

## Male Hormones: How Testosterone and Toxins Mess With You – Tracy Gapin, M.D. – #976

Dave Asprey:

You're listening to The Human Upgrade with Dave Asprey. Today, we're going to talk about testosterone. As you know, I think testosterone's a game changer if you need it, but we're going to talk about why maybe sometimes you don't and what else is responsible for making your hormones work? We got to admit male testosterone's dropped more than 30% in the past 30 years. Thank you, soy boys, PETA, plant-based diet and big food nonsense and lack of minerals in the soil and blue light pollution and a bunch of other stuff like plasticizers.

We're going to talk about it in this show and what you're going to learn, so it's worth your time, is what creates the epigenetic signals that turn your genes on or off for testosterone and other sex hormones. Testosterone, as you probably know, affects men and women, so this is really important. It affects men and women, because we both have it and because if women are low in testosterone, they hate their men. And if men are low in testosterone, they tend to hate their women. Maybe hate's a strong word, but bottom line is you get angry and cranky at other people when you don't have enough testosterone, because testosterone is the hormone of desire, not just in relationships, but desire for everything.

I think it's important and we've got an authority on this who will be at the bio hacking conference coming up. His name is Dr. Tracy Gapin and he's just a fantastic expert in testosterone, who works with epigenetic coaching, hormones, peptides, biometric monitoring, nutrition, lifestyle. It's not just testosterone, it's all the stuff that comes together. He is the founder of the Gapin Institute for High Performance Medicine and created something called the N1 Performance Health Program. Just got a copy of his book, it's actually laying over there by my infrared mat called, Male 2.0: Cracking the Code to Limitless Health and Vitality.

Here we go, I've got a real doctor who maybe wasn't doing it right himself, who turned it all around when he was 42. Welcome to the show Dr. Gapin.

Dr. Tracy Gapin:

Oh, thanks so much, Dave. Glad to be here with you.

Dave:

All right, you're my favorite kind of doctor, because you're a member of the American Academy of Anti-aging Medicine, where I met the mother of my children in 2004, and where I've lectured many times. This is a group of the most progressive anti-aging doctors. It's where functional medicine took its roots and it's [inaudible 00:02:55]. Being a fellow there is a big thing anyone should look for when you're looking for an antiaging or a functional doctor. All right, tell me about why you write your book about men's health, it's personal for you.

Tracy:

It is. Yeah, Dave, a brief background, I'm a board certified urologist. I spent 20 plus years in traditional medicine and everything changed for me when I developed my own health issues about gosh, it was about 10 years ago now, Dave. I went to one of my colleagues here in town, in Sarasota, Florida, to get help and I had a very eye opening experience when I realized that we don't have healthcare, we have disease care. We have crisis care here in the US, where we're just taught as doctors going through our training, how to treat disease and treat symptoms and diagnose you with your ICD-10 code and do surgery and give you prescription medications and do nothing to actually optimize your health, or

promote health, or promote longevity. I experienced that myself when I woke up one day, I'm 30 pounds overweight, I feel like crap and I have no focus, no drive, no energy and I didn't like who I'd become. This concierge doc couldn't help me and that got me on this quest to really learn how to transform my own health.

In the process of doing so, I joined American Academy of Antiaging and I learned about functional medicine and epigenetics and how to incorporate peptides and use wearable technology and take a systems biology approach to health to optimize. I was able to transform my own health and started transforming the lives of the men I was working with. I realized, Dave that I finally found my purpose and passion in life. After 20 plus years in traditional medicine, I made the very courageous decision to step away from disease model medicine so that I could focus on what I call high performance health and that's where the Gapin Institute was founded.

Dave:

It takes a ton of courage for a doctor to do that. How much of your traditional medical knowledge do you use when you're doing high performance health? I mean, you're a urologist, you know a thing or two about... Well, I don't know what the technical word is for it, but dicks.

Tracy:

No, that's a great question. If you asked me how much did we learn about testosterone and hormones and peptides and functional medicine in urology residency, I did six years of general surgery plus urology training, it would be zero, Dave. We learned nothing about what I'm doing now in my urology training. Yes, I still deal with some prostate cancer. Yes, I still deal with some traditional urology stuff. But I would tell you 99 plus percent of what I'm doing is from the extra training and certification courses and education that I went through over the last 10 years, because it's a passion for me to help me be the best husband, father, leader that I can be and to help bring that to my patients. Dave, it's really a completely different way of looking at health. It's no longer about just treating that symptom or treat that problem or that illness, it's about optimizing, it's about taking your life to a whole new level.

Dave:

All right, let's go back 15 years. You're in practice, a guy comes in, lays his belly on the counter. By the way, I'm allowed to say this stuff, because I was a 300 pounder who would've done this. And says, "Doc, don't have a morning kickstand anymore," what would you have done?

Tracy:

Yeah. Well, I tell you what, that guy would come in and he'd be asking for two things. He'd be asking for a testosterone shot and a blue pill. In disease model urology, that's what he got.

Dave:

Did it work?

