



THE
FATIGUE
SUPER
CONFERENCE

Is your thyroid causing your fatigue?

Guest: Dr. Justin Marchegiani

Alex: Welcome to The Fatigue Super Conference and my guest for this interview is Dr Justin Marchegiani, welcome Justin.

Dr Marchegiani: Thank you.

Alex: Just to give a little bit of Justin's background before we get into it. Dr Justin is a graduate of the University of Massachusetts at Amherst with a degree in Kinesiology and Pre-medical Studies. Dr Justin has completed his doctorate degree in Chiropractic from Life West University and is a licensed doctor of Chiropractic in the state of Texas.

He has completed post-graduate study in the area of clinical nutrition, rehabilitative exercise and functional medicine so he can offer the most cutting edge technique to help address the patients growing healthcare needs.

Dr Justin works with a wide variety of patients all the way from athlete's trying to increase performance and heal from injuries to the everyday person with chronic health challenges. Using a holistic approach Dr Justin addresses core, underlying barriers to health, which allow his patients to heal faster and feel better.

Justin great to have you here thank you so much for making the time.

Dr Marchegiani: Hey Alex, thank so much for having me as part of the show I'm really excited.

Alex: Awesome. So I always start a little bit of people's own personal stories, what's brought them in to doing the work that they're doing and I know that you had a little bit of your own experience around your digestive system affecting your thyroid. So maybe just touch on a little but what got you so interested in the thyroid and hormones and that part of functional medicine?

Dr Marchegiani: Well before I even knew I actually had Hashimoto's, which is an underlying autoimmune condition where your immune system is attacking your thyroid, your thyroid is really important because this summit is all on fatigue and your thyroid controls kind of the metabolic baseline of your body right. In your conventional biochemistry textbook metabolism is like the sum of all chemical reactions in your body but what that really equals is temperature and energy and then of course from there you can spiral off and have hair issues and mood issues, anxiety, depression, you can even have low motility of bacterial overgrowth. So of course a thyroid issue, autoimmune, can spin off into many, many symptoms and many, many issues.

So I had an underlying thyroid issue but before that, kind of backing off a few years even before that, I worked in the surgical field and I was kind of a surgical assistant, I would help hold the patient position and help the surgeon during surgery, if they needed for instance holding the diabetic limb of a patient that was getting amputated. So I had many experiences of all these limbs passing through my possession and there really wasn't a lot of curiosity on the surgeon to get in from of this and to fix this. They really were missing a lot of tools in their tool belt to assess it. I mean imagine a contractor working on your house and they don't have a hammer or let's just say a screwdriver, well it's like there's a lot of things that they're probably going to see and they're just going to overlook it because those important tools are missing. You know I look at it from the surgeon's perspective they have two major tools, they have surgery and drugs and they're missing key ones, such as diet and lifestyle and supplementation. So I really wanted to get ahead of that and put more tools in my toolbox so when I looked at patients I could really evaluate them 360 and really work on getting to the root cause and getting upstream versus being downstream.

Alex: Very cool, very cool. You touched on kind of I guess the broad reaching impact of the thyroid but for people which are maybe not so aware of what the thyroid does and why it's important maybe say a bit about why the thyroid is such a key piece of the jigsaw in understanding fatigue and driving fatigue related symptoms.

Dr Marchegiani: It's a great question. So your thyroid gland is going to be right here in your throat so if you feel in your Adam's apple, that little bump, more prominent if you're a guy, and if you come down maybe a centimeter and maybe out a centimeter this area is going to be your thyroid gland and that area can get, it's very common to have autoimmune attack there. It tends to be a very sensitive tissue for a lot of different reasons. The surface proteins on gluten tend to be a big connecting factor with that as well and it's one of the most common thyroid issues, you know chlorines and various pesticides also can attack that area or let's just say can stress that area out or stress out

your immune system, create more gut permeability, which exacerbates that immune response.

So in regards to the thyroid think of like your thyroid as like your in your car, right, you turn on your car, your resting rpm rate, that's like your thyroid. So we know like in the winter time when the engine's cold, right, that rpm's really, really running high to overcompensate versus when it's hotter, right, it may run lower and be easier to red line so to speak. We know if your engine goes too low on the resting rpm's, especially if you've experienced driving as standard, you stall out right. So think of that resting engine kind of tone or rpm rate that's your thyroid.

Your ability to shift gears from first gear to second gear, which is dealing with more stress, that's like your adrenal glands. First to second, OK now you're in fifth gear lots of stress, now you're coming home, you're winding down, now you're down shifting, right, your downshifting to help recover from stress. And think of all the, let's just say, the fuel in the engine is like the mitochondria, that's like the B vitamins and the CoQ10 and all these nutrients that help run our ATP pathways to generate energy.

