



## Episode 47:

### The Truth About Testosterone and Superhuman Energy with Tracy Galpin, MD and Evan H. Hirsch, MD

Evan H. Hirsch, MD 0:00

Hello and welcome to the FIX YOUR FATIGUE podcast. Whether you can't get out of bed in the morning, your energy crashes throughout the day, or you're a biohacker looking to optimize your energy, productivity and focus. This podcast is for you. I am Dr. Evan Hirsch. And I will be your host on your journey to resolving fatigue and optimizing your energy. And we'll be interviewing some of the top leaders in the world on fatigue resolution. Welcome. Hey, everybody, welcome back to the fixer fatigue podcast, the home of the energy MD method, where we help leaders and executives take their energy to the next level so they can have more success and fun in every aspect of their personal and professional lives. So super excited to talk about all that stuff today with my good friend, Dr. Tracy Galpin. So let's go ahead and meet him. So Dr. Galpin is a surgeon world renowned health and performance expert, and the founder of the gap and Institute for high performance health. He is also a thought leader and professional speaker, and the author of the best selling books, male 2.0, and codes of longevity, his passion and purpose is providing executives and entrepreneurs a personalized plan to better energy, better brain power, better body, and even better sex. He's the creator of the n one high performance health program that provides the data driven approaches, you need to optimize your brain and body for peak performance. Today, we're going to be talking about a systems approach to superhuman energy. Dr. Tracy, thanks so much for hanging out with me today.

Tracy Galpin, MD 1:39

Doc, thanks so much for having me. I'm excited to be here with you. A long time coming.

Evan H. Hirsch, MD 1:43

It has been exciting. So let's start first, talking about the Men's Health pandemic. What is that?

Tracy Galpin, MD 1:53

Yeah. So, you know, I have coined it the Men's Health pandemic that's getting no attention. It is a crisis that has been going on for over 30 years now. And I'm talking about testosterone. So there are three huge studies,

one was here in the US the male Massachusetts aging study. And then there were two studies in Europe, Sweden, and Finland. These three longitudinal studies, all three of them ran for over 20 years. And they all showed the same identical finding. And that was that testosterone levels have plummeted by over 30%. And free testosterone, which is what we actually really care about, has declined by over 45%. So let me let me emphasize that for a moment, if you have a 50 year old guy today, what we're saying is that his free testosterone level is 45% lower than a 50 year old guy 20 years ago, massive decline. And, you know, I want to clarify that there's a little bit of a misconception that testosterone is not just about sex and libido, and performance and building muscle. Testosterone is about cardiovascular health. It's about energy. Of course, you know, everything we talked about here in your podcasts about energy and fixing fatigue. And so critically important for men's energy. It has to do with bone health, it has to do with healthy metabolism has to do with brain function and focus and, and performing your best at work. It has to do with long term survival studies have shown that men with lower testosterone levels have a higher risk of prostate cancer, which is very counterintuitive, and earlier mortality. And so it's critically important that we realize that this is a massive crisis that's really not getting the attention it deserves.

Evan H. Hirsch, MD 3:41

So the next question is, why is that happening?

Tracy Gapin, MD 3:46

Yeah, great question that there are a lot of causes, we can look at, you know, we have a chronic stress, which is raising cortisol, and that's crushing energy, as we know as crushing testosterone and other hormones. We have crummy nutrition, you know, we have the sugar and the processed refined carbs that are that have been shown to affect hormone levels. We have bad sleep, we know the Chromie sleep raises cortisol causes stress, but also lowers testosterone. All that aside, there's one much more important one bigger player, and that answer is toxins. Endocrine disruptors, and so we have numerous studies that show the profound effect of endocrine disruptors and so for the listeners, what is an integral disruptor it is simply a toxin, chemical chemical, a chemical, toxic and excuse me, that affects either hormone production, hormone function, risk hormone receptor function or blocks function. And so endocrine disruptors have been shown to have a profound effect on testosterone. So what are endocrine disruptors? Well, we have plastic water bottles, you know, I only drink from stainless steel water bottles and I filter my water there you go. So plastic water bottles, is sprayed in our crops. Well, the herbicides pesticides are sprayed in our crops, it has been shown to affect hormone production. We have plastic food containers, we have plastic lining metal cans, we have plastic around our milk, for example. So you have cows eating these crops that are sprayed with pesticides, chemicals, the cows are injected with hormones, synthetic hormones and chemicals. And then the milk is put into these plastic line boxes, cartons that we're drinking from. And so there's layer upon layer of endocrine disruption in the food and water that we're eating and drinking respectively. Personal Care Products, or deodorant, or cologne, or sunscreen or shampoo or soap or laundry detergent, all these personal care products are loaded with chemicals that are clearly crushing testosterone. And so, you know, what do we do about it is obviously the next step. Well, it's awareness to understanding how do we avoid all this? How do we avoid the the extra dial on our drinking water? How do we avoid the plastics around our food? How do we choose the right personal care products? That's the first step and then turning on or up regulating our body's detoxification systems to help us better clear those toxins that were exposed to as well.

