Bio-Identical Hormone Balancing, The Essential Foundation For Healthy Aging Transcript

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Introduction and Guest Background

Hello. Welcome back to this episode of Doctor Talks hormones and Mental Health. Overcoming anxiety, depression and brain fog. I am your host, Doctor Cassie Smith.

I am a functional endocrinologist and today we have a special treat. I have Doctor Beth McDougall and she's going to help me explain to you guys further how hormones do affect our mental health and change lots of things which can ultimately have us with have us having more symptoms of anxiety, depression, and brain fog.

She has been around doing functional medicine kind of since it began in 1998. And so she is internationally recognized. She's an integrative physician with a specialty in multi-functional degenerative diseases.

She's the co-founder and medical director of a cutting edge bio optimization facility, Gysin and Mill Valley, California. She's an early, early pioneer in ortho molecular nutritional medicine and European biological medicine.

She was among the first group of doctors to be trained in functional medicine. In 1998. Her training in biophysical, diagnostic and therapeutic techniques, techniques based on quantum principles, and her foundation and internal medicine, earned Beth the reputation of a medical.

Detective. And allows her to creatively or allows her to create highly specific, personalized and effective treatment protocols for her patients. She's also the chief medical officer of Canobie, which is a fund with five health companies in its portfolio, and the company is, around energetic diagnostic and healing technologies.

She sits on the advisory board for Energy Medicine University and the Scientific advisory Board for Resonance Science Foundation. And so thank you so much for joining us on this episode.

We are excited to have you. And so I'm excited to talk about hormones with you. Can you just give everyone a little like brief I guess, insight into what you do every day.

So what is it like to be a doctor? Beth? Sure. Thanks, Cassie. Yeah. Well, I've been doing integrative medicine since 1998, and so I see a whole wide range of patients.

But I came right out of the gate, after graduating from an integrative medicine residency into a practice that was really focused on bioidentical hormone balancing.

So I was kind of immersed in that milieu in 1998. And, so I, I've got many patients in the early days, you know, that were just mainly interested in bioidentical hormone balancing and so I still do a lot of that today.

And then, as it happens, for a lot of integrative doctors, the longer I've been in practice and the more that I've learned, I've been able to handle more difficult things.

So I do see a lot of kind of multifactorial illness.

Hormones, Mental Health, and Healthy Aging

And, you know, like Lyme and co-infections, chronic fatigue syndrome. I do a lot of neurodegenerative diseases and cognitive decline and, hormones play a tremendous role with, with all of those conditions.

But of course, there are other factors as well, you know, whether it's infectious or toxins that need to be removed.

But what I've found is no matter what I'm approaching, be it, you know, just a menopausal women or someone with an autoimmune disease or neurodegenerative process or cognitive decline.

Balancing hormones is is the foundation. Yeah, I couldn't agree more. It's so important. And there's, you know, a lot of stigma around it. There's a lot of people who are still, you know, scared about hormones from a study from 2001, which wasn't even, you know, published correctly.

And so I think the last 25 years we've done women a huge disservice, unfortunately. And, you know, it's people like you and people like me who are trying to get this education fixed not only for patients but also for providers.

And so I appreciate that. And you've been fighting the good fight, you know, since it began, basically since before it began. Right? Before 2001. So tell us, I have lots of questions for you about healthy aging and hormones.

And I love that you have this stance. But what do hormones do for you as you age, and how do they lead to longevity and vitality for both men and women?

And with that, can you also talk a little bit about like the mental health aspect for both men and women, as far as, you know, hormone therapy and anxiety, depression, things like that.

Yeah, absolutely. Well, hormones are so important for the brain. They're actually like estradiol, for example, is is like a neurotransmitter in the brain.

So so when the levels begin to decline, it's very common for women to have anxiety and depression and also trouble with memory and trouble with clarity and of course, trouble with sleep, as well as hot flashes and night sweats and all of that.