So the triangle I like to kind of put people to kind of wrap their heads around this is resting engine tones our thyroid and shifting gears, going up and going down, ramping up from stress and coming back down from stress is your adrenals, and then the nutrients that kind of help run that mitochondria, that energy centre in the cell, that powerhouse, is going to be the mitochondria. So that's kind of the triangle, does that help?

Alex: That's a really helpful way of looking at it and actually in a little bit it would be great to talk a bit more about how those pieces interrelate. So if you're deficient in one area how it's likely to impact the other areas. But maybe before we do that just say a little bit about if someone's thyroid is not functioning as it should what are some of the symptoms that somebody would notice?

Dr Marchegiani: Great question. So I like to draw a line here because we have our typical symptoms and then we have our atypical symptoms. So our typical are going to be like cold hands and feet, hair loss, outer third of the eyebrow thinning, those are like our typical low thyroid symptoms right. Then on the other side of the fence we may have anxiety and depression, OK. They've done studies, you know they've compared lithium and T3 hormones for patients that have depression and T3 actually did better than lithium the actual medication.

Alex: Wow that's interesting.

Dr Macrhegiani: Yeah. Typically used for bipolar but in general it did better. So you can see mood related issues, of course fatigue which is kind of typical but then you could see anxiety, depression, you could see constipation or low bowel motility. You could see brain fog, cognitive issues, you may even see finger nail issues like vertical ridging in the nails etc. So these are all real powerful examples of what that can look like.

Alex: That's super interesting and I think one of the things that can be challenging is when someone's trying to get clarity around what may be causing symptoms they've got, as you mentioned they are some specific symptoms to thyroid issues, which are kind of red flags beyond your traditional kind of fatigue symptoms let's say. So you mentioned, for example, cold hands and feet, you mentioned kind of the resting level of capacity of the body so they would be good clues if they are prominent symptoms of somebody that the thyroid would be a key place to go and get more clarity and to go and look.

Dr Marchegiani: Correct and then I find patients that have fatigue issues, you know everyone has the right to have more than one issue going on at once. When I see my patients, that you know OK this is female, right, maybe there's fatigue, we run some history there's some autoimmunity in the family, maybe there's already been another diagnosed autoimmune issue, so OK we're going to look at and we're going to run a full thyroid panel, we're already thinking that.

But some people you come into contact and you think 'oh it's definitely their thyroid' but then their adrenals are in the tank their cortisol is so low, the cortisol which is made by the adrenals, sometimes it's the adrenal cortisol issue that's causing the thyroid to be low because we need adequate levels of cortisol to activate our thyroid hormone. So we have our TSH, which is the primary hormone that we're measuring to assess thyroid function, guess what not a thyroid hormone it's a brain hormone.

So TSH is here then we have T4, right because TSH then it's the volume that talks to the thyroid and then the thyroid makes T4, alright, which is relatively inactive, and then it gets converted throughout the body periphery but also throughout the body liver, gut, metabolically throughout the body and we need various nutrients to make this conversion; selenium, zinc, magnesium, CoQ10, Vitamin A. But if we have imbalances in cortisol, very low or very high levels of cortisol that could alter our ability to activate and make conversion and it also can affect the volume coming from the brain. People that have very high amounts of stress, high cortisol, it could actually lower your TSH which is that brain hormone. So you can see how the adrenals could easily interplay

either with conversion down stream with T4 to T3 or upstream by altering the volume and how the pituitary and the hypothalamus right up in here talk to that thyroid downstream.

Alex: Yes and as you've got deficiency in one are of course the body then tries to compensate to find a way to balance with other areas, right. So someone, for example, whose got blockages in the mitochondrial function or they've just completely burnt out their system and their kind of in a crash then they're going to start to pull on their adrenals and their thyroid to try and find whatever way the body can to get energy and get things moving. So you tend to have a ripple impact from one being impacted to the others.

Dr Marchegiani: 100%. So we want to have a couple of ways that we look at and access things. So we look at things subjectively, hey let's line up all your symptoms and then when I hear a symptom most people on the conventional side, they're like what drug can I prescribe for what symptom, what category of symptoms does that fit into where I can label it a disease and then prescribe you a drug, right. Or you may have, like, people on the natural side who say hey what nutrients can I give to control the symptom, they're still giving nutrients to control symptoms.