Evan H. Hirsch, MD 6:12

Amen. Totally speaking my language, one of the things too, I'm curious if you've seen, I see a lot of when men come in with low testosterone, they're younger. Oftentimes, it's from mold toxicity you see in that as well. Yeah, absolutely.

Tracy Gapin, MD 6:25

You know, and here, we're, you're bringing up a great point, we'll talk about systems approach in a minute, but it's important to understand that there are a lot of causes of it, you know, the real problem that I'm seeing in men's health specifically is, there's a T clinic at every corner now. And guys think that all I got to do is go to the T clinic, get a shot every couple of weeks, and I'm good to go. I'm fine. And that's a really big mistake to not dive deeper and understand what's the underlying cause? What's the physiology process? What are the systems involved in really affecting that rather than just focusing on the low tea and thinking that is all about getting those levels up?

Evan H. Hirsch, MD 6:59

Yeah, so let's shed some light on that. So then why, so then what's wrong with just going to the T clinic getting your shot every week? What's wrong with that?

Tracy Gapin, MD 7:09

Yeah, because when we look at the human body, you know, we are complex, we're not complicated. First of all, we are complex and that everyone's uniquely different. But we are this, this symphony, if you will, of hormones, and so you can't look at testosterone as an isolated part of the human system. So when a man has low testosterone, he often has low thyroid as well, he has low DHEA, as well, he often has high cortisol, he often has elevated fasting insulin levels with insulin resistance, he often has issues with inflammation, he often has issues with catabolic physiology, and he has all these other metabolic problems that are happening. And the low testosterone is not the cause of those problems. It's the symptom of those problems. And so you got to dive deeper and understand that if you're just getting a testosterone shot, you're just treating the symptom. And all the other processes that are happening are still going on. And so that's where you gotta you know, I'm a medical doctor by background just like you are, but this is where all the functional stuff comes into play, you got to understand what's going on when you look down to the, to the ultimate, you know, physiologic level of where the problems are.

Evan H. Hirsch, MD 8:15

Yeah. And can you can you get negative feedback mechanism? Can you shut things off? If you are taking testosterone does that end up having some sort of negative effects?

Tracy Gapin, MD 8:25

It does, you know, when you take testosterone, exogenous testosterone, it is going to through negative feedback, turn off pituitary secretion of LH luteinizing hormone, and so your body is going to send Hey, I don't need to make any more tea. So at that point, then you do become reliant on testosterone. And so that's not necessarily a bad thing. But you need to be aware of that and understand that, that you need to then either identify the underlying problems and correct them. And or stay on testosterone long term at that point?

Evan H. Hirsch, MD 8:54

No. I would imagine that, you know, taking testosterone doesn't work for everybody. Like there's a lot of people who are not going to get any results from it. And consequently, they need to be really shining a light over here. But there's there's probably a percentage, I don't know how much that get benefits from it. Right. So it's, unless they're actually looking enlisted are actually looking forward and understanding that, hey, if I take this now, things are not going to go right for me in the future. But what have you seen in terms of people who actually benefit from getting the testosterone shot?

Tracy Gapin, MD 9:27

Yeah, I see so many men who come to me already on testosterone, and they're miserable. They feel like crap. And like, I don't know why, like I thought it was just t saw two guys today, new patients today the exact same story where t is not working. It's not doing what they wanted, or thinking it was going to do. And so the reason for that, again, is that there are other underlying processes that are at play here. So when a guy presents with low energy and fatigue, and his T level is checked immediately by a physician says oh, there you go. That's the problem and gives gives him t, you got to recognize that there's chronic inflammation, there's infection, there's toxins, there's all these other things that are at play. And if you don't address those things, then he's still going to feel like crap. And so sure, some guys will definitely feel better initially, you know, you're, again, we're treating a symptom when it comes to given to dosterone. But I like to go be I call it going beyond testosterone, understanding that that a systems approach is really how you need to address that.

Evan H. Hirsch, MD 10:28

I love that beyond testosterone, right? That's great. And so is there a place though, for giving people testosterone? You know, sometimes we'll give people natural band aids, even though we know that their band aids while we're fixing other things? And so that's kind of the first part of the question. The second part is, if you're gonna give somebody testosterone to give them a shot, you give them a cream, what do you like?

