

Paleo Solution - 220

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Robb Wolf: Hi folks. Robb Wolf here. Six listeners can't be wrong. It's the Paleo Solution podcast and today I would like to welcome a very special guest, Dr. Mike Hart. Doc, what's going on?

Dr. Mike Hart: Thanks Robb for having me on. It's been a long time coming but we finally got around to it and I'm looking forward to having a good podcast.

Robb Wolf: I'm excited. Doc reached out to me like we were just talking about a minute ago probably like a year ago and we've been trying to make this thing happen. Mainly all of the fall down has been on my part surprisingly so that --

Dr. Mike Hart: There's been a little bit on mine too I think. I had to push it back a half hour today.

Robb Wolf: Yeah. Yours was a half hour. Mine was 11 months so.

Dr. Mike Hart: It's --

Robb Wolf: I think I'd lose that one. So Doc, let me revel through our sponsors super quick and then --

Dr. Mike Hart: Sure.

Robb Wolf: --we'll jump in on the main gig. Everybody check out FrontDeskHQ.com. Front Desk is your mobile-based solution for service-based businesses. Great for crossfit, dog walking, yoga, Pilates, all that type of stuff. WellFoodCo.com, WellFoodCo is a great resource for grass-fed beef jerky, almond flour cookies. We have a keto a post workout style MRE pat going with that also so check out WellFoodCo.com. PerformanceMenu.com, the Journal of Nutrition and Athletic Excellence, \$30 per year and \$100 per year option. The \$30 per year gets you access to all the current issues. \$100 per year gets all the current plus back issues as well as a 15% off on the Catalyst Athletics Store.

MasaNaturalMeats.com, these are the folks that I get my grass-fed meat from. They ship to everywhere in the 48 in the US. I don't think they ship to Canada. I'm sure we're going to have a lot of Canadian listeners on this one so you guys will have to track down some grass-fed meat elsewhere.

CavemanCoffeeCo.com, use the discount code Robb Wolf and get a 10% discount and finally Highlite.com, use the discount code RW25 and receive a 25% discount. Okay, Doc, how are you doing?

Dr. Mike Hart: Good, how are you doing?

Robb Wolf: Really good, really good. Just running around like a crazy man just a couple of days here before Paleo FX and getting my ketogenic diet from traumatic brain injury talk wired up. So I'm pretty much done on that and been buttoning up the whole, the last pieces and everything. How are you doing?

Dr. Mike Hart: I'm doing good. I'd like to hear actually a little bit more about that talk you're doing on the posttraumatic injury. That sounds pretty interesting.

Robb Wolf: Bam, well we could dig into that after we talk about you a little bit.

Dr. Mike Hart: Sure.

Robb Wolf: Give folks your background.

Dr. Mike Hart: Okay. So I'm originally from St. John's Newfoundland. I grew up there started getting into fitness around the age of 14 or 15, played hockey my whole life, still play hockey now. I went to Memorial University in Newfoundland at a bachelor's science in nutritional biochemistry. Then I went to medical school in Saba, it's in the Netherland Antilles, then I came back to Canada and did my residency in family medicine. Then since I graduated from family medicine just over a year ago, my interest is still in family medicine but I'm doing some bioidentical hormone replacement therapy. I'm also doing IV vitamin drip and doing a little bit of cosmetic stuff as well. Just recently, I've actually just opened a medicinal marijuana clinic so.

Robb Wolf: Nice. Nice.

Dr. Mike Hart: Pretty busy right now but just trying to kind of keep the peace I guess and just push forward.

Robb Wolf: So Doc, clearly you have a very – I almost hate using the terminology but a holistic kind of background. I would --

Dr. Mike Hart: For sure.

Robb Wolf: --you know, almost you clearly have an athletic background. You integrate a lot of stuff like what made you want to do family medicine? Like a lot of people don't want to do family medicine these days and they have a lot of back and forth on that. What dragged you into it and why are you enjoying that?

Dr. Mike Hart: Okay. So first of all you got to be honest, I really don't like working long hours in the hospitals.

Robb Wolf: Okay, okay.

Dr. Mike Hart: I got to throw that out there. But you know, the nice thing about family medicine is that you can do kind of what I'm doing now. I can branch out into a lot of different fields whereas say if you just do a specialty you're kind of more or so limited just to your specialty.

Robb Wolf: Uh-hum.

Dr. Mike Hart: So a surgeon can't really get into family medicine and then do hormone therapy and then do IV vitamin drips. It's just not the quite the same transition. Whereas when you do family medicine, you're a little bit of a jack-of-all-trades. So that was kind of the main reason why I wanted to pick it. Then the other thing too is you can just reach more people. You know, more people I think can relate to the topics that I kind of discussed on my blog and topics that we're going to discuss today. So I'm all about efficiency and helping as many people as possible in the shortest amount of time as possible.