I'm thinking about hey how can we go upstream and what symptoms would that lead us to, to think it's an upstream issue. So if I see fatigue downstream I may look at the thyroid and adrenals upstream. So I look at clues with the symptoms down below and I go up to the systems above and that gives me clues and what systems could be at play but then we'll also run lab tests to figure out the function of those systems. So if we see these systems aren't functioning well, hormones, gut, detoxification, digestion, infections, if we see there are issues in any of those systems then that gives us the ability to then work on the systems and not necessarily worry about the symptoms because if the systems are addressed everything trickles down stream.

Then of course the next step is looking at the underlying stressors that could cause the system issues, physical, chemical, emotional stress. Whether it's too much exercise, too little, it could be food issues on the chemical side like gluten or inflammatory, junky fats, too much sugar, too much carbohydrate, it could be nutrient deficiencies. It could be infections right, it could be emotional stress, poor sleep, relationship stress, financial stress, so kind of the model in which I've created that helps me educate my patients, because I see patients from all over the world, is the SSS approach.

We have the stressors over here, that then mount up and we have our stress reserves once over capacity we have our systems start to break down, hormone, gut infection, detox, nutrients. Then when these systems break

down then we have the symptoms down here, most people are just myopically here, we want to go up stream to the systems and then also upstream to the underlying stressors that predisposed everything. Does that make sense?

Alex: That's a really neat model and I want to come back to that a bit more in a little bit. Before we do that though you mentioned that you run various lab tests and also you're looking at the picture of symptoms. I think one of the things that often confuses patients is that they might read something online about thyroid, they will go and see their general practitioner, they'll get a standard set blood tests and maybe they'll test T4 and TSH and they'll say yeah that's fine it's within the reference range.

Maybe say a little bit about functional reference ranges versus standard reference ranges and also why just looking at that fairly narrow picture could be limiting? Because there may well be people that are watching or listening to this that believe they have thyroid issues, have thyroid issues, but have been told that they haven't because perhaps they've done that fairly basic level testing.

Dr Marchegiani: Yeah those are some very insightful questions. So there's two major issues, right. The first one is what tests are being run because a lot of times the adequate tests aren't even being looked at to even assess the whole picture. Then the second issue is OK let's say you run these markers now what's the acceptable ranges. So there's two kinds of issues, let me deal with the actual marker issues first.

Your conventional MD or even your endocrinologist may run TSH, maybe a T3 total or maybe a T3 free, that's it. You're going to get typically two markers, maybe one, that's it, but you can see it doesn't give you the whole spectrum downstream because, well number one, TSH is important, right, TSH stimulates the thyroid to make T4, we have our total and our free fraction of the hormone. So total is everything, it's the whole thing the glands making but then the free represents the bioavailable hormone that's not bond to a protein, this is the protein that binds to a receptor site. So think of a hormone as like a key, think of the receptor site as like the lock, right. So imagine you've got you know a hundred keys in someone's purse that's the total fraction of the hormone, think of the two keys that are actually in the person's hand, the 98 in the purse, that's like the free hormone. It can actually work and bind to the receptor site.

So we have T4 total and free, the same thing exists with T3 meaning we have the total fraction as well as the free, think of that the two keys in a persons hand that's the free T3 and think of the 98 in the purse that's the total and the total represents all of it. Now in general T3 is more active, right, it's about

300-400% more active so it's important that we're able to look at this mal-conversion, a lot of people don't have this adequate conversion and then some people even have an increase in reverse T3, which is a kind of side stepping metabolic pathway that will increase as a way of slowing down the body.

Then the next step after that is the antibodies because the antibodies are very important because if there's an autoimmune attack going on here that's going to exacerbate the thyroid inflammation and it's going to decrease the glands ability to functionally make thyroid hormone. So we've got to look at TSH, T4 free, T3 free, T4 total, T3 total or reverse T3, and then primarily the thyroid antibodies TPO and thyroglobulin.

So that kind of wraps it up with the thyroid testing, I can go into the functional versus optimal range in a second but I want to give you an opportunity to ask a question there.

Alex: Yeah no I think that makes sense and I think sometimes what that takes is a certain assertiveness within the patient quite honestly, that if they're doing it down the traditional medical path that they are advocating for the fact that they want more than just the kind of surface level of tests. I think one of the challenges that one faces, certainly here in the UK, is that because the way medicine is generally funded by the national health service, endocrinologists and GP's are quite limited in the testing that they would be able to get funding for on the NHS and I suspect it may be a little different in the US in as much as that people are willing to do tests because people's health insurance or people are paying for it privately but then you've got the narrow perspective that often you've got with an endocrinologist, which is 'no this is the thing that we look at'.