Tracy:

No. Hell no, it didn't work. He'd come back and then ask for something else. That was the problem, we would just pass him down the line because we literally have six minutes for every guy that walks in the door in that office. Do you think during that time, I can talk to him about stress and cortisol and sleep and nutrition and epigenetics? No, it's short term Band-Aid fix to that problem because that's all disease

model world is set for. Now, I spend an hour with that guy going through all of the facets, all of the inputs into his human system that are ultimately affecting his sexual performance, that before I didn't have the time or really the wherewithal or knowledge to address it the right way.

Dave:

When you have your initial meeting with a patient, how long is it?

Tracy:

About an hour.

Dave:

There you go. If you're listening to the show right now and you get your first meeting with your doctor and it's under an hour, that's a red flag just right there. There's no way a functional doctor or someone who's going to help you manage the system of your biology can even get a basic assessment of you until they get that amount of time. I've had lots of meetings, keep mind I was pretty sick and I've seen way more people than the average person because of mold and metals and all kinds of stuff. I've had people, the first meeting is two hours. It's four hours with some doctors. They really have to go in there.

How many labs do you typically order after you see someone for an hour?

Tracy:

Oh, gosh. We do a lot. As part of my performance health program, first of all, it's understanding what's the guy dealing with and we work with men and women. I want to be clear when I say guys, it's patient [inaudible 00:08:48]. But it's what are his challenges, what are his goals, because that's going to direct where we go. But we may do over 250 different blood tests. We're going to do a saliva cortisol test, we're going to do microbiome testing, that means poop tests. We're going to look at your stool and look at bacteria, look at signs of inflammation, gut health. We're going to look at blood tests related to organic assets and that's really the start. Then we do cheek swabs, looking at genetics where we're looking at over 700,000 genes, where we will pick and choose the ones that are most impactful when it comes to this guy's health. It's all about data, Dave and how we can use, leverage and incorporate that data into health.

Dave:

You know who first opened my eyes to this? I've credited him in a couple of my books, he's written a post on the article, I think he's been on the show a while ago, was [Dr. \[Philip Lee\] Miller](#) from Los Gatos. Years ago in my mid 20s, he's the guy who showed me I had lower testosterone than my mom. He probably still does antiaging.net or dot com, very early adopter here. He would do an Excel spreadsheet with all my labs and go, "Look, they change over time." I was like, "Holy crap! That's what I do at work with networking protocols. You can do that?" I like to credit him with lighting up my data thing. And gee, where'd he learn that? A for M he was [inaudible 00:10:15] guy. I think he's still practicing in Santa Cruz, but probably not full time.

It's incredible what happens when you just start saying, "I'm only going to do what works." I just started throwing out all the crap that didn't work and that's what a good doctor should help you do. They'll throw out a lot of pharmaceutical crap, but don't some pharmaceuticals work some of the time, like the little blue pills, don't they give you a kick?

Tracy:

Yeah, you bring up a great point. I think it's the integration, it's understanding when you can use pharmaceuticals, when they might be helpful. For example, Metformin. Metformin is a pharmaceutical, it's been around forever for non-insulin dependent diabetes, for Type II diabetes. But there's actually a place in Metformin when we're looking at longevity and activating AP kinase. There are situations where I do find utility for prescription medications. Now, am I going to give every guy a statin? Hell no. Am I going to give every guy prescription medications? No, but there are in certain situations a time and a place for it.

Dave:

Are you pro Metformin?

Tracy:

Great question. I think that it needs to be personalized. I don't typically recommend anything across the board for everyone. I think that if you're older versus younger, if you're an athlete versus a non-athlete, how active you are, there are a lot of nuance that goes along with Metformin. Yes, it activates AP kinase. But yes, there's definitely obviously, as you know, controversy around that, so it's personalized, yeah.

Dave:

I was a pro Metformin guy starting in 2004. Because 2003, the first mouse studies came out. I'm like, "I'll take that, I'll do everything." I ended up meeting with the biomarker pharmaceuticals guys who did the original research and started a company because Metformin mimics caloric restriction. After several years of doing it, I'm like, "I don't think it's right." When you look at the studies now, it does inhibit mitochondrial respiration, which I think is bad. If you have diabetes probably good, but if you're taking it for antiaging, I think that the intermittent fasting is a better choice. But I could be wrong too, I'm open to the data, but-

Tracy:

I tell you what, the tame trial, if that trial ever comes out, which I hope it will in the next couple years, that's going to be very enlightening and helpful. But you're right that there's controversy around it, there's nuance. And do I recommend it for everybody? No, but there certainly is a time and place for it. Especially someone who has issues with insulin resistance, metabolic health, glucose regulation, sort of thing. That's the kind of guy where it could definitely be helpful. Impacting fitness and impacting mitochondrial biogenesis and all that is definitely the downside to it, yeah.