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So I think that was just the best route for me to go.

Robb Wolf: Nice, nice. So it's interesting, I usually see folks who branch into the direction that you're going. They almost drop the family medicine practice of what they're doing then they focus almost exclusively on say like anti-aging medicine or chelation therapy or whatnot. So it sounds like you definitely like keeping a couple of different projects going on. I mean to me it seems like an easy way to not get bored just covering all these different topics.

Dr. Mike Hart: Yeah and the thing is too is I was trained in family medicine and I went to school for over ten years pour it all together. I don't want to lose my family medicine skills. You know, I still want to know how to take care of a girl who's pregnant. I still want to you know, know how to take care of someone who is just a baby. I want to still have those skills so there's all

reason to kind of keeping up with my family medicine in the beginning part of my career.

Robb Wolf: Nice, nice. So you know, tell folks a little bit about the –you know, I know people want to know both about the bioidentical hormone therapy and then also the way that you’re approaching the IV nutrient protocols. Like who are you finding in your practice that is benefiting from the bioidentical hormones? Kind of walk people through maybe the top three or four different types of people that you’re working with with that or if there are many, many different types of people. Tell them about that.

Dr. Mike Hart: Sure. So I’d say number one has to be emails that are hitting their menopausal age.

Robb Wolf: Okay.

Dr. Mike Hart: Because that’s one that’s – that’s probably the one where bioidentical hormone replacement therapy makes the most sense. So you know, I hope I veer off too much here but what I mean by that is traditionally the medicines that were used for women were not actually estrogen and progesterone. It was something called medroxyprogesterone and then premarin, which is not actually bioidentical to your body. A lot of people don’t know that there’s actually three different types of estrogen in your body. It’s really easy to remember E1, E2 and E3 just estrone, estradiol, estriol. What we do at the bioidentical hormone replacement therapy clinic is that we actually replace those hormones in a ratio that’s actually bioidentical to your body. When you do that, you’re going to get much better results.

You know, people often bring up – the first thing that most people bring up when you talk about hormones especially in menopausal women is always breast cancer, a WHI study. But unfortunately that was done with synthetic hormones. When you do it with bioidentical hormones, you get a lot different result and a lot better results.

Robb Wolf: Nice, nice. You know, it’s interesting so the clinic that I’m a part of here in Reno, it’s quite avante garde, you know, doing all this risk assessment stuff. We talk about paleo, you know, it’s great. Then I’ll talk to the docs about like hey this person looks like maybe their thyroid might have some issues or maybe this gal has some progesterone, estrogen imbalances or maybe this guy you know, clearly his DHEA is low, his testosterone is low, he’s got really high estrogen like maybe we need to think about some management with that. God love these folks like they’re really, really good on the lipidology but then you mentioned trying to maybe get back

to some sort of youthful hormonal profile, which maybe we can talk about that whole concept in a moment but they kind of lose their minds over that. Like they're really cagey about that. They're like I don't know, I think I'm going to give people cancer and all this stuff but yet they're willing to prescribe statins and everything. So it's kind of a little bit of an internal – it's funny, you know, it's some of the fun ideas of learning and trying to get ideas across. But what do you think about that? Like you know, --

Dr. Mike Hart: Yeah.

Robb Wolf: --for me if we think we use maybe a paleo template to start from big picture stuff like sleep, food and exercise, then when we start looking at hormones, doesn't it make a pretty good argument to think about like a youthful hormonal profile and maybe try to emulate that?

Dr. Mike Hart: Absolutely. You know, before I kind of answer part of the question about cancer, I always say to all my patients like listen what I can do is only about 20%. The rest of the 80% is up to you. You have to eat right, you have to sleep right, you have to meditate, you have to exercise. Like you take care of that, you probably won't need to come see me, you know?

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So I always think that if we can bounce someone's hormones with diet, which you can oftentimes especially in men with high estrogen levels. You know you get a man to lose a bunch of weight and then all of a sudden his testosterone goes up and his estrogen goes down and that simply just because of the fact that there's an enzyme in your adipose tissue called aromatase that converts testosterone to estrogen. So that should always be the first line of treatment and it always will be for me.

But just to kind of get back to what you said I mean you brought up cancer. I brought up cancer earlier. We talked a little bit about the breast cancer is often brought up and just to touch back on that for a second. So when we do the bioidentical hormones, we actually put a – I use something called biast. So biast is two different hormones. It's estradiol and estriol and on the women's breast, there's alpha and beta cells so when the estriol so when the estradiol attaches to the alpha cells, then that can cause cancer. But the estriol actually attaches to the beta cells, which is going to inhibit cancer.