So it takes a certain courage and a certain ability to self advocate for the patient to make sure they get that breadth of testing in the first place.

Dr Marchegiani: Exactly and it's really hard because, we'll go into the ranges here in a second, is there's two different philosophies at play here, right. So the allopathic mentality is health exists in an up or down, left or right, black or white, very binary kind of model. So for instance if you have a disease that's like the light on, if you're healthy that's like the light off. It's it, it switches either up lights on or down lights off. In functional medicine health or disease or dis-ease, dysfunction, exists like a dimmer switch, it's on a continuum. So for instance if the light on equals disease, well what if the lights only 80% on right, because that dimmer switch has a continuum on which is can exist, it's not fully binary, off on one zero, right.

So what if the light's 70% or 80% on right? Well in conventional medical world they would say well if it's not all the way on you're totally fine but let's say your 70% towards a disease, meaning there's a whole bunch of symptoms behind you that are accumulating and affecting the quality of your life. You're basically told you're fine, what they're really saying is 'hey how we're looking at and internalizing your situation is it's going to take longer for you to come up on our radar as we're not looking at you in as sensitive a way as a natural functional medicine doctor would.

So we've gotta understand their thinking, right, it's apples to oranges. Patients say but my endocrinologist says I'm fine 't's like yeah because the lights not 100% on, your 70%, your 80% on, you gotta know what they're looking at compared to what we're looking at right. Health is a continuum right, it's a spectrum, they're looking at it it's very binary and that's the difference in the mentality perspective. Does that help?

Alex: Totally and I think of course one of the challenges here is how do you even get those averages and those reference ranges? You take a snap shot of the population and you find the averages and then you stretch based upon that.

Dr Marchegiani: Yeah you have two standard ideations, to the left and to the right, that basically creates a Velcro of 95% of the population fits in that so essentially 2.5% of them are high, 2.5% on the lower considered in disease ranges. Well number one go to an airport, just sit there and people watch for an hour, 95% of the population is not healthy. I'm sorry it's pretty bad. Also who gets more thyroid testing, people that have thyroid issues or not? People that have thyroid issues so of course then the range becomes even more skewed because the more data points to make that range you're weighing in more patients that have thyroid issues that are getting tested.

Alex: It's got to be the worst 5% of the hundred people that do it right?

Dr Marchegiani: Exactly so if you use the reference range of the 95% we're looking at that middle third, the middle 50% as kind of being the sweet spot. So versus here we're looking at it more from here, and then you know our danger zones pop up when we start to get into that outer third on each side. So we're picking things up before it becomes an extreme issue.

Alex: Yeah and it's interesting that one puts it say in the context of those reference ranges in adrenal fatigue and it's like if you've got Addison Disease, you've got Cushing's or something, you're going to know about it and you're endocrinologist is going to pick up on it, but because you don't have one of

those things it doesn't mean that everything is functioning normally as we're saying here with the thyroid.

Dr Marchegiani: 100%. It's the dimmer switch, OK you're lights 80% or 90% on, you're not all the way there so they're just going to tell you hey go home and get sicker until that lights all the way on, until our methods are sensitive enough to pick you up.

Alex: Yeah and it may be that the light never goes on but you're just going to be at a suboptimal level and of course these things can be a little bit out of balance and have an enormous impact in terms of somebodies quality of life and how someone's actually feeling. Particularly given what you were saying about the triangle earlier with the adrenals, the thyroid and mitochondrial function that there is an interrelationship between those pieces so someone may be a little bit out of balance on their thyroid, a little bit on their adrenals and a little bit on their mitochondria but that collection together stacks up to someone hardly being able to get through the day.

Dr Macrhegiani: Yeah and then what happens is there's a couple of curve balls that start to happen. If you are persistent enough and you are saying 'hey something's' wrong even though tell you no you're fine, what tends to happen is there's three different pathways that tend to be activated.

The first one is if you're older 'hey you're just getting older, this is just what getting older is like' and you just have to deal with it and accept it and shut up. That's number one. Number two 'here's an anti depressant and a script for a psychologist, this is all in your head' you know sorry. Or if you're a female that's cycling 'hey you know this could be hormonal issues here's a birth control pill'. So it's typically one to three of those categories and it could be a combination of all of them too especially women are 5 x more likely and if you're in you're 30's they recommend a birth control pill, here's an antidepressant and we can't help you anymore, right, it's in your head.

