;57;34;23

Dr. Jaclyn Smeaton

They didn't use compounded creams, but then you could see that some women like absorbed the patch, but not the gel, or they absorb the gel, but not the patch. Or there was just this like different pharmacokinetic absorption pattern. And again, it's very small, but I found that so interesting. And anyway, those things together make me think that the assumption that women all absorb estrogen the same way is probably.

00;57;34;28 - 00;57;51;15

Dr. Amy Killen

I think I think that's a very valid thing. And I think I know I did. I did an article recently on Substack about the pharmacokinetics of some of these hormones. And you're it is very confusing. So I totally agree. And so I do I do think that serum estradiol levels are helpful. But I also think you have to know what you're looking at and tell.

00;57;51;15 - 00;57;53;23

Dr. Jaclyn Smeaton

Me how you use them. I'd like which can you share how you.

00;57;53;23 - 00;58;13;26

Dr. Amy Killen

Yeah. Yeah, I mean I use them, you know, with our understanding what the pharmacokinetics are for whatever hormone I'm giving. So patch is pretty easy because you do this is pretty even level for, you know, three and a half days. But if it's anything else, if it's an oral pill, if it's, you know, gel or, and you know, any cream, transdermal cream, then you are going to get this, you know, peak thing is going to come down.

00;58;14;01 - 00;58;32;07

Dr. Amy Killen

Usually once you reach steady state, you're not going to have obviously as many ups and downs is going to be kind of up and down in a smaller range. And so and that range is is a little easier to once you understand what that range is than even if you were a little bit off in terms of when you draw it, then you're still going to be in that city state range.

00;58;32;07 - 00;58;52;27

Dr. Amy Killen

So for instance, you know, maybe your estradiol is 61 time and 85 the next time. But if you're in, you know, if you're in that range from 60 to 100 or 65 to 120 or whatever that serum ranges, then to me, I'm good with that. I do want to see that you're hitting that like 65 or so peak a gram per ML.

00;58;52;29 - 00;59;08;13

Dr. Amy Killen

Serum level. Because I think that that is what no one else agrees with me. I'm not the guidelines don't agree with me. So I'm just it's just me but I think that that's the level that we want for bone protection and maybe even regrowth of bone, you know, as well as cardiovascular protection. So I'm aiming for that.

00;59;08;19 - 00;59;20;25

Dr. Amy Killen

But keeping in mind, you know, when I'm, when they're taking the medicine, when they're checking the medic, you're checking the dose. So you have to understand, you know, when the hormones are taken to understand what's how to read those numbers.

00;59;20;27 - 00;59;34;14

Dr. Jaclyn Smeaton

Yeah. I love that you say no one agrees with me. This is just how I do it. Because honestly, like, that's how clinical medicine advances as you kind of observe your patient population and you start to do what works over and over again. So that's not a bad thing. You know, you said that because again, it's.

00;59;34;14 - 00;59;36;15

Dr. Amy Killen

Not like I'm not like off the reservation. It's just.

00;59;36;15 - 00;59;37;11

Dr. Jaclyn Smeaton

I think no.

00;59;37;16 - 00;59;58;29

Dr. Amy Killen

You have to and I but I, I totally agree with you that serum estradiol levels are confusing. Serum progesterone levels are also pretty difficult to make any you know, oral progesterone is mostly gone by the time you check it the next morning. Yeah, in the blood. So I understand the need for other testing. Yeah. And, and and so yeah, I'm on your, I, I'm on your side of that one.

00;59;59;04 - 01;00;16;19

Dr. Jaclyn Smeaton

Yeah. Thank you for just honoring having this conversation because I think, we, I, we want to be open to constructive criticism always. And I really like, I felt the true sense of where you were coming from when you put that together, that it was. Well intended to really provide good information. I think it really did provide good information.

01;00;16;19 - 01;00;37;07

Dr. Jaclyn Smeaton

So thank you for that. Appreciate that. Yeah. So I think my last question for you, Amy, is what are you most excited about for women's health? Like for all the things that are coming down the line that are becoming available to women, that are you can access in most major cities, are there elements of care that you're really excited about growing?

01;00;37;09 - 01;01;07;06

Dr. Amy Killen

I mean, honestly, I think I'm most excited about having more women getting access to just basic hormone optimization therapy. If we can move from less than 5% of women in the US, you know, over 50 getting hormones to 80% or 70% or something, that is, you know, more reasonable, we will we will help so many women, we will prevent so many diseases, and we will help women to feel better now, which I think is is a huge win for the the female population in the distant future.

01;01;07;06 - 01;01;21;17

Dr. Amy Killen

I'm really excited about some of the ovarian aging research that's going on and trying to, you know, delay ovarian aging and, you know, even potentially prevent ovarian aging. So I think that's a really cool area of research. But for right now, let's just get women the hormones they need.

01;01;21;20 - 01;01;27;26

Dr. Jaclyn Smeaton

Pretty simple and readily available. So I hope we get there. I really appreciate you joining me today. Thank you so much doctor Killen.

01;01;27;28 - 01;01;31;02

Dr. Amy Killen

This was so fun. Thank you.

01;01;31;05 - 01;01;43;24

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