Tracy Gapin, MD 10:52

Great question. There are pros and cons of each. So there are three routes generally of administration of testosterone. So there's topical, there's injectable, and there are pellets. And they each have pros and cons. The topical is attractive for men who don't want to deal with needles or injections or procedures. And that's applied daily. So if you if you want to use topical cream, you apply it on the scrotum actually, because the

absorption from the scrotum is amazing compared to other parts of the body. But you got to put it on every day. And so if you miss a day, your levels are in the tank, because again, like you asked earlier, your body is suppressing normal production knowing or thinking that it has all it needs. And so you got to do it every single day. So for some guys, that's inconvenient. The common downside to topicals is that you don't want to transmit that to someone else, especially your children. So you know, if you if you apply it, you got to make sure you wash your hands off. If we touch anyone else, you could potentially transmit that to other people. I don't think anyone else is gonna be touching your scrotum need to worry about something more your hands but and I think that's really a theoretical risk. So but otherwise, it works great. And guys like it. With topical testosterone, you do tend to sometimes have higher DHT productions, a DSG is dihydrogen testosterone. So sometimes hair loss can be a little more of an issue with topical than injectable, not much, but that that can sometimes come up. So that's topical and then the injectable is administered either sub q or im intramuscular. Either way, is actually effective. And this is where we can get longer duration of therapy. So guy can be on it. Getting an injection every other day, twice a week. Once you get to once a week, you start to get more peaks and valleys and it goes you know, swings throughout the week that I like to do at least twice a week if you can, every other day is great. Every day would be ideal. But from a compliance standpoint, getting someone to inject themselves every day is is tends to be asking too much. So typically every every other day, every every third day or so is the typical route there. And the downside to that is having to use a needle, having to remember to inject yourself at those times. Otherwise, it works great. You can get levels up to where you need them to be. You do need to monitor some labs periodically with that, but it's fairly safe. And you know, the main downsides to testosterone are really misconceptions about cardiovascular health. You know, we know that testosterone is actually vitally important when it comes to healthy vascular system and endothelial function. And studies have shown that guys with low testosterone have about a 30% increased risk of major adverse cardiac events and early mortality actually, and it's very counterintuitive there to Cromie studies that unfortunately came out about almost 10 years ago now that suggested the exact opposite. But when you actually looked at the data, we actually looked at the raw data and actually support exactly what we've known from every other study. And that is, again, a protective effect when it comes to cardiovascular health. There's also the issue of prostate cancer, we very clearly understand that testosterone does not cause prostate cancer. It is not been found to promote recurrence of cancer in men who have actually been treated with who have no evidence of disease, who then are put on testosterone therapy as well. I've had numerous patients who actually have prostate cancer, low grade cancer, we're following them with what's called active surveillance. And they're on testosterone with no progression of disease as well. And so from that standpoint, is quite safe.

Evan H. Hirsch, MD 14:38

Excellent. Yeah. I remember hearing about that book. Was it Abraham, Morgan Taylor, something about you know, who was talking about how it was more about the saturation if the test if the prostate was already saturated with testosterone were the levels weren't so low right then right at low risk, but if you were if it was so low and We're going to increase it up and potentially could cause the, the prostate cells to proliferate. Am I remembering that

Tracy Gapin, MD 15:06

correctly? Exactly what Yeah, once you get up to testosterone level of around 200, give or take, you can go in, theoretically infinitely, and that those receptors are saturated the point that you're not gonna have any increased stimulation. Exactly right. Yeah.

Evan H. Hirsch, MD 15:21

Okay. And since we're on the topic of testosterone, what about testosterone in women I have seen, and I don't know if there's any research about it, but it seems like potentially I had a patient who was having a TIA, we took her off the testosterone, because there was some concern about blood clotting with it. How does it work with women differently? And are there risks? Yes. You talked about the cardio benefits? Are there any risks? In terms of cardiovascular disease? No.