Alex: So then it kind of goes back to what we were saying a little bit earlier that it takes that determination and that self-advocacy of the patient and then working with a practitioner that really understands how to work from a function point of view. I think that's a good dovetail to track back what you were saying about, so you have this three kind of part model you were talking about, SSS.

So break that down a little bit more and maybe say a bit more about some of those, so if we go upstream to the kind of beginning of that process what some of those stressors might be and to break that down a bit more for people.

Dr Marchegiani: Yeah so let me just draw out a simple patient, I see about 60 patients from all over the world every week so a typical patient may come in, we may do a really in-depth history and we may find like in the stress bucket, right, we have physical, chemical, emotional. They may be doing crossfit, right, or it's too much exercise for them and we run their history and they're really tired at the end of the week or after their workouts, unable to recover. So they may be on that physical bucket there's a lot more exercise, right, maybe on the chemical bucket, right the chemical stressors, their eating gluten. Maybe there's some extra inflammatory omega 6 fatty acid's in there. Maybe they're skipping meals and they're trying to do this intermittent fasting thing with weak adrenals, right, so we have some blood sugar stressors and inflammatory stressors and then maybe they have some issues with their work, they really don't like their job or there's some financial stress in their life.

So now they're already putting these stress balls in our metaphorical stress bucket, right, and in the research world we know that as allostatic load, their allostatic load is being stressed. Now are systems are being taxed, so our adrenal system, our hormonal system is being taxed. We're starting to see aberrations in the female hormones, we're starting to see inability to deal with stress, we're starting to have poor digestion, we may have infections going on, our detoxification pathways may be a little bit taxed and we can't quite excrete the chemicals in our environment and then down stream we're starting to have fatigue, we're starting to have a lot of PMS. We're starting to have a lot of depression and mood issues and then cognitive wise a lot of brain fog, we can't quite function at work.

So you can see in this kind of made up patient that I've seen hundreds of times, they repeat themselves over and over again, this is a typical pattern that we see starting from the stressors to the underlying system imbalance and how that manifests from the stressors and the to the very end stage with the actual symptoms.

Alex: And I'm guessing that often when people come in what they're expectation is, particularly if they've come from a more allopathic medicine perspective, is you're going to fix the symptoms. It's like what can you give me which is going to correct the symptoms of this or to raise my thyroid levels, or whatever, but what you're really saying is that if you don't deal with the stressors in the first place that you're going to be quite limited in the impact you can have.

Dr Marchegiani: Exactly. There's some things that we can palliative do to kind of help down stream that allow them to feel better faster but we just got to make sure that the root cause is not being ignored as well. So we got to do

it on both ends if we're going to do it, that's number one. And there's an x factor here to, the x factor with a lot of it is conventional medicine tends to ignore autoimmune thyroid issues.

They do it for a couple of reasons, because of the immuno suppressive or corticosteroids that would typically be used to address autoimmunity. Well those medications tend to have more side effects than the actual person who had the thyroid issue to begin with so conventional medicine tends to not look deep enough with autoimmune thyroid issues, just because it's a risk reward kind of ratio or analysis they are making where those medications really, they aren't necessary because there's side effects. So because of that the underlying issues, which may be autoimmunity, tend to not even be looked at and assess to begin with because of the treatment options for it.

Alex: That's really interesting so what you're saying is that because they don't feel they have good treatments anyway what's the point in finding out and getting clarity. I guess you're talking about Hashimoto's?

Dr Marchegiani: It doesn't change anything for them. Now for us it changes everything because if we know there's autoimmunity going on we want to provide treatment for the underlying stressors and systems and then watch the antibodies or watch the autoimmune attack drop, which tells us that we are actually getting to the underlying issue, which is the immune issue too.

Alex: That's a good place to talk a but more about Hashimoto's because I think that's another, as we kind of unpack this thyroid piece more it's an area which is probably massively under diagnosed and it's one of those ones where one can easily get caught up in the symptoms and again without tracking back to what's really underlying that and what's really behind that.

So if you see an autoimmune thyroid patient, someone who has potentially got Hashimoto's would you treat that differently to standard weakened thyroid or would it be the same fundamentals you'd be starting with?

Dr Marchegiani: I'm mean they're similar fundamentals because there's a great chance of, let's just say, a false negative regarding autoimmunity so even if we test or assess someone for autoimmune thyroid and let's say their TPO or thyroglobulin antibodies come back negative first time I'm still making the assumption there's an autoimmunity going on at some level. Number one because the big issue is we start off with an autoimmune template and autoimmune diet because there are certain foods that number one can drive that autoimmunity and drive that gut permeability that we tend to need for that autoimmune reaction to begin with.