Dave:

Makes sense, it's a double edged sword. All right, we have an epidemic. There's a lot of obese people right now, more than ever before in the US in recorded history. I just want to make it really clear, it couldn't have anything to do with chemicals sprayed everywhere or the drugs or big food, because those guys only have our best interests at heart. Try eating crickets, I'm sure it'll fix it. Now that we've exonerated them so that we can maintain our presence here, what's going on?

Tracy:

Great point. I call it a testosterone pandemic that doesn't get the attention it deserves. Where, as you mentioned, testosterone levels over the last 30 years are down by about 30%. Free testosterone, which

is bioavailable, active hormone testosterone is actually down over 45%. This is really important. We're not just talking about sex and muscle, we're talking about a man's life and cardiovascular health and cognitive function. The culprit can be debated, but without question, one of the biggest ones in my mind is endocrine disruptors. Toxins, chemicals in our environment that are clearly crushing men's health, clearly crushing testosterone. It's the food we eat, it's the water we drink, it's the personal care products. It ubiquitous, it's almost everywhere and it's getting worse.

Dave:

I'm pretty sure it's those little pine trees where there's 17 of them hanging from your Uber driver's thing.

Tracy:

Yes.

Dave:

That's probably solely responsible. Just the amount of endocrine disruptors in stupid stuff like that and Febreze and all these other completely unnecessary and actually harmful things we just keep doing and we're exposed to all day long if you're in those environments. It's one of those things where it's so complex. There's no one thing that we know is causing it, because it's not one thing that's causing it. It's like, "What one thing causes bread? Was it the yeast? Was it the flour? Was it the water? Maybe it was all of them and the oven," right? We've got to unbake the loaf of bread. One of the things that we do know is like you said, you've got a 45% number for the drop in testosterone, I've seen 30%. But one thing I do know, when I go to buy pants, the diameter of the thighs and calves of men's pants has been shrinking for the last 15 years. I actually have calves because I have testosterone.

Most brands of jeans today, I cannot wear because I can't get them over my calves. I am not a bodybuilder, I'm reasonably fit. I don't look particularly different from most men in the '70s. I'm probably a little bit more muscular genetically, but I'm not the guys who spend two hours in the gym, I spend 10 minutes at Upgrade Labs a week. All right, what's going on? I think it's testosterone. Literally we're wearing women's jeans now instead of men's. Have you noticed this, the muscle mass in men is declining as their testosterone is declining?

Tracy:

You're absolutely right, Dave. It's increasing visceral fat, it's decreasing lean muscle mass. It's declining cognitive function, deteriorating cardiovascular health, it's deteriorating metabolic health and it's all related. It's all related to this endocrine disruption soup that we are bathing in on a daily basis. It just doesn't get any attention, which is unfortunate, and so what I am on the rooftop screaming about is filtering your water and eating clean, organic, fresh fruits and vegetables. But our drinking water studies show that it's laden with toxins, is laden with estradiol, women's birth control is at very high detectable levels in drinking water. Are you filtering your water that you're drinking every day? These are important little micro decisions that you can make on a daily basis that are impacting your health, impacting your performance in every area of your life.

Dave:

How would someone know if they didn't have a lab, that they were low on testosterone?

Tracy:

Great question. A lot of guys come in with low energy, fatigue, brain fog, lack of focus, lack of sex drive. But I see so many men who have none of those, Dave and they will think that they're fine. They have a random lab test done by their primary and it shows that it's low and then they come to see me. It's surprising how many men will have relative lack of symptoms. Now they'll have signs of low testosterone, they'll have truncal obesity. They'll have belly fat, they'll have issues. We know that low testosterone actually is associated with increased risk of cardiovascular disease. You tend to see higher LDL levels in guys with low testosterone.

Dave:

That's really important. If your LDL cholesterol is elevated, it could be because you're low in testosterone or possibly thyroid too, right?

Tracy:

They're all related. Now, I'm always careful about saying causative. Does the low T cause it, or is it related to it? It part of a constellation, a picture. But this metabolic syndrome that we see every day, which is guys who have hyperlipidemia, they have truncal obesity, they have low testosterone, they have insulin resistance, they have sometimes blood pressure issues, they're all related.

Dave:

Just like me, before I was 30. Yeah, those things.

Tracy:

There you go. And these guys are walking around, not recognizing that there's a real hormonal imbalance and it's causing problems.

Dave:

All right, you go to the doctor. Like, "I've got some of these symptoms, I can't lose weight, I go to the gym. I think I eat reasonably healthy," even though you probably don't. Maybe you don't always wake up with a normal male experience when you wake up, so you go to the doctor. What labs are they going to run? What's your testosterone? What do you recommend?

Tracy:

Yeah, great question. I see this all the time. Guys will go to see their primary care doctor and they'll check a total testosterone and they'll tell them, "Yeah, buddy. You're normal, your testosterone's normal." This makes me cringe and I want to take just a moment just to go through this because this is such an important point, that there is no normal testosterone. When you look at a lab, you look at the right side, forget what your number is for a moment. You look at the right side and you'll see this range. It'll say something stupid, like 200 to 790 or something like that. At the top it'll say reference range. It does not say normal, this is reference. What is the reference range? It is the statistical bell curve average of the population of all the millions of lab tests that have been done. We just got finished saying 10 minutes ago that studies are showing that free T is down 45% over the last couple decades. Therefore, that reference range just keeps shifting lower and lower, but yet traditional doctors, traditional primary care doctor, even urologists will look at that number and oh, you're in the reference range, you must be normal. I have to call nonsense.