Tracy Gapin, MD 15:49

Short answer is no. Yeah. So that you know, there is this. So when we give to let me, let me start with the first part, your question is for women absolutely a huge benefit for women, especially when it comes to libido. When it comes to sense of vitality, sex, drive, sexual performance, and all that, it definitely comes into play for that for workout capacity, exercise capacity, as well. So very important for women as well. We see a lot of postmenopausal women who get tremendous benefit from not just estradiol, but also from the testosterone as well. Now, in terms of the cardiovascular issue, you know, where that comes up is when we give testosterone, what it will do is it will stimulate the bone marrow to produce more red blood cells as the natural cause or natural effect of testosterone. And so we will see in patients who are given testosterone therapy will see a hemoglobin hematocrit level rise over time. And so the theoretical risk has been, oh, well, if the hematocrit over 50 to 55, whatever it may be, oh, there's a risk of sludging. And the blood cells are going to clump are going to clump together. And there's this theoretical concern that there's going to be a stroke or a clot of some kind. It was actually remarkably never been a study that's ever shown that high hematocrit levels have any correlation with risk of heart attack stroke, or cardiovascular major adverse event. And you think about people who live at altitude you think of people in in the Alps or who live in Colorado, their hematocrit 60 to 65. And there's no increased risk in these people. And so it's a it's a misconception that even myself as a urologist until about 65 years ago, I believe that as well. There's a huge risk, and you got to get phlebotomy, you got to stop it. But there's really no data to support that at all.

Evan H. Hirsch, MD 17:42

Excellent, that's definitely good to hear. So then for somebody who wants to boost their testosterone naturally doesn't have access to somebody to prescribe or doesn't want a prescription? Are there any natural alternatives that you found?

Tracy Gapin, MD 17:56

Absolutely, you know, a lot of lifestyle stuff gets overlooked. And I want to, I want to really pay homage to the fact that there's a lot that we can do with nothing more than focusing on our behavior. And you know, this gets into epigenetics, which is how we can actually alter genetic expression, we can change our physiology simply by how we act on how we behave, what we eat, how we breathe, even how we think even can affect genes. So one of the biggest ones is sleep. Most of the men who I work with, and I work with men and women, but predominantly men, most of the men have crummy sleep. And most of the time, that's by choice, it's you know,

I work with a lot of high performers. And you know, they're they're up late working hard grinding away, and they think that they do fine on four hours asleep. I've heard that phrase over and over again, I'll sleep when I'm dead. I've heard like containment as I heard that. And I can't tell you how, how faulty that that thinking is because sleep is the critical time when our bodies are repairing itself. And I know you appreciate the choir here. I know you've talked about this on a lot of your other broadcasts. Yeah, it's probably one of the most overlooked aspects of our health. And how it relates to men's health and energy and testosterone is that, as we know, when you have crummy sleep, it alters growth hormone production, but also raises cortisol production and cortisol is chronic stress, basically, raising cortisol. What does cortisol do? It crushes testosterone production. And so there's actually a study they looked at at college kids at a university Colorado looked at college kids and they deprive them of sleep or full 24 hours, and their T levels dropped by 50% in one day, crazy, just from lack of sleep. And so that's one of the first things we can do is really emphasize the profound effect that sleep has on testosterone, you know, chronic stress as well. They kind of go hand in hand when guys are not taking the time to have a balanced lifestyle with relaxation with meditation, mindfulness, that sort Nothing can really affect them as well. So what I like to focus on is what's your nighttime routine. So let's say you're gonna go to bed at 1030, then you're going to set an alarm on your phone, and every night at 1030, you're going to bed. And for two hours before that you can't use your phone, can't use your laptop, can't use your iPad can't watch TV. So what can you do? Well, you can read a book, you can journal, you can meditate or you can have sex, those are basically the four best things I can think of for you to do during those last couple hours before you go to bed. And then 1030 You're in a relaxed, rested state, you're ready for bed. And that nighttime routine is one of the most impactful ways that I can suggest that guys can improve hormone levels. We know that strength training, specifically large muscles are really important for testosterone as well. So strength training is much, much more important and valuable than endurance or aerobic training. And so, you know, squats and lunges and back exercise all the big muscle bellies are the ones that you want to really focus on those core muscles and legs specifically, are going to be the most important when it comes to strength training. And then diet, you know, the the evils of our societies, you know, sugar and the vegetable oil seed oils, those Omega six pro inflammatory oils. Getting those out of your diet, I think is super important. The other part of diet is when it comes to fat. There is this misconception that fads evil, and I know you've talked about this as well, but I want to just emphasize this that that to make testosterone, there is this steroid pathway that you and I learned in medical school that most of your listeners did not have to memorize we did. And this steroid biosynthesis pathway to produce testosterone estradiol, you go above that you get to DHEA you go above that you get to pregnenolone you go about pregnenolone what is the initial precursor of testosterone? It is cholesterol. Exactly. And so you need cholesterol to make testosterone. And so a lot of folks will try to get on these, you know, super low fat diets. You need healthy fats, you need cholesterol to make testosterone. And so obviously, diet obviously stress, obviously, fitness, obviously, sleep all really come into play when we're looking at optimizing testosterone. And I mentioned no drugs right there. Yeah.