And then it's such a simple fix, really, to just kind of supplement estradiol. And you see all of these things kind of getting better. But unfortunately, what often happens is like they're diagnosed with depression or anxiety and put on SSRI drugs and and they never work as well as just replenishing the hormones, for which the deficiency was causing the symptoms in the first place.

So I see that with women, I also see with men, you know, deficient and ropers, which is not as abrupt as with a female, but like a more gradual decline in testosterone over time leads to a similar set of symptoms for men like that leads to it to kind of diminish mental clarity, kind of diminish processing speed in the brain.

Mood changes, loss of confidence, loss of like, kind of mojo and all of that. So replenishing testosterone in both men and women can be really helpful for mental health as well.

And then I see both of, you know, sex steroids in both men and women playing such a profound effect on the rate of aging. So, for example, interesting research has come out recently that estrogen is very important for women to maintain muscle mass as they age.

And we know testosterone is important for women as well in that regard and very important for men. But estrogen, the recent research on how how replenishing estrogen in menopause can help maintain muscle mass is so important because, you know, it's been said that muscle mass is the currency of longevity.

And that's partially because muscle, muscle cells and neurons are two of the cell types in the body that have the most mitochondria. And the mitochondria are those little intracellular organelles, as you know, Cassie, that produce energy and as ATP is the currency of the body.

And if we have muscle loss of muscle mass and loss of muscle cell health as we age, the our ability to generate energy goes way down. And that that impacts those kind of like high, energetically demanding cells.

Most of all, you know, the brain and the muscles. So so if you can maintain healthy steroid hormone levels as you age, you're going to have better brain health, better better muscular mass, and then better a better mitochondrial

health overall.

And, you know, very much we age because our mitochondria become dysfunctional over time. Our mitochondria don't become dysfunctional because we age. It's more the other way around that we age when our mitochondria become less adept at producing energy, or we have fewer mitochondria to do that.

Yeah. No, I completely agree. And so we have to be cognitive of that. And we have to make sure we're feeding our body fuel in our body with the things that they need, but also making sure that we have hormones so that we don't age excessively quickly.

So can you address the newest research on hormone use and all cause mortality? Kind of, you know, talking about that, you know, we still have this whole generation of patients and doctors who say, like, you know, hormones cause cancer.

You absolutely shouldn't be on them. I know that the research doesn't say that, but do you want to do you want to talk to us about that? Yeah, absolutely.

You know, and by the way, like you, you you were saying back in 2001. Yeah, that, that, that, that the data that came out of the Women's Health Initiative study was kind of misquoted.

Hormone Therapy, Mortality, and Cancer Risk

It was really sensationalized by the the news media, and they were really focused on, relative risk as opposed to absolute risk. And I feel like doctors and patients alike were, you know, kind of duped and scared off of hormones.

And because I'd already been doing a lot of bioidentical hormone balancing for a few years before that, I had so many patients kind of get off their hormones, because they were scared by that.

The news media and then and by their other doctors. And then they kind of came crawling back in, you know, to say, okay, now my life's ruined. What do I do?

And I was like, you can still take hormones. And I would always try to explain, like the like the absolute risk was like eight divided by 10,000 in terms of an increased risk for breast cancer, it wasn't even 1% increase in risk.

And then I was like, no one's paying attention to the arm of the study where it was estrogen only, and they actually had a diminished risk of breast cancer compared to the the placebo arm of the study.

So people weren't paying attention to that at all. But anyway, so I've been helping women, you know, kind of get back on hormones. And I would say the only silver lining that came from that was that we were able to kind of I was able to find that I could help women feel just as good with slightly lower levels of hormone supplementation as they did before with much higher levels, you know, so so it was like people were scared, so they wanted to take as little as possible.

And then we found like kind of the threshold of like we can usually ameliorate most postmenopausal symptoms as well as help people have a really good quality of life with less than we thought we needed.

And so fast forward to today. Finally, there's been some really good research that has come out and and I was so impressed by the 10 million woman study that was, that came out, by the Journal of the Menopause Society in May of 2024.

Did you see that? Did you see that study? So, yes, they sort they looked at the the health data for, for 13 years of women that were over age 65 on estrogen of, of various types and either natural progesterone or synthetic progestin.