Dave:

Where should it be?

Tracy:

Great question. What we want to see is first of all, we want to take care of any symptoms. But understand again, a lot of guys have no symptoms so you can't rely on just that. I look specifically at free testosterone.

Dave:

[inaudible 00:20:34].

Tracy:

Total is certainly important, but the free is what's most important. That's the bioavailable active. I'm looking for typically around 200, 250, somewhere in that ballpark. You got to remember the scale's may differ depending on which lab you're using, but pico grams per nanoliter of free testosterone, 200 to 250 is our target for that. Guys will come in, it'll be 60. I have a guy I just saw earlier today, his total testosterone was 273 and his free was 47.

Dave:

And this guy just didn't have a desire to do anything in life, did he?

Tracy:

He's actually fine. He wants to be a professional golfer, so he is looking to optimize. He's like, "Hey, I want to start getting in shape, doing what I got to do. I got a little bit of belly fat. Otherwise, I'm fine." He has no specific symptoms, he has no major complaints other than he just wants to see how he can get better. He's walking around with those kind of numbers. It's so common, that's why we call it a pandemic because I tell you, Dave, I can't tell you the last time I had a guy come in and had labs done and they were optimal, ideal, where they should be.

Dave:

Wow, so no one has optimal labs? Is there such a thing as an optimal lab?

Tracy:

Well, if a guy came in with a testosterone of 1,200 and a free testosterone of 225, I'd say that's probably pretty damn good. Depending on how he's feeling, some guys may need different levels depending on their symptoms or quality of life. But most guys come in and the total's 200, 300, 400, they've been told they're normal and they're suffering and we're doing these guys an injustice.

Dave:

There's something else that's brutal. If you're 55 and you come in and measure testosterone, they compare you to other 55 year olds. That's wrong.

Tracy:

That's the bell curve, exactly.

Dave:

You need to be comparing yourself to other 25 year olds. The thing that I recommend for young people, the stuff that I wish I had known, is what is the right testosterone level for you? Because if you measured yourself when you were 25 and your biology was working and you weren't already overweight the way I was, you would know the set point where you want your testosterone when you're 105 and that's your number. I don't know what my number was. I did get my testosterone drawn when I was 26, I know it was lower than my mom's. There you go, that wasn't very useful because I was obese and I had endocrine disruptors and all kinds of stuff going on. I figured it out, I like my free to be around 800 to 1,000. Not my free, my total testosterone be there. I actually don't know where my free is right now, I have to look it up on the lab. But I tend to keep the same ratio. I got to check my email.

Tracy:

One point that you just brought up that I think is important for the listeners to understand, the difference between free and total. Total is all the testosterone free floating in your bloodstream. Free testosterone means testosterone molecules that are not bound to other proteins in the blood like SHBG, sex hormone binding globulin is a protein that will bind to testosterone and make it unavailable. It cannot get into the cell, so now it can't have its actual biological effect. The free is so important. I've seen guys that will have a very high total testosterone level. Let's say it's 800, 1,000, 1,200, but they're free is in the tank because their SHBG levels are so high. That's why it's so important to check both the free and the total T.

Dave:

All right, I've got a real expert here. I got to ask you an interesting question here. What I've found over the past decade or so, guiding people onto the Bulletproof Diet, and to getting a cyclical ketosis, high saturated fat, low sugar, low toxin diet, low inflammation, is almost universally testosterone goes up. SHBG can often go up, especially if they're a little bit low on the amount of carbs they eat. [inaudible 00:24:43] is not always ketogenic, you can cycle in and out if you need to. You're usually a little bit keto in the morning. What do people do to lower sex hormone binding globulin? For listeners, this is something that everyone has that floats around and it steals your sex hormones and your body makes it. So how do we stop that?

Tracy:

Yeah, great question and there's not a good answer for you there, Dave. I get that question almost every day from guys. The answer is stinging nettle root is a supplement, an herb that has been shown to help, boron may help a little bit, although I think the data there is pretty weak. SARMs, selective androgen receptor modulators, which is a whole other topic, those will make your SHBG plummet down to zero. Which now you're wondering, "Hey, is that a good thing to make it-"

Dave:

Which SARMs will drop that?

Tracy:

There are a couple of them that will do that.

Dave:

Name them [inaudible 00:25:41].

Tracy:

I don't use them myself, I've heard about them. I don't prescribe them because I don't like having that much of an effect. I feel like there's something unnatural about lowering SHBG that much. But short answer to answer your question, there's not something great that I can recommend for guys to lower SHBG. What we typically have to do is get your T level higher to accommodate, to account for the fact that there's a lot of SHBG.