Evan H. Hirsch, MD 22:24

No, that was brilliant. And so consequently, statins, right? Or like the anti testosterone. Exactly, right. That's right. Yeah, we need that good fat. That was That was perfect. I've had some success with some herbs like maca that can increase testosterone. Any herbs that you've seen that are especially helpful.

Tracy Gapin, MD 22:49

Yeah, you know, Maca is okay, I'm Tom Cat, Lee is okay. There are gather, I used to make a testosterone booster. And I know there's a bunch of them out there. And I honestly quit making it. Because the data is and I made it because so many patients asked for and I'm like, I'll put together the best ones out there. And in reality, I didn't feel ethically right about it, because they're just okay. And I feel like that the data is not really strong enough that I can support it, I think that the lifestyle stuff we talked about. And also emphasize that, you know, a lot of these guys who come in with a testosterone of 200, and you do all these natural lifestyle things, you do herbs, you do all this non medication approaches, you're gonna get them up to from 200 to, let's say, 400, you're gonna get their free from five up to 12. I need them to be three times higher than that two times, you know, twice that level. And so that's where most of the time you end up having to give these guys testosterone, you try all the natural stuff first, don't get me wrong, and I don't want to minimize that. But most of the time to really get guys where they need to be, you end up having to get in testosterone, at least until you can dive deeper and spend time fixing those underlying, you know, levels of inflammation and insulin resistance and so on.

Evan H. Hirsch, MD 24:07

Excellent. Yeah. So let's go there. Next, I definitely want to get into genetics. But maybe we talk about the system's approach now where you kind of bring all this stuff in?

Tracy Gapin, MD 24:15

Yeah, sure. So there are a couple of different analogies I use when I talk about this. The one that I think is easiest to visualize is a bicycle wheel. And you have all the spokes of your wheel. And the center of that wheel can be sexual function. It could be energy, it could be your ideal weight. It could be a brain focus, whatever, whatever target or goal you have. You have the spokes of your wheel and we have broken spokes. Now those spokes can be testosterone, thyroid, you know, DHEA, all 20 hormones we look at it could be your gut health. It could be your neurotransmitters, it could be infections, it could be mold, it could be parasites. and all the other diseases and infections that you deal with a lot. It can be crummy sleep, it could be stress, all these different aspects of our health are inputs to our human operating system, so to speak. And you need to identify which of your spokes, if you will, are broken, because when they're broken, that wheel is not going to work properly, you're gonna have an out of balance wheel, so to speak. And so I like to think of it as identifying the areas of your health that need attention. And then really diving deep on those when you fix that there's gonna be another spoke that needs attention. And so is understanding that for your human system to function properly, it's never one spoke is never just testosterone is never just your gut. There's so many aspects to it. And that's what's fun. That's what that's what you know, I love what I do. And it's almost like a, like a mystery to identify what are the inputs? What are the broken spokes that we need to effect?

Evan H. Hirsch, MD 25:55

Yeah, that's brilliant. You know, I found that there's 33 different causes and that everybody has a combination of 20 of them. 20 Plus, yeah,



Tracy Gapin, MD 26:04

you don't ever just want no, never just

Evan H. Hirsch, MD 26:06

one. Yeah. Excellent. I love that analogy. So let's talk about genetics. How do we incorporate genetics into this?

Tracy Gapin, MD 26:15

Sure. So I find that there's this, there's this mistake of assuming that a one size fits all model works. And it doesn't, because we're all uniquely different, or genetic dictate how we respond to things. So let me give an example. I see guys who come in all the time, and they're on keto diet. And they're like, Yeah, I'm not losing weight. But I'm doing the keto diet, you know, because I'll ask them about their nutrition, of course. And there are genetics, that that help us understand how your body processes food nutrition, helps us understand what you should eat, what you shouldn't eat. What micronutrient deficiencies, might you have the potential for what areas of toxin exposure might be more susceptible to what, what might be more dangerous for your mitochondrial function, or what exercises are right for you? What hormone issues might we need to look at. And so we can use genetics, to look at all those things. So a lot of guys will come in, and we'll run their genetics and I'll find that they would actually lose weight, build muscle, burn fat feel better with higher complex carb intake, which is counterintuitive to the common thinking, Oh, I just need low carb. And that's all I need. For some people that's great for many others is the wrong approach. We have genetics to look at micronutrient deficiencies. I'll give you example, the BCM Oh, Gene, this is a gene that looks at how our body's processes how we process vitamin A. So vitamin A typically beta carotene it gets converted to into Paul medic or retinol Gafsa, which is the active biologic form of vitamin A, well, the BCM o gene is what what makes that conversion happen if you have a variant of that gene, you will not convert beta carotene into retinoic acid. And so you need to supplement specifically with the active form of vitamin A, because your body can't use beta carotene, like other people can. We may find that your mitochondria are potentially more susceptible than others. And so perhaps for you, you may need additional supplementation, maybe you need additional detox support to help you with the toxins, maybe il six is going to be higher in you because of toxin exposure. So we can use supplementation to help alleviate that. We can use genetics to understand what type of exercise is right for you. And so there's a lot of fine tuning. You know, we have general guidelines, general recommendations were talking about earlier of how we can improve our health and how we can improve testosterone. But we can dive deeper and have very specific personalized recommendations based on genetics.