Excuse me. Versus not so 10 million women followed for 13 years over age 65. Yeah. And they found a 19%

reduction in all cause mortality in the treated group versus not but but then there was some surprising kind of myth shattering data.

They found it. They found a 16% reduction in breast cancer mortality, 13% reduction in lung cancer mortality, 12% reduction in colorectal cancer mortality, 11% reduction in heart attacks, 2% reduction in cognitive decline.

And then with progestin, they found a 45% reduction in endometrial cancer and a 12% reduction not. It's like I think it was like 20, 21% reduction in ovarian cancer.

So this was in the treatment group versus not. And so it shattered the myth that, you know, that hormones have a increased risk of breast cancer. And it shattered the myth that they were only safe to take for five years, if at all.

You know, and I'd been saying that for so long. I'd been saying, like, what? Why is it safe to take them for five years and then not after five years?

Like, show me the data that says that there's like, this cut off point. And, this finally was like a drop the mic moment. So that was exciting. Yeah. Because what I find in my patients, and maybe you do as well, is that if you do have these women that you get on really good hormone, you know, therapy and their symptoms are mitigated and they're living life amazing.

What what I have found recently is, you know, maybe they get a developed they develop breast cancer, you know, God forbid they do. It wasn't because of the hormones, you know, it's they got breast cancer.

And then somebody yanks them off of their hormones and they lose their minds, you know, like they feel awful. And so then that's unfortunate. And then they're told like, oh, you can never go back on hormones or I have, you know, other patients that are on hormones and, you know, they approach 60, they approach 65, they go to their primary care doctor, their primary care doctor says to them, oh, your endocrinologist is trying to kill you.

You need to come off of those hormones. And they've seen that primary care doctor for 40 years. And so they tell me, you know, I've seen him forever, so I'm going to stop him.

And not that I don't believe you, it's just that I believe him. And then they stop and and then a year later, they're like, their blood pressure is high, their cholesterol is high.

They can't remember anything. They're gaining weight, you know, they're miserable. And it's just like. But but then they go back on the hormones to your point and they feel better.

And I have a ton of women that have been on hormones for, you know, decades that I, you know, because of the way that I practice and the way that I preach and what I put on social media have found me because other doctors will not give them hormones because they're 65, 70, 75.

And they do amazing. You know, like I've got some of the biggest. Yeah, some of the healthiest people. Age to you. You can just see this kind of like, like departing graph, like you watch people.

And because I've been practicing long enough now, I, I've watched a lot of people age. And those that stay on hormones tend to age at a much slower rate.

Their reflex hurts, their reflexes are faster, their their brain is quicker, their memory is better. Their their muscle mass is better. Their energy's better. They're sleeping better.

They're more active. They're they're kind of living the lives that they've been used to living. Whereas those that stop just it's it's kind of like a slow, slow downhill trajectory.

Yeah. Yeah. And so I think that this study that came out, you know, is, is wonderful looking at all cause mortality and showing that actually know you have a decreased risk of all cause mortality.

And I think a lot of that. You mean you can speak to this? I think a lot of that is tied to the fact that when you lose hormones, you develop a lot of inflammation.

And when you develop a lot of inflammation, you develop insulin resistance. To your point, you stop sleeping, you have inflammation in your brain. I mean, there's so many things that hormones affect.

And, you know, when you make sure that somebody has those levels and those levels are replaced, it's just your body works in a symphony so much better with those hormones. Yes.

Yeah. Absolutely, absolutely. And you were bringing up the point of like people that develop, cancer while on hormones. Thank you. I was about 2008. Can't remember the authors of the study, but they looked at women who developed breast cancer while on estrogen versus women that develop breast cancer, not on estrogen.

And and it turned out that those that were on estrogen, the cancer was typically of a lower grade and less likely to have metastasized, than those that developed cancer, not on hormones.

And I think it kind of speaks to this idea that that the, the hormones create a kind of, milieu that, that cause the cells to, to function, behave a little more normally as opposed to completely dysregulated.