Dave:

Got it, so raising testosterone. I've also seen a couple studies on EGCG, which is a green tea extract and probably calcium D glucarate, which is great for getting rid of excess estrogen anyway. We don't have any idea what having no SHBG does to you. I mean, you could grow a tentacle coming out of the back of your neck. Actually, I want to try that. [inaudible 00:26:30].

Tracy:

That's a common approach where people get so focused on one single thing, I want to lower SHBG. From a systems biology perspective, we have to understand that everything is connected and when you're making that change, you don't know how it's affecting other systems and you don't know what other impact that could potentially have. I would just caution people trying to impact one particular protein, not knowing how it may affect the whole system.

Dave:

I love it and it's totally true. If you become focused on just one number, other weird stuff is going to happen that you don't think about. The big pharma way of thinking, there must be one cause. And bottom line is if you move zinc, copper's going to move. If you move copper, zinc's going to move.

Tracy:

There you go.

Dave:

Move testosterone, estrogen's going to move. If you understand you're conducting an orchestra and you can't just have all tuba all the time, otherwise it's polka, there you go. Okay, I think we've hit testosterone pretty well and it feels like there's a bunch of stuff that's lifestyle that we haven't talked about as much. I like it that you pay a lot of attention to lifestyle in your medical practice. If you had to pick three things that the average listener could do that are most likely to improve their hormones, what would it be?

Tracy:

Yeah, great question. No. 1 would be sleep. Sleep is one of the most underappreciated aspects of our health. We know that poor quality sleep, not quantity, poor quality sleep crushes your hormones. Specifically it raises cortisol levels, can chronically elevate cortisol. It's going to crush growth hormones, going to crush testosterone, it's going to crush thyroid. It's going to promote inflammation, it's going to promote insulin resistance. It has a cascading effect that is incredibly harmful. I see so many high performing men who are executives, entrepreneurs. I have a race car driver, I have baseball players and those who don't focus on good quality sleep, they struggle. You can't burn fat, you can't build muscle, you can't get in shape. You can't optimize when you're not sleeping. I love having a data driven

perspective on everything I talk about and with sleep, it's so easy to get a wearable device. I don't care if it's a ring, a watch, a strap. I'm agnostic to brand, but track REM, track deep sleep specifically and make sure you're getting the good quality sleep and-

Dave:

How much? How much REM and how much deep per night do you need?

Tracy:

This is in general, typically about an hour of deep sleep, about two hours of REM sleep is your target. That may require different total quantity of sleep, depending on the individual, depending on genetics. We have clock genes that really regulate how quickly you can fall asleep, your risk for sleep disruption and how much sleep you actually need. It can be anywhere from six and a half to eight and a half hours that you need to get that good quality sleep.

Dave:

It's interesting, I'm looking at the comments from my mentorship group, from the Upgrade Collective, they're in our live audience and they're like, "That's it?" I get an hour and a half of each, even if I sleep five hours a night. I usually don't hit two hours of REM, that requires a lot of [inaudible 00:30:02] in order to get there for me. I usually get an hour and a half. But so only an hour is enough to raise testosterone in the people [inaudible 00:30:10]?

Tracy:

An hour of deep sleep is really the target. I know it doesn't sound like very much. Remember, deep sleep tends to be in the first half of the night. That's when you're going to get that one hour. Then REM typically tends to be in the second half of the night.

Dave:

Absolutely, absolutely the case. The first half is deep and the second half is REM. We've got Jeff here is like, "I get an hour of deep and three to three and a half of REM."

Tracy:

That's awesome.

Dave:

Everyone else here, hour and a half of each. Yeah, so it's possible to go beyond that even in a normal amount of time.

Tracy:

For sure, for sure.

Dave:

That leads to the question, you've written Male 2.0, is Female 2.0 coming next?

Tracy:

Dave, I think it's worthy of a brief mention here, Male 2.0 was my introduction to a new perspective on men's health. Male 1.0 is reactive, it's waiting until you're sick, it's waiting until you have symptoms, till you have problems, until you have a heart attack, until there's some ICD-10 code that needs to be treated with a prescription medication. It's one size fits all model, it's typical disease model medicine.

Male 2.0 is thinking differently. It's taking a very proactive approach. It's personalized, it's using genetics to individualize, it's taking a systems biology data driven perspective. To me, that's what 2.0 is all about, is having an entirely fresh approach and we're behind the women. You know this, that the women are drivers of health care and health decisions. And most men, we rely on our women to tell you, "Go see a doctor all ready, damn it," because most men just don't pay attention. That's what Male 2.0 is all about.

Dave:

If it's not bleeding or maybe seeping puss or something, guys typically won't go to the doctor until it's already been a lot. I'm guilty of that too, especially when I was younger. You just put it off and it becomes really expensive and difficult to fix. Yeah, you're right. Just in a typical family, that can be the case.