Evan H. Hirsch, MD 28:51

Excellent. So I struggle with this a little bit because you talked a little bit about epigenetics, you know, where you've got the gene, but the gene may not be turned on. So how do you know if somebody actually needs that active form of vitamin A, you know, if they have the gene, but it may not be turned on? Yeah, great

Tracy Gapin, MD 29:09

question. I'll give an example of that. So we can look at the APOE gene, for example. So a variant is ApoE4, and this is a gene that has to do with how our bodies process saturated fat. And so, certain variants are ApoE4, and this is what it's called, or a variant is ApoE4. Depending on whether you have one or two alleles that give you that gene. So we know that people with the ApoE4 variant will have a markedly 12 times increased risk of early cardiovascular disease, early onset dementia, Alzheimer's disease with saturated fat intake. And so it's something where we know that that's a susceptibility that's genetics, okay. So genetics tell us that you are at increased risk of developing. During these bad issues, cardiovascular disease, Alzheimer's disease dementia, however, if you limit your saturated fat intake, your saturated fat intake to under 5% or less of your daily caloric intake, studies have shown that that risk completely disappears. And that your risk is no different than the average population. And so that's epigenetics. So what I mean by that is, understanding your genetics helps you make lifestyle decisions, which directly impacts that gene expression. And so that's really how epigenetics and genetics comes into play, how we can use the genetic information to understand what we can do differently in our lifestyle and our behavior, what we eat, etc, to have an impact.

Evan H. Hirsch, MD 30:44

That's a great example. I think the challenges that I still have with this, and we're gonna, you know, hopefully, yeah, we can kind of hash this out a little bit, maybe you can shed some light on this for me, is that there are some things like the ApoE4 for the ApoE4 that has good research on and then there's, you know, we know a lot of genes, but we don't know, we don't have a lot of research on those genes. So then, how do you extrapolate that information? Or then does that become more about the environment? And you're looking at these toxins anyway, and you're removing them? And consequently, through epigenetics, you're improving the way that these pathways are functioning? Or how do you like to do that? Yeah, great,

Tracy Gapin, MD 31:21

great point. And there's a lot of both, and there's a ton of science out there, you look at, you can go online, and there were several sites, they'll show you tons of data, I went through an epigenetic certification program, actually, about four years ago now appear on and the data on the genes that I look at, is very robust. And there's real science behind that a basic science level, as well as at a population level shows the impact there. But there's a lot of you know, based on this gene, and this gene profile, I should say, typically, never one gene equals one outcome is typically an algorithm where, you know, these 10 genes together tell us that you're at increased risk of having a higher inflammatory response to toxins, therefore, you may want to use for saunas or curcumin or more or more sauna use, specifically because of that, for example. And so that's where it comes into play is understanding what your blind spots are, and how you could potentially affect that. A lot of times, full transparency, you're going to know that and you're going to do things, but then you're not going to have an immediate gratification to know that what you did immediately worked. I would say the delayed gratification would be the live longer and healthier. But recognize that right then and there.

Evan H. Hirsch, MD 32:36

Excellent. Well, that makes a lot of sense. You know, when it comes down to it, like so much of this is about getting the data that you need, right. And if you can get a little bit of data from each one of these components, you know, you're just that much more, you're gonna be that much more successful, because you can fix so many more of those spokes on that wheel. Exactly. Exactly. Cool. Awesome. So let's talk a little bit about peptides tell us like what are peptides, these are relatively new for a lot of folks make us more familiar with them and how and how you use?