So that was an interesting study. And it went and I think now combining kind of all of these data together, it doesn't it we're not seeing an increased risk in developing a cancer from taking the hormones and potentially if you develop a cancer, you're going to have an easier time getting rid of it because it'll be of a lower grade.

Yeah. And there's actually been studies too, that have shown that if you take women who have had breast cancer and then you follow them after breast cancer treatment, and you look at women who don't go back on hormones versus women who actually do go back on hormones, all cause mortality is lower.

And recurrent risk of cancer was actually lower in women that go back on hormones after breast cancer. So I think. That's pretty interesting too. And that makes sense, right?

Because if your brain is working and you don't have insulin resistance and you're not obese, like, what are the two like? This is what fires me up about cancer.

The two most common, risk factors for developing cancer age and weight loss. Yeah. That's right. So if you're an old and you're obese, you're probably going to get cancer.

You know, even if you're not old, if you're just morbidly obese, your risk of cancer is so large. And like, how do you keep people from becoming obese while you fix their mood, their insulin resistance, their muscle mass?

You make them want to move. You know? I mean, hormones, like that's how you fix this. And so it's just it's crazy to me that people still still say that and still believe that. How?

Tell me how four mons affect your brain as you age. It's that's you know, I say this. I say this all the time and people kind of laugh at me. But like, heart disease is the number one killer, right?

Breast cancer kills tons of people. Colon cancer. But none of this matters. People. If your brain doesn't work, like if you develop dementia, it doesn't matter.

You know, it doesn't matter that you don't have breast cancer. It doesn't matter that you don't have heart disease or that you do like your brain is very important.

So this is very near and dear to my heart as well. So as you age, what happens with your brain and how does hormones affect that? Well, again, just going off my history, it's been so rewarding to treat people with hormones because women will come in like petrified, like, for example, that they are developing Alzheimer's or something because they're forgetting things.

Hormones and Brain Health

They can't remember, friends names they can't remember movies they've watched, who starred in the movies they can't even sometimes remember names of places they've been, or they're starting to call things the wrong thing.

Like, for example, someone be like, I'm going to go and pull the milk out of the washing machine, or I'm going to go, yeah, you know, put something in the, you know, in the refrigerator.

And they but they say dryer or whatever. And their family's making fun of them and it's just, you know, but they're truly scared and you put them on hormones and literally within, like, two days, like their memory comes back, they stop doing the word substitutions.

They stop having trouble with name recall and word finding. And and it's it's so gratifying, you know, to to over thousands and thousands of women that I've done that for.

And then it's been so cool to see recently, some really good published studies like I saw it, Lisa mosconi study that was published in nature this year was kind of like a another landmark study where she was looking at estrogen receptor density in the brain, and, and studying women that were premenopausal perimenopausal and menopausal and found that, that as estrogen levels in the body were declining, estrogen receptor expression in different brain tissue was going up and the density of estrogen receptors were increasing in different brain structures.

And the the higher the density of receptors, the lower they were scoring on memory tests. And so it was almost like as the estrogen levels were declining, the brain was like trying to suck up every last little bit that, that you didn't buy, like because they, you know, it was so critical and vital for the functionality of these neurons.

And, and then another cool thing from that study was that, you know, previously we thought, like, after you've kind of allowed your estrogen to decline and you've waited a while before going on to hormones, that's how your five years post menopause, then it's kind of too late.

You know, they were like, yeah, there's really nothing you can do. That was kind of another myth that was shattered this year when when it was shown that you go on estrogen and you will start to remodel the brain tissue, you know, you will start to reduce those kind of receptor density in the various tissues.

And because like it's the brain is finally getting fed what it needs. The other cool couple studies like that, some dating back to 2023, were looking at gray matter volume changes in women, with reduction in estrogen with time.

And they kind of compared like women that went into menopause while on hormone therapy versus women that chose not to do hormone therapy. And they looked at like volumetric changes in the brain and found like diminished brain structures, you know, the volume of brain structures in untreated women.