But that said, I mean, it feels like the basic practices are similar for men and women. Yes, we both need sleep for hormones to work. We both need certain kinds of diets. We both shouldn't eat at night. But there are definitely monthly differences in fasting that I wrote about in Fast This Way. And women need their testosterone too, but they don't break it down the same way as men. You said you do see women in the practice too. Are women universally deficient in testosterone the way men are? Have they had a 45% decline?

Tracy:

Those studies were specifically looking at men, but we know that there is definitely deficiencies in women as well. It's interesting you bring that up because most women don't even think about testosterone, how important it is when it comes to sex drive and muscle mass and cognitive function, that it's incredibly important for them as well. I haven't seen studies that show it's plummeted as much as it has in men, but it's definitely something that I think it's under looked.

Dave:

It's not looked at enough and once women hit perimenopause and menopause, quite often testosterone goes very, very low and they're wondering, "Why do I not like my life?"

Tracy:

For sure.

Dave:

Testosterone, yes, it makes you horny as a woman when you have enough of it and not too much of it. But it also just makes you want to go do stuff. That's actually the point in life for women who successfully transition through perimenopause, they report actually really substantial improvements in happiness. When they're menopause like, "Oh, I finally have my wisdom and I don't have some of the hormonal swings. I feel like I've got things dialed in." When you do that with enough testosterone, it is actually a really potent and powerful phase of life. But if you're low on thyroid and you're low on

testosterone, it's the time in life where you're tired all the time and you grew the largest butt of your entire life. Which happens when you don't have enough thyroid and enough testosterone.

I want women to think about testosterone as much as men because women love to have strong, lean, powerful bodies, as much as men do. We just need different doses. I think it's possible. I know way too many women friends who solve this problem and they're so incredibly happy with their bodies and with their lives, with their energy levels. And I know ones who haven't or just won't and generally speaking, these are the two biggest variables that I know of and yes, they're tied to sleep and nutrition and all of that.

Tracy:

It's like a symphony. We tend to focus on just one hormone, like testosterone in men, estrogen in women. But it is understanding that it's thyroid, it's cortisol, it's growth hormone, it's vitamin D, it's nitric oxide, it's insulin, it's all these other hormones that get overlooked. They all come together in this milieu, this system that is complex and to try to simplify to one single hormone is really doing our patients a disservice.

Dave:

It is, and to counter the disservice, you're doing something really cool. I don't think anyone's done this on the show before, but you're giving away the digital version of your book and another 10 secrets to high performance. All you have to do is text the word **"Health" to 26786**. You got to pick up your phone, type in [26786] in your text messaging thing and just type health and he'll send you the whole book. Which is a short and easy to read book that's talking about here's what's going on with it.

I'm not going to say it's an advanced hormone hacking, bio hackers guide to everything, but it's "here's what you need to do." You're listening to the show, maybe you haven't taken action on things, or maybe you're just thinking about it. This is exactly what to do. Text 26786 and send the word health to it and you'll get the book as just a gift. I like to ask guests to give back to the audience, so there you go. You got something back.

What else have we not talked about? Lifting heavy, is that a big part of testosterone?

Tracy:

It is, yes. When you look at what are the natural ways that you can boost testosterone, it's sleep, it's reducing chronically elevated cortisol, it's insulin sensitivity, it's strength training. It's proper healthy nutrition. But I'll tell you, Dave, if you have a guy who has a testosterone of 270, if I got him to start aggressive strength training and sleeping and controlling cortisol, and fixing micronutrient imbalances and we haven't talked about microbiome at all, all these other aspects of his health, am I going to get that testosterone level to a 1,000? No, there's no freaking way.

Dave:

Even if he lives on a dozen egg yolks a day.

Tracy:

There's no way.

Dave:

A bunch of butter. By the way I did that, I got my levels to 700 when I went off testosterone, testing out the Bulletproof Diet. You have to sleep like crazy, you weight lift twice a week, it's insane. And I couldn't get it up.

Tracy:

To answer your question, yes, it improves testosterone. Guys are always saying, "Well, can I naturally improve?" Yeah, you can improve. You'll get from 270 to let's say, 480. Awesome, now it's time for testosterone therapy because you're not where you need to be.

Dave:

Or you can start testosterone therapy right away, and then do the actions and enjoy your life better and get more results in less time.

Tracy:

Yeah. But I also talk about going beyond testosterone because we know that from a systems biology approach, you need to look at all these other aspects of health. And microbiome for example, I've seen so many men who have issues with dysbiosis and issues with Candida and issues with leaky gut and they had no idea and they were on testosterone. They're coming in like, "Doc, I'm on T and I still feel like crap." There's all these other things you got to look at, it's complex, yeah.

Dave:

Are you hopeful about where medicine is going from this perspective?

Tracy:

I am incredibly excited at the direction we're heading. I am looking for more providers, more doctors, more practitioners who embrace high performance health and take a personalized data driven approach. Knowing that disease model medicine doesn't work and we're failing, you look at the healthcare expenditures and the deteriorating health that's going along with that and something's got to change. So I'm very excited in where we're heading, Dave.