So with gut permeability we have our tight junctions in our gut and when we have inflammation and we have certain foods, especially gluten and maybe even casein and dairy and other foods, our tight junctions start to open up and then undigested foods can get into our blood stream and rev up our immune system. So we're already cutting out a lot of the food stuff that could be unzipping that gut lining. Number one the foods already healthy to begin with that we're adding in and the food that we're pulling out aren't uniquely nutritionally dense or providing some sort of value that we couldn't get in other food that are more anti-inflammatory.

So the diet and lifestyle changes are already going to be knocked in to begin but also kind of creating expectations on how this person can heal. Some people may need thyroid hormones for life depending on how long there's been an autoimmune attack in the background, because that's going to attack and beat up that thyroid tissue and those thyroid follicles may no longer be functional and they may not be able to make enough thyroid hormone to begin with. So because of that it helps us to draw expectations and it gives us some good markers to say hey how are we doing as treatment progresses, can we watch these antibodies drop and that's really encouraging too.

Alex: It's interesting that you're saying that, what I'm really hearing you say is that even with autoimmune thyroid issues that often, even though you're saying and I appreciate that you may still need to supplement with hormones, that a key piece of the jigsaw is still what's happening in terms of gut function.

So maybe just say a bit more, and you've kind of already touched on it a bit, but say a bit more about why gut function is so crucial to a healthy thyroid.

Dr Marchegiani: It's a great question because 80% of your immune system is in your gut, right. We have it in our gut and out gut, right, gut is our gastric associated lymphoid tissue right, being our lymphocytes, which are neutrophils, lymphocytes, monocytes, eosinophils, basophils, these are our immune cells. OK and then we have out gut, which is our mucosa associated lymphoid tissue in the small intestine.

So 80% live in that type of area so if we're chronically stressing out our gut, we have poor digestion, food's not digesting, we have putrefaction, rancidification, fermentation of our foods, and we have inflammation and we have inflammatory foods coming in and then we have our gut lining opening up and we have all these undigested proteins and lipopolysaccharides getting into our blood stream. Our immune system is chronically firing, our immune system sucks up lots of energy as well so not only could we be exacerbating and intensifying the attack on our thyroid through this gut inflammatory leaky gut mechanism the immune system will also suck up a lot of metabolic

resources to deal with that attack, that's part of the reason why if we get sick we get really tired when our immune system is fighting these things because there is a lot of energy intensiveness to go and activate your immune system to attack things in the body.

So most people are firing their immune system through stupid things like food. No let's not make our immune system attack food, let's let it relax so that when we have foreign invaders we can use it for those reasons.

Alex: I mean as you're talking what strikes me is it's sometimes fascinating how someone can have, let's say thyroid issues and it may be for whatever reason, that maybe it's a budget issue, maybe it's a body can't handle too much, the practitioners starts off working with let's say digestive function. Works on digestive function funnily enough mitochondria start to work better, which then means it reduces the load that suddenly the body starts to self-correct and self balance what's happening with the thyroid.

It's almost like you can come at things in different ways but ultimately any way that you can take a load away and allow the body to use more of its resources for other things that you can almost, what I think I'm hearing you say, is your almost finding ways to unlock the bodies own healing capacity.

Dr Marchegiani: Correct. They're like what I call the low hanging fruit; you know working on the diet is really important. Also making sure we can digest the foods that we're eating is really important right. Not skipping meals especially when we have blood sugar issues and thyroid issues is really important. Having healthy proteins and fats with every meal, no longer than five hours is really important. Making sure you're sleeping adequately at night is really important, and again there's a lot of intermittent fasting stuff out there which can be great when your hormones are good but a lot of times some of these modalities can stress people out so I see a lot of people that are like 'oh I'm doing intermittent fasting', which is great if your hormones are in good shape that may be OK, right. I'm not saying it's not it's just is it good for you and that's where a good functional medicine doctor will look at everything and help you create that plan that's good for you.

Alex: So that's a really great point I'd like to break that down a bit more. So if you, because this is something that we see quite a bit, that either people will come in saying I've gone vegan because I've read all this great stuff about being a vegan, they're not getting enough protein, they're just killing their adrenals in the process, the fact that they're kind of compensating. Or as you say someone comes in saying I've been reading or I've been listening to a podcast all about the benefits of intermittent fasting, of which there are an

enormous amount, but actually it's making their symptoms significantly worse.

Maybe just explain a little bit about the mechanism of why when someone fasts, why that then causes stress and activates both the adrenals and the thyroid.