So. Yeah. And I think a lot of that has to do with like, blood flow, you know, so a lot of these hormones help with blood flow to the brain. So it makes sense.

I mean, blood flow to all the organs but definitely to the brain. And I see this a lot with with patients as well. It's really sad. You know, the women who I'm not going to take hormones because my mom had breast cancer.

And you see them when you take care of them. You know, I've been doing this for almost eight years now. Like you can just see the cognitive decline and it's it is it's really sad because when you get people on these hormones, it comes back so quickly.

And I think it's because of that, you know, vasodilation that you get. And so yeah, it is, it's and and when you have blood flow to the brain, it also helps with your mood.

Right? It's obviously like it's going to help with your mood. It's going to help with your sleep. It's going to help with your memory. So that brain fog that people talk about, I mean, it is a real thing, but it somewhat is reversible as

well, which is nice, right?

That is the cool thing. Yeah. It's almost never too late. Yeah, for sure. So what hormones do you pay attention to when you're balancing hormones and what does like what do you use?

Why do you use it? So what are you looking for? Well, I pay attention to all the hormones. That's that's I think why I've had a good, good success over the years.

And what I have found, especially in, in Western medicine, that a lot of times doctors will over supplement one hormone to the exclusion of others. And so you have to be more heavy handed, you know, with one hormone if you're kind of ignoring deficiencies in other areas, and then you end up with creating just greater imbalances.

So what I like to do, we'll start with females is that I'll, I'll look at their adrenal cortical steroids as well as their ovarian steroids. So like cortisol DHEA pregnant alone and testosterone and then also estradiol and progesterone.

And I will look at thyroid carefully as well because there is there's all of these kind of counterbalancing relationships between all these hormones. So what I found is that, you know, if you're supporting, for example, some of the adrenal hormones that are hormones in their own right, but also precursors to the production of estradiol and testosterone, then you can often facilitate some natural production of those, and you won't have to supplement as much of the those end hormone.

So for example, it's common for me to put someone on DHEA protein alone and see how well that converts into testosterone. For example, sometimes it converts very well.

They don't need supplemental testosterone by itself. Other times they have poor conversion. And they need also to be on testosterone. And and then you see like, how does that convert into estradiol?

You know, perhaps there's a little conversion. So then you can get by with a much lower dose of estradiol and then complement that with some natural progesterone.

And then then the thyroid plays a huge role. Like I found that the thyroid and estradiol are kind of on a teeter totter. Like you've got mild, thyroid deficiency.

You won't metabolize estrogen as well, you know. So like the the the more thyroid you have, the more estrogen you need. And then vice versa, the less thyroid you have, the less estrogen you need.

So so it's like almost like a deficiency. And one can kind of like, you know, be the made worse, so to speak, give you over, supplement the other. So you want to try to kind of get everything in good balance.

And then for men again that if you focus on the balance of everything, you're going to have much better results and possibly have to supplement less, testosterone.

So, so oftentimes I'll even start off with a guy, if he's got like a mild testosterone deficiency, I'll start off with some of the adrenal cortical steroids that are precursors to testosterone and also hormones in their own right.

So DHEA pregnant alone, I'll see how well they convert into testosterone. And then either I also supplement testosterone or not, depending on what their needs are.

And then also pay attention to how that testosterone is being metabolized. So looking at that, like that conversion of testosterone to dihydrotestosterone, the realm taxation of testosterone to estradiol and trying to work on, you know, kind of blocking the those, the production of those kind of metabolites if necessary.

And then again, paying attention to the thyroid as well. Yeah, for sure. And how do you feel about or just around in men. Do you.

Balancing Hormones and Treatment Approaches

Yeah. I mean I haven't done much with progesterone in men. I know some people do. It just feels to me not physiological and have a little progesterone.

But not a lot, you know, so it's like supplementing it. You're going to have you're going to end up with more than they would have naturally. Yeah. And I, I'm a big proponent of like Nino.