Dave:

I think we're heading in a direction where the government's going broke. Medicare, Medicaid, don't work. Literally people go to the doctor, we're all fighting to make our employers pay more of our healthcare costs, but we already spend way more money than everyone else. We just aren't getting results.

Tracy:

It's not working.

Dave:

The politicians ultimately are going to get blamed because, well, they're the ones in charge and they can print more money to give more money to drug companies that don't solve the problem. But if people are continuing to be fat and tired and sick, ultimately it is the government's fault. I'm not saying it's one person in the government. It's the entire system of government. We're going to have to fix that in order to fix this problem. I am not a particularly political guy, I don't think governments solve problems. It's

their job to keep people from killing you so you can get stuff done. But I am not happy with the current situation because the amount of money that we're spending is enough to put every person in the US and actually in all of the developed world right now on appropriate hormones.

It's enough money just what we spent in the last two years on very, very small risk things, was enough to fix the food supply for all kids in the country, permanently. That kind of incredible scale of stuff that's just being wasted. I am hopeful that we now have the knowledge and the ability, and I'm a little skeptical that we're going to deliver it to everyone at the cost that it should be. And that will happen because we need you and we need lots of other people like the A for M leading the way. We need people listening to the show who show up at the office 40 pounds lighter. When everyone turns their head and goes, "What the hell did you do? And why are you so happy all the time? Did you just get a raise?" Going, "Yeah, I stopped eating omega six oils, and I started taking the right hormones and magically I like my life." Because when you see this, it doesn't matter how many drug ads you see on the radio, you're going to see the people change.

My call to you listening to the show is that if something really made a big difference for you, don't be that guy who tells everyone what to do. Instead, be that person who just waits until someone asks and when they ask, offer it and offer it freely in a helpful spirit. You'll find that the people who ask care, the people who don't ask feel criticized by your success and they'll sabotage you. You can silently get lean and strong and thin and when people go, "Oh, my God. What did you do?" That's your permission slip to evangelize.

All right, the other thing people can do, if they are in Florida, they could certainly go see you. You said you're in Sarasota and if they missed it, you just can text the number 26786, send the code health to it and get a copy of your book. We've talked about food and we've talked about exercise, talked about testosterone, talked about thyroid. We talked about men and women. I feel like we've covered most of the big topics, all these other things that are going on. But when I asked you for three things people could do, you talked about sleep, but I know the other two [inaudible 00:42:28].

Tracy:

We got distracted. Yeah, we did. I'll just mention, yes, I'm in Sarasota, Florida, but we do a ton of telehealth. I work with men and women around the country, high level program. We actually fly patients in to Sarasota if we need to see them in person. But we do a lot of work throughout the country via telehealth for the listeners.

But yeah, to go back to those three things, the first one I would say without question would be sleep. The second one would be as it relates to cortisol, becoming resilient to stress. When I say that, we know that stress is killing us and it's not that we need to eliminate stress from our life because you can't, there's stress everywhere. It's understanding how to put it in a different perspective and how to frame it differently.

There was a great [TEDtalk from Kelly McGonigal](#) years ago, she talks about how stress can actually be a positive thing. It can be a good thing if you frame it in the right way and understand that stress is a positive. It's incorporating mindfulness practices, incorporating meditation, incorporating ways of reducing stress. Creating a work life balance that's so important for a lot of high performers where they're working 16 hours a day. You're not going to get optimized when you're living that kind of life. There's definitely a need for balance and how to regulate the effects of stress in your life.

Then the third one, I would say that if we're looking specifically at lifestyle here, I would really say create consistent behaviors. When I talk about that, it's this high performance mindset of living with intention. Everyone knows what to do. You know you're supposed to eat well, we could talk about Bulletproof diet. We could talk about getting rid of all the seed oils and all of the sugars and all the crap

in our diet. We could talk about strength training exercise. Everyone knows how to do that, Dave. Everyone knows what to do, but no one does it. What it comes down to is living with intention and how do you get someone to create consistency in their life? Well, it's focusing on your why. What is your why? What drives you? For me, it's my beautiful wife and amazing two little kids. That's my life, that's everything and so every micro decision I make is how can I be the best husband, father, and leader that I need to be. When you become clear about your why, dude, every micro decision becomes so easy.

Dave:

Tracy, I'm going to argue that's only your why because you have enough testosterone. Period. You would not say what you are saying with the conviction you say it if your testosterone levels were 200. You would not feel those things.

Tracy:

Well, I tell you what. It's a chicken or the egg, it's cyclical. I get what you're saying. But those are still for me, Dave, what is most important in my life and that when I make decisions, it's around my why. It's being centered, it's having intention and having purpose and so many guys don't have that. They don't have that direction and they're lost. I see so many guys who will have four, five, six drinks a night. Is that a problem?

Dave:

[inaudible 00:45:43] you.

Tracy:

Yeah, of course, it crushes you. When it comes to lifestyle, it's the boring stuff that no one wants to hear. Yeah, yeah, I know I'm supposed to sleep. I'm supposed to eat clean. I'm supposed to exercise. Yeah, yeah, yeah, I don't have time for that. That's what's so important, it's slowing down and recognizing and creating that consistency is the key.