Dr Marchegiani: Yes so in general when we're fasting, not eating as much, we are going to be spitting out ketones which are great, right, these things also have really good appetite satiating affects so its easy to go a long time without food, right, number one. Number two we will also be going into a little bit of gluconeogenesis, which is we're utilizing cortisol to shred up some amino acids in your body and convert it into glucose. Problem is if you already have lower cortisol levels that's where it becomes a little bit stressful right. People with healthier adrenals the gluconeogenesis that may happen in the background, that kinds of get a little glucose going, may be a little bit too stressful on the body.

So number one is we can still get a lot of those benefits by just keeping carbohydrates under control by getting more extra proteins and fats in through the diet and that way we're not going into, well let's just say a starvation effect, we're in more of a nutritional ketosis where we have adequate nutrition and calories but we're still spitting out a whole bunch of these ketones.

And the blood sugar's important, I mean I'm macro nutrient agnostic, I find most people do better lower carb initially and then we adjust the macro's and it depends on what your body type already is. Are you kind of ectomorph and already lean but you have thyroid issues or do you have a weight issue, do you have insulin resistance because insulin resistance is so prevalent we tend to start more on the lower carb, higher fat, moderate protein and then we adjust from there. But you know I don't have a dog in the fight when it comes to macro nutrients but I tend to favour on the lower side just because of the amount of extra sugar in carbs that are in peoples diets.

Alex: And from what you're saying as well making sure that if people have got issues with adrenals and thyroid that they're getting a regular top up of energy from food so their bodies not having to compensate for that deficiency.

Dr Marchegiani: Yeah. So here's your blood sugar, right, you wake up your blood sugar's kind of here, you eat, you know good proteins and fats are like logs in the metabolic fire, right. You got throw protein and fats, that's a log, maybe a little bit of kindling which maybe is your carbohydrate, and that log burns for four or five hours. If you're number one, if it's a really cold morning

and you don't start a fire and you don't have good healthy metabolism that's a problem, right. Then number two if you're putting carbohydrates, which are the kindling twigs and paper on the fire you're constantly having to light that fire all day long just to keep it going, right, because it's up down, up down.

(52.47)

So the more we can prevent our blood sugar from having to go up and down, up and down, if we can kind of keep it somewhere in the middle, then we can avoid the high blood sugar spikes, which then cause a whole bunch of insulin to bring it down, and then a cortisol adrenaline to bring it back up. So we have this insulin, cortisol, adrenalin, insulin, cortisol, adrenalin and if we could be somewhere in the middle we can buffer the high and low of the insulin and the cortisol adrenalin. And that takes a lot of stress of our pancreas and our adrenals.

Alex: Yes because it can get to the point when there's real adrenal fatigue, for example, the body just can't do that process, so you don't eat and you just crash.

Dr Marchegiani: Yeah and there are exceptions to every rule. A lot of people listening to this stuff if you're not a clinician, if you haven't seen thousands of patients and all you have is your experience, you're like 'intermittent fasting is awesome, I love it' it's like they are so emotional because they are connected to this issues helping them and then they extrapolate that everyone is like them and that can't be further from the truth.

Don't get me wrong there are common themes that are going to be good for everyone, like everyone should be eating some protein, everyone should be eating organic, everyone should be drinking good clean water, right. So there's certain things that I think are, let's say, absolutes but then there are things that you have to customize and you only can see this if you've worked with lots of different people because then you can see some of the nuances that may come into play.

Alex: It's so funny you say that. We had all of our practitioners together this morning, we had a practitioner training session, and one of the comments was that as soon as someone starts making absolutes about non-absolutist issues you know they haven't got much clinical experience (laughs).

Dr Marchegiani: Yeah you know that for sure. I mean the only exceptions I would say is 'OK organic food' or 'OK good clean water' right, but then from there we can adjust things, right.

Alex: A couple of specifics that I would be curious to dip into a bit more, do you have a position around, or how do you choose where, to use things like glandular's versus hormone replacement. Like in terms of beyond the kind of dealing with the stressors and dealing with the kind of functional kind of stuff, if you need to put actual support in in terms of thyroid function or adrenal function, what are some of your preferences and some of the ways you would decide the path of how to do that?

Dr Marchegiani: That's a great question. So I've manufactured my own glandular that has full spectrum support in there so I love glandular's because you're not just getting T4 and T3 you're getting other types of protomorphogenic compounds, T2 which has effects in increasing metabolism, T1, calcitonin, T0. So I do always try for glandulars first, there are some people that may need trosint, which a let's say cleaner version of T4, there are some people that may need cytomel or just let's say a bio identical just T3.