And you can give that to me as well. And so yeah, it's kind of where I tend to start with sleep. Obviously fixing testosterone helps their sleep as well.

But yeah. Yeah. Okay. So tell me. Yeah. And then obviously balancing hormones making sure you that balance. Right is important because I think that's why hormones get a bad name.

Right. Because some people you know there are certain clinics or certain providers that everyone gets the same dose of every hormone no matter what. And then obviously you're going to get side effects with that in some people.

And then I think, you know, that's where unfortunately, hormones get a bad name when everyone is is getting the same amount of things and you end up with with bad reaction.

So, you know, I tell people the right type of hormone in the right, dosage and the right delivery mechanism is very important for each person. Yeah, I so agree. Yeah.

It's certainly not one size fits all. It's a very delicate, nuanced system. And so, for example, one type of administration that I don't like because I spend a lot of my time undoing the damage that I see that other providers kind of inflict is, is the is the pellet therapy?

A lot of people are treated with hormone pellets and their levels go way too high. So, for example, a lot of men are on testosterone pellets and no one is paying attention to how they're being metabolized.

And they have, you know, let's say total testosterone levels in the 1500s, 1800s, they come into me, I'm not the one to put the pellets in, but they come in and I'll find that their estradiol is incredibly high.

You know, maybe like a bit like 58, 60 should be, you know, 30 or less. I'll find their dihydrotestosterone as high. I'll find their PSA going up. I'll find their hematocrit, you know, and red blood cell count going up.

And so we have to just kind of do undo all this damage. And then they have to just kind of, you know, we're compensating for this and compensating for that and compensating for this while we're waiting for that super high level of testosterone to kind of like, you know, fade out of that is the system, which can take months.

And so I much prefer a type of administration that you can adjust, you know, very readily. So whether for men, it is using a transdermal testosterone cream or, a weekly or two time weekly injection of testosterone super eight or something like that, where you know, you can you can quickly change the dose of it if you're not, if you're metabolites are too high, or you can kind of begin to course correct sooner and you have the power to do that, like with pellet insertion, once they're in, they're in, you really can't go in there and dig them out, you know?

So so that's that's what I favor for men and then for women, I think that there's, there's a quite a few different ways you can go about it. So for, for women, most of my patients and myself, we, we kind of favor the bioidentical estradiol patch, because of the kind of steady delivery of the hormones.

It's like, you know, this is a bioidentical patch that you apply to your skin, and the hormones are metered into the bloodstream in a very steady manner throughout the life of the patch.

The patch lasts, half of a week. And if someone's good about replacing the patch on time, you will have a fairly

steady state of hormones. They'll be a tiny bit of a drop off, but, you know, end of the patch life.

But it's not too abrupt usually. So that's that's one way for estradiol supplementation. And then I do like, hormone cream. So we can compound up hormone creams either with estrogen all by itself or by estrogen type cream that has ethyl and estradiol in it.

And usually, if that's supplemented twice the levels are fairly consistent. And if you have a super thin woman, you do get a little bit of a roller coaster of kind of like an up and then a down and then again plie later and up and down.

So, so it just depends on how sensitive someone is to the fluctuation in the estrogen level. But but usually you can kind of, you can keep it pretty steady and smooth with an estrogen cream.

And then there's trophies that you can create that are kind of under the tongue, with by estrogen or just after dial. There's of course vaginal types of preparations that you can make.

And then for progesterone again, you can do transdermal or oral. You know, there's better data on oral progesterone and, there are some benefits from oral progesterone, such as, when taken at night.

There's a metabolite of progesterone called, although pregnant alone, that's very good for sleep. And, so some people love that because insomnia and difficulty with sleep and propensity to anxiety is higher, you know, in menopause.

So this tends to be very calming and sedating. And some of the downsides is that occasionally peop there's a lot of biochemical individuality from women to women in terms of how much they make of that metabolite pregnant alone, how readily they can clear it out of the system.

And so for some women, oral progesterone given at night leaves them feeling a little sedated and dopey in the morning. And for other women, it can even compound, you know, day upon day.