Dave:

Yep, I love consistency, it is a big one. In terms of things to do, you've got sleep, you've got consistency and is food the third one?

Tracy:

We talked about stress. We talked about the [inaudible 00:46:19].

Dave:

Stress is the other one.

Tracy:

It's okay, yeah.

Dave:

Sleep, stress and consistency are your big three. What does porn do to testosterone?

Tracy:

Porn, and this is interesting, when there's arousal, testosterone will go up. When there's climax and completion, it will come down and so it does have a detrimental effect in excess. The biggest problem with porn is it crushes you from a neurotransmitter perspective. It crushes dopamine sensitivity in the brain and it affects your relationship with your partner. It creates these unrealistic expectations where you need more and more simulation. That's really the bigger effect that porn has, is at its central level affecting you.

Dave:

I've seen some studies that show that cold exposure helps with dopamine and sensitivity and even that caffeine can help you have more dopamine receptors. If you do cold exposure and drink coffee, is that a permission slip for a little porn?

Tracy:

I think you know the answer to that sarcastic question.

Dave:

I tried guys, I tried for you. Porn is bad for you. Generally over time it'll probably suppress desire, which will probably suppress testosterone. We don't really know. It's pretty funny. Anything else that you would want people to know about hormones, about your high performance perspective on medicine that I haven't asked you?

Tracy:

Yeah, thanks. I think the take home message is really to understand that we are complex and that there's never one simple single answer. It's about diving deep, finding the hidden blind spots that are holding you back and it may not be what you think it is. You may think it's testosterone, but it may in fact be thyroid or growth hormone or vitamin D. Or it may be your microbiome or maybe cortisol or maybe organic acid issues. It may be so many other things that you got to dive deep and find the hidden blind spots to really achieve the results you're looking for.

Dave:

Algorithmically, if you just play the odds without being customized at all, I feel like if you just take an average person who is fat and not feeling good, thyroid, testosterone, cortisol would be the first three things I would look at and after that I'd look at toxins.

Tracy:

Sure.

Dave:

I mean, it could be vitamin D. By the way, of course you want to take vitamin D. But it could be lots of other things, but it feels like if you could do those, you're going to get 60% of people well on their way before you have to start dealing with the stuff further down from there. Is that a good filter?

Tracy:

I'll say there's certainly things that are more common than others, but when you do that, you run the risk of missing some really big, hidden blind spots that are holding you back. Bob Harper, trainer on

Biggest Loser, 51 years old, guy has a heart attack earlier this year. He's in the best shape you can imagine and he has a heart attack, 51 years old.

Dave:

Being in shape doesn't solve heart attacks, it's so weird.

Tracy:

Imagine that. But that's a great example of how you think you're doing okay, but you have no idea what's going on under the hood. What I do, I work with high performers, I'll plug your race card in the computer and I'll find out exactly what's going on and what systems need help. Typically, it's systems that you had no idea that there was a problem.

Dave:

That is 100% true and that's why I recommend, if you can afford it, go to a functional medicine doctor. If you can't and you're going to do it yourself like an at home bio hacker, like I was in college, working at Baskin Robbins to pay your way through before you start a little eCommerce company, well, it's okay to find a discount thyroid test online and do your best. I always tell people with a lack of data, you can go with the odds. Your best bet is to get the data. Like I said, plug it into the computer, see what's really going on and do it. As you progress in your life, your risk of all this stuff goes up and your ability to take control of it goes up as well, because you have more means, more knowledge and all of that.

My recommendation there is if you can afford it in your 20s, get a testosterone panel and a full hormone panel, because then you'll know your healthy numbers. It's entirely possible. One of my friends, she's got very high testosterone, almost high enough to be a man, but she's a very feminine woman. For her, her testosterone level, knowing that in her 20s, when she's in her 60s she'll be able to have the right testosterone for her that no doctor would recommend unless they knew that data. If you're a young guy and your normal testosterone level's actually 1,500, which is relatively high in today's world, if that's your number that makes you like, "Yeah, this is just when I'm living my life," well then when you're 55, you're still going to be living your life instead of going, "I wonder why it doesn't work when I'm at half my normal level, because that's what most guys need." The customization's important and we've got to focus on that.

Tracy, I really appreciate it. And guys, if you're listening, it's drtracygapin.com, G-A-P-I-N. And if you were to text that number, it's 26786, text health. Now that only works in the US. I know because I'm in Canada and a couple other people tried it from different parts of the world who are listening. They can probably get this stuff on your website maybe?

Tracy:

Yeah, you can check out the website, shoot me an email if you want the digital copy of that book. Be glad to get it to you if you're out of the country, because you're right, that text link will not work internationally.

Dave:

Awesome. Thank you very much for being on The Human Upgrade. Guys, I will see you on the next episode or maybe at the Biohacking Conference.

Tracy:

Thanks, Dave.