I find most can get away with a really good glandular as long as the foundations are dialed in. As long as the diets dialed in, as long as the nutrients are dialed in, blood sugar's dialed in, the gut is looked at, and then I like to dose mine at least two times during the day. I find when you're getting a little bit of T3 out of some of these things it can kind of go up and down, usually in a 4 to 8, 4 to 6 hour period and people may crash around 12 to 5 o'clock.

(56.07)

So taking it twice a day I do feel tends to help and improves that and then I'll typically test their levels two to three hours after taking their support in the morning just so I can see where they're at at their optimum during the day.

Alex: That's really interesting. Yeah because if there are points in the day where it's crashing again you can put a ton more in at the start of the day I guess but you need to have that kind of steady support that's there.

Dr Marchegiani: Yeah and I think a lot of people, they kind of use thyroid like a conventional medical doctor would and it makes sense because a conventional medical doctor is typically just prescribing synthroid or levoxyl or levothroid, which is a synthetic T4 it's tetraiodothyronie. with a sodium molecule with a attached it so it can be patent. Now why does that matter? Well it's got a 4 to 5 day half life so when you take it it's a really slow burn, when we deal with T3 that could be anywhere between 4 hours to 8 sometimes a day but it tends to be let's say a lot faster.

So we've got to look at it from both sides. Now I did a summit just a couple of weeks ago called 'The Thyroid Reset Summit' so if anyone's listening and they

want to get more information we dove in, I talked to lots of medical doctors about some of these topics as well, but I tend to go more with the glandular's. I mean on the prescription side you have WP, which is really clean three ingredients, MCT, inulin and glandular, and then you have NP which is good, it's got a little lactose in it though so that's one of the things why I'll go with WP. Then you have NP and armor, they have a little bit of maltodextrin in there and then you're going to have your cydomel or your liothyronine, which is your T3, then you have your medication, synthroid, levoxyl, levothyroid for your synthetic T4's and then you have your cleaner version of synthroid which is tirostints, which is let's say a liquid capsule without the extra gluten, corn filler in there.

Alex: That was a lot of information that was great.

Dr Marchegiani: Yeah that was kind of a crash course.

Alex: Just a couple of questions, I'm mindful of time, in terms of people which are super sensitive, so there are some patients that you'll give a pretty small amount of a glandular to and they'll just go off like a rocket ship and then crash or they'll just kind of get a load of anxiety, how do you tend to introduce doses or how do you tend to work with those kind of sensitive patients?

Dr Marchegiani: Great. So number one I find patients that are like that also have lower cortisol too so one of the things is we'll work on the adrenals, we'll kind of give the adrenals a few weeks to a month head start because thyroid hormone can lower cortisol, right. If you go look at contraindications for synthroid, for instance, one of them is, or if you look at contraindications for Addison's Disease, it's actually taking thyroid hormone. So that can actually lower cortisol more because you're increasing the metabolic rate thus increasing the metabolism of breaking down cortisol that's lowering it, right.

So in my opinion you've got to clinically, you know seeing thousands of patients, you've got to look at and address the adrenals first and then of course we're making changes with the diet, we're making changes with digestion, we're getting all the nutrients on board to make thyroid hormone too, especially selenium, especially zinc, especially magnesium, especially CoQ10, Vitamin A. So we're getting all of those nutrients on board there so when we give that thyroid as well, we have that adrenal support in the background we have those nutrients, and we start off very low and we may even do some of it sublingually, just to maximize the absorption because a lot of people if they have gut issues they may not get good absorption.

Alex: This has been fascinating, I'm mindful of time, there's a lot more that can be said but of course there's a lot more that's out there that you've put

together. So maybe say a bit more, Justin you mentioned the thyroid research summit, but a bit more about how people can find out more about you and your work?

Dr Marchegiani: Great. So if you head over to justinhealth.com, I'm Dr J. I have a podcast and I live YouTube channel there and blogs and we do a lot of live videos as well where we engage with people all over the world. I see patients as a clinician from all over the world as well, I'll be having a thyroid reset masterclass soon, if people want to engage and learn more and I also have a book coming out very soon called 'Thyroid Reset'. So kind of providing lots of good information, podcasts, blog articles, live engagement classes and books. So that would be the best place to see me, justinhealth.com.

Alex: That's awesome, yeah you seem to be a bit of a machine of putting information out there which is awesome and I very much appreciate not only your knowledge but your passion and energy of delivery. It's been awesome thank you so much Justin.

Dr Marchegiani: Thanks Alex for having me as part of the summit I appreciate it.