And then eventually, you know, the level kind of milk kind of has carryover all day long, and they can feel kind of out of it. So in those cases, then, you know, there's a ways around it of like not taking it every single day, doing it more cyclically or lowering the dose a little bit, or, just switching to a transdermal supplementation.

And, for testosterone, you can do, either oral or transdermal. And I know some people are moving to injectable for women. That's a little tough because the injectable preparations are really strong and the amount you inject would be very, very small.

But it is something that some women really like. But normally I use oral or transdermal for testosterone. And there's some advantages of the transdermal for women, like sometimes women, when they move into perimenopause, menopause, their libido goes down and the there's the sensation that they have with orgasm goes down to their orgasms become kind of uneventful and like a little blip.

And they just kind of lose their intensity. And so you can use a transdermal preparation without alcohol in it that you can apply directly to the clitoris and labia area.

And that can both, you know, enhance like your libido, but also kind of enhance blood supply and, and revitalize nerve endings and make the orgasm a little bit more, dramatic.

Again. Yeah. So however you decide to use hormones that you need to have a provider that is comfortable prescribing this comfortable understanding dosage, etc., and also making sure that they understand all the different hormones that are at play and that need to be, I guess, replaced.

Right? That's right. So, so that we're not overdoing one thing and under doing something else. That's right. Okay. And then can you give an example or a couple examples of people who come to you with imbalanced hormones and what you've done to improve their health.

Like what should you expect if you're somebody listening to this and you think, yeah, maybe I need my hormones balanced, what should they expect from balancing their hormones?

And in doing so, let's talk also about like anxiety, depression, brain fog as well. Gosh okay. So let's talk men first. So like I said, I spend a lot of my day kind of undoing these, these cases where men are over supplementing tests on, either from pellet insertion or even just injectable.

So a common case I'll see will be a man that's that's in one way or another over supplementing testosterone. And let's say that, you know, the, the, the optimal zone of testosterone is going to be somewhere between 600 and 6 50 to 1200.

Let's say, you know, some some guy may come in and his testosterone is 15, 1800 and then the higher it goes, the more it drives a romanization and kind of conversion into dihydrotestosterone.

And then let's say they have high levels of estradiol, high levels of DHT. Now we're starting to see some PSA elevation. So it looks like it's bothering their prostate.

We're seeing some high up like hemoglobin hematocrit, red blood cell. So now they have to go have a therapeutic phlebotomy to pull some of the blood out of their system.

And you have to put them on kind of aromatase inhibitor like whether it's natural like something like frozen or or a pharmaceutical, like like procedure or the one for Inox, the one for hairdressers or property.

Excuse me. Or you have to kind of do things to augment, like the clearance of estrogen out of the system, like calcium glue. Great. Or something like that.

But but a lot of times what we can do to fix that is to is to, you know, reduce either way for the pellet to, to clear out of the system or reduce their injectable to a much smaller level.

And then when you reduce the conversion of the testosterone to the to the metabolites estradiol and DHT, that simultaneously will lower those metabolites and raise testosterone at the same time.

So you can often get by with with less and end up with a better result, particularly if you're also supplementing some of those kind of adrenal, steroid precursors, like like we were talking about earlier, DHEA impregnate alone.

So that would be like an example of of a guy that comes in, you know, and he's in he his hormones are in balance. And what we have to do to fix that, unfortunately, I'll see sometimes that, you know, someone's had imbalanced hormones for long enough that now he actually does have prostate cancer, you know, and then then that's a whole different discussion of like how to handle it going forward.

For women. And you want me to kind of tie this back to the brain, you know, so sometimes women will come in and they, you know, either are not on enough estrogen.

I'll. And so that's not enough to improve their, their anxiety, their depression, improve their sleep. So a good fix there would be to kind of bump up the dial in, maybe work with some if they can tolerate oral progesterone, because then you're going to get a calming of anxiety.

You're going to get an improvement of sleep, which will ultimately have a brightening effect on the mood. Everyone knows you're going to have a better mood if you sleep better.