Tracy Gapin, MD 33:11

Yeah, peptides are truly amazing. So, peptides are nothing more than short proteins. So a protein is simply a chain of amino acids linked together, very specific sequence. If you have more than 100 amino acids in length, it's a protein. If you have less than 100 amino acids in length, it's a peptide is literally that simple. A peptide is really a signaling molecule, if you will, it's an enzyme if you will. It's used for very specific purposes, very specific functions. And they're signals that the body already recognize it because they come from our own body. So for example, insulin is a peptide, growth hormone is the peptide. One of the common ones we use to help explain it as it would be to give an example BPC 157 is probably one of the most commonly known peptides out there right now. BPC 157 is a body protective, complex and 137 and it comes from it's a fit as a chain of 15 amino acids in length, and it derives from the stomach from the enzymes of our stomach, they found that this short protein, called a peptide has amazing anti inflammatory effects. And so it reduces inflammation in the GI tract and the gut specifically, it also has amazing anti inflammatory effects in joints or even systemically so it can be given either orally or as a sub q injection to reduce inflammation, thymus and alpha is another peptide that comes from the thymus gland has amazing benefits when it comes to immune function and it up regulates T reg cell function which is part of our T cell immunity. And I got in trouble from FTC because I talked about The amazing benefit that is an alpha has on our immune system. And I simply use it when I got sick with an infection a couple of years ago that's all I said and apparently FTC didn't like that. And I got in trouble despite the fact that a month later an article on PubMed talked about how amazing comments and awful was a treating COVID So then it was okay, but I wasn't I wasn't allowed to say it before then. That's a brief aside, but, but amazing immune function benefits thymus and alpha again, these are peptides that come from the human body. So we have peptides that are amazing for reducing inflammation for immune function for musculoskeletal repair. thymosin beta is one again, it comes from the derived from the human body. I had elbow surgery six weeks ago yesterday, and I use thymosin beta as a way to improve the musculoskeletal repair after that surgery. So it's great for post operative you have arthritis, you know, knee pain, shoulder, elbow, that sort of stuff. There are peptides that are great for sleep. There are peptides are great for weight loss peptides that help boost our natural growth hormone production. You know, once we hit 40, it all falls apart, right? Growth hormone levels declined by about 1% a year and that's a big reason why we fall apart. And so wouldn't it be great if we can help our body produce natural, healthy, optimal ideal levels of growth hormone without having to take it exogenously which has a lot of downsides and consequences and negatives. And so there are peptides that help stimulate our pituitary gland to produce the normal levels that our body needs. So there are peptides for almost any you can imagine for for sexual function for hair loss for skin rejuvenation for longevity opin Lonza peptide that's simply two amino acids in length. It's been shown in animal studies, no human studies yet, animal studies have shown increased lifespan with a pedal on high so we're on the cutting edge. New peptides are being discovered and developed and studied on a daily basis. And it's a really exciting area in regenerative medicine when we look at ways of of optimizing our health without relying simply on pharmaceuticals and drugs.

Evan H. Hirsch, MD 37:16

Excellent. And it sounds like there's there's research on peptides, mainly on animals also on humans. What do you see with some of the other ones like BPC? 157?

Tracy Gapin, MD 37:26

Yeah, both there's studies on both there's a lot of bench work done, you know, in the laboratory and these peptides and then there's a fair amount of data that some peptides are still animal studies only take a your own risk and others have tons of human studies thymosin Alpha has been around for 20 years, tons of human studies has been used in other human illnesses before with long term data there. Every peptide is a little different. And that's where I want to just put an asterisk next to this whole discussion and and bookmark it with a caution to the listeners that this is not something to take lightly. This is not a supplement like some of the vitamins and herbs that you can get, you know, off the shelf or on Amazon and there are places where you can go online direct to consumer and purchase peptides, but I never ever recommend that you go to a place like that. From a quality assurance standpoint, from a purity standpoint, you have no idea what you're getting. When I work with patients, I individualize it I tailor it based on their needs and I prescribe only from reputable compounding pharmacies where I can I can get you know certificates of authentic authenticity and you know, confirm that their product is legit. So word of caution to the listeners out there when you get excited about peptides.

Evan H. Hirsch, MD 38:41

Thank you. Yeah. And oral versus injectable is oral is good.

Tracy Gapin, MD 38:48

You know a great question. It depends on what you're trying to do so BPC, for example is oral but and that's great for the gut for gut health. I've had so many men who have irritable bowel issues, reflux issues cramping, and they have remarkable improvement, nothing but BPC, if they don't, you got to look for infections and SIBO. And you know, other issues going on. But for a lot of guys, it's amazing for reducing inflammation for the gut. If you're looking to reduce joint inflammation, sub q injection is needed if you're looking for reducing systemic inflammation, either oral or sub q is effective on the depends on the peptide. See link is a great peptide for anxiety. There's actually a nasal spray. There's a peptide that is topical, when we're looking at at focus, concentration brainpower, so it depends on on what peptide we're looking at whether you're going to administer a sub q or topical nasally, orally, whatever.