So that's that's one thing. But like what I would say a lot of times is that, again, there's like overly heavy handed supplementation of hormones and that's kind of exacerbating, women's metabolisms.

So, for example, I don't I have seen many times that women come in and they're on way too much progesterone. And progesterone is a precursor to cortisol.

And then cortisol raises your blood sugar, which then causes your body to make more insulin to bring it down. And so if you're constantly in that state of like higher cortisol, higher blood sugar, higher insulin, you're going to develop worsening insulin resistance.

And so I have seen that people have not only, you know, kind of that sedated feeling in their day, but they have like, you know, belly fat accumulation and fluid retention in and there they have large breast enlargement and they just feel like they are wearing, like a fat suit.

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And one way to, to kind of turn that around is to, to reduce the amount of progesterone they're taking in, do it more in a cyclical manner, like the, you know, Mother Nature did, where you're only making progesterone half of the time, you know, from ovulation and menstruation, not all month long.

And so you give the system a break every month so that you can clear out those metabolites and clear out the progesterone. And it's not going to like kind of accumulate in the system.

And a lot of times you can right the metabolism that way. So are you saying to do that even when women are you're replacing estrogen like in a post menopausal period.

You're not worry about leading if you're doing that with progesterone like cyclic. Yep, yep. And there's so many there's no one right way to do it. Like it's not that you have to go two weeks on, two weeks off, two weeks on, two weeks off.

Because then it is possible that you could have a little bit of a, withdrawal bleed. But you can even do you can get creative. You can be like, I do it, five days a week and I take the two days off, you know, so that like, over the month, period of time, you know, you're collecting a number of days off so that you can you can clear out the metabolites, like, I think it's been shown.

And I don't appreciate this. I don't love this approach, but I think the data shows that you need to take progesterone 12 days out of every quarter in order to protect the endometrium.

And so. How often. Out of every three months? Three. But my fall back in my whole career has been like, what does Mother Nature do? You know, like literally were designed a certain way.

And like, I think after, you know, what do we say millions of years of have a lesion, there's probably a reason for it. Right. And and so like, you know, at least half the time I think we should be using progesterone because it's not just about protecting the endometrial.

It's also that estrogen and progesterone have complementary and opposing actions in the brain in in the breast tissue, you know, in the muscles, in the bones.

It's like everywhere. So so, so to me, you probably need more than 12 days a quarter. But but I think that, that you do need breaks. And so, you know, I have patients I take, take their progesterone 20 days out of the month and ten days off or 25, you know, so but, you know, five days a week and two days off or four days a week in three days.

Then you can do it in various ways and usually prevent any sort of building a buildup of the lining and bleed. Okay. So I think this was very informative for people.

Kind of some take away points, you know, from what I heard you say is that, you know, hormones are very beneficial as you age. If you are doing hormone replacement therapy, you're going to age more gracefully or better and that it actually lowers your mortality.

And it is good for your brain and that there are different ways that you can, you know, supplement hormone therapy depending on what the patient is comfortable with.

But hormones do not cause cancer. There's plenty of studies recently that show that they are safe and very effective with helping us age gracefully and decrease mortality.

Is there anything else you want to add to. That you got? I mean, you've basically summarized perfectly. Yeah, that's exactly my my stance on it. Okay. So tell everyone listening, I guess, where they can find you.

All right. You know, do you still see patients. That sort of thing. Yeah. So, people can find me at Kaizen, which is a bio optimization center that I helped found here in the Bay area.

And, I do still accept patients, but not very often. But myself and all the other doctors advising are well skilled in bioidentical hormone balancing and have been doing it for years.

And, yeah. You can also find me on Instagram that McDougall, MD and my book, your pristine blueprint. Your pristine blueprint. Okay. And we'll put all of that in the show notes, obviously.

But I just want to say thank you for everything that you do. You've made a career out of making people feel better and not going with mainstream, but going with actual science and literature and listening to people.

So I appreciate that. And thanks for coming on and for your time today. Thanks, Cassie. I really appreciate it. It's been fun.