Evan H. Hirsch, MD 39:48

Excellent. So last few questions before I let you go. Thank you so much for sharing all this knowledge with us and our audience. Really appreciate it. So you are you've used a lot on different biometric devices from what I

can remember, do you have a favorite? I'm currently using the aura ring. So I'm curious about your opinion about that. But what do you what are you using these days for biometric evaluation?

Tracy Gapin, MD 40:13

Yeah, great question. I normally myself use Garmin. But I'll say that there are again, pros and cons to all the different devices, I try to be agnostic whoop is has really made a big move Lately, they've really improved their platform. But aura and Garmin, and whoop, were probably the top three, and then bio strap Fitbit would be a little lower than that. Apple would be below that as well, when it comes to the actionable data that you get. I like alright, you know, they change to a subscription model, which kind of upset a lot of people from a cost perspective, which was a new change for them. That same data, now you're just paying for it every month, instead of getting it when you had to buy the ring and buy the subscription now, which is a little different, I find that the sleep data for auras. Fantastic, I find that some of the other data is better on the Garmin especially if we're looking at activity and recovery HRV that sort of stuff. I think the Garmin is probably a little better, their whoop is great at looking at recovery status and and that sort of stuff more for the athletes. So it's again, I try to be agnostic, and what device are you going to wear consistently, I have a race car driver as a client, and he will not wear a ring will wear a strap, but he won't wear ring. So for him, I'm gonna I'm gonna, you know, talk about Wooper or our garment, or the guys will not wear a watch. Now we're gonna you know, so it's really what are you going to be compliant with is really the key?

Evan H. Hirsch, MD 41:47

Yeah, I didn't want to, I didn't want to watch. And I wanted something that was gonna get my HRV There you go. Yeah.

Tracy Gapin, MD 41:54

And it's pretty good. You know, it's, there's some variability there. But I think if you use it consistently, the the key thing I want to emphasize there were things like HRV. And for listening, heart rate variability is physiologic surrogate for stress levels, is not the absolute number. It's what is what's causing it to dramatically go up dramatically go down, what are you doing, right? What are you doing wrong kind of things and don't care so much about the absolute number, that doesn't really matter quite as much.

Evan H. Hirsch, MD 42:22

Excellent. Thank you. Yeah. So the last question is, where can people learn more about this wonderful work that you're doing? Where would you like them to go?

Tracy Gapin, MD 42:31

Oh, sure. So I have a gift for your listeners, if you're okay with that, please? Yeah, sure. So if the listeners will text the word health to two 676, again, is held to to 676, I'm going to give you a couple of gifts one is going to

be a complimentary copy of my best selling book, Mel 2.0. And I'm also going to include with that a free copy of my secrets to high performance health, which will kind of give you some some basic starting points on how you can get going in this area of high performance health that I find so amazing. And then I'm also going to include details of my live event in Sarasota, Florida, which be coming up June 11. To do 12, called the Gavin's to performance health summit. first live event here locally can be amazing. And then also include a link for a discovery call with my team if you want to learn how we can help any individual here listening, how they can help you understand where you are now where you want to be and how we can hopefully help you.

Evan H. Hirsch, MD 43:32

Excellent. And this is not just for men.

Tracy Gapin, MD 43:35

This is not for men, we work with men and women high performing executives, entrepreneurs, athletes, business owners, anyone who's successful who really wants to upgrade their health, upgrade their life.

Evan H. Hirsch, MD 43:46

Love it. Such good work that you're doing. Dr. Tracy, thanks so much for hanging out with me today.

Tracy Gapin, MD 43:52

Thanks for having me. Appreciate it.

Evan H. Hirsch, MD 43:55

I hope you learned something on today's podcast. If you did, please share it with your friends and family and leave us a five star review on iTunes. It's really helpful for getting this information out to more fatigue people who desperately need it. Sharing all the experts I know and love and the powerful tips I have on fatigue is one of my absolute favorite things to do. If you'd like more information, please sign up for my newsletter, where I share all important facts and information about fatigue from the foods and supplements to the programs and products that I use personally and recommend to others so that they can live their best lives. Just go to [fix your fatigue.com](http://fixyourfatigue.com) forward slash newsletter to sign up and I will send you this great information. Thanks for being part of my community. Just a reminder, this podcast is for educational purposes only and is not a substitute for professional care by a doctor or other qualified medical professional. It is provided with the understanding that it does not constitute Medical or other professional advice or services. If you're looking for help with your fatigue, you can visit my website and work with us at [fix your fatigue.com](http://fixyourfatigue.com). And remember, it's important that you have someone in your corner who is a credentialed health care professional to help you make changes. This is very important, especially when it comes to your home. Thanks for listening, and have an amazing day.