So we always give a ratio that we have much more of the third estrogen than the second estrogen.

Robb Wolf: Hmm.

Dr. Mike Hart: And the problem with premarin is that it does not give that ratio. There's almost no estriol in it and it's almost completely estradiol and estrone and estrone is also one that attaches to the alpha cells, the ones that can cause cancer. So that's kind of I guess part of that mix. I don't know if I went in with too much depth there Robb.

Robb Wolf: No, no, no, that's great. That's great. You know, it's interesting I did talk with Dr. Kirk Parley a fair amount about this and he's even suspicious of the – I fully agree and I think he fully agrees that the bioidentical hormones are superior for a variety of reasons. But he's even argued that a lot of the kind of epidemiology that's been done on that stuff is kind of suspect. So even if there is an increased cancer potentiality with these say like the premarin and the unbalanced estrogen that you know, there may be some signal and noise issues there in the way that folks are looking at that.

Dr. Mike Hart: Yeah the WHI study that's the one that most people reference most of the time. It definitely had a lot of different issues. You know I can't get too much into the specifics but I remember when it was presented to me there was definitely a lot of discrepancies in that particular study. I think that's really unfortunate because that's where we get most of our information from now. That's the one people refer to the most.

Robb Wolf: Right, absolutely. So Doc, you know, with this hypothetical perimenopausal or maybe menopausal female, are you actually – is there then kind of an attempt to reestablish a normal hormonal cycle through the month or is it a somewhat static treatment protocol? Like how does that look?

Dr. Mike Hart: So sorry can you kind of rephrase that question again? I'm a little bit confused.

Robb Wolf: Yeah. So you know how a premenopausal female, you know, they're having a normal --

Dr. Mike Hart: Right.

Robb Wolf: -- cycle with fluctuations in estrogen and progesterone.

Dr. Mike Hart: Yeah, yeah.

Robb Wolf: Are you trying to reemulate that at all with the bioidentical hormones?

Dr. Mike Hart: Yeah. So the hormones that are prescribed to women that are premenopausal and post-menopausal are actually different. So because I still want a premenopausal woman to get her period, then progesterone is only given through ten days throughout the cycle.

Robb Wolf: Uh-hum.

Dr. Mike Hart: Whereas in a post-menopausal woman, we usually give about three weeks straight and then we usually take a break. There's different, there's various different protocols that you'll hear out there. Those are the ones that I use like I saw Dr. Erica Schwartz' talk last weekend in Toronto. She's a big expert in the field. She wrote The Hormone Cure.

Robb Wolf: She's a little bit of a different protocol but you know, that's kind of where we are, these, to stay with this, because there's no set guidelines. Everyone is still kind of bouncing that out. Even with your patients I mean you never get it right the first time. You know because no two people are alike and when you're balancing out hormones it's definitely tricky. You know, I do it two days a week now and I don't even know if I could do it more than that just because it is very, very meticulous work trying to balance hormones.

Dr. Mike Hart: Right, right. So you know, with the – I'm kind of focusing on the female stuff a little bit --

Robb Wolf: Sure. Yeah.

Dr. Mike Hart: --because I had some people very cranky with me in the past females because they were angry at me that I had not spent more time on my podcast talking about female hormones. I replied to them that the main reasons were that I didn't really know that much and that I felt like commenting on something that I didn't know a lot about. That was maybe a bad idea.

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Robb Wolf: So you know, they have somebody that spends a fair amount of time on that, I actually want to talk a little bit. How many of these women do you see that also require some testosterone therapy in the mix with that?

Dr. Mike Hart: You know, I'm just going to bring that up and you know, I put I would say just as many women or close to it on testosterone than I do estrogen and progesterone. Because a lot of women are really deficient in testosterone and without testosterone, you basically have no sex drive. It goes a little bit beyond that too. There's a little bit of wellbeing in there, you know, decreased muscle strength. So all that goes into play. Obviously it's going

to increase your bone marrow density as well. So you know, I've had women that I've actually just placed on testosterone and that's completely changed their lives. So it's very, very important and I've written blogs about this before as well. You know you should always get your total testosterone and your free testosterone checked. That's because testosterone unfortunately binds to something called sex hormone binding globulin, about 60% of it. It's very tightly bound to that molecule. And then about 38% of this bound to albumin. I say it's a little bit less tightly bound to that and only about 2% is free.

Now just to go in depth just a little bit more too you will hear people say bio available testosterone.

Robb Wolf: Uh-hum.

Dr. Mike Hart: That's a combination of free testosterone and albumin. Now testosterone is still less tightly bound to albumin than sex hormone, binding globulin hormone but it's still bound to it so I generally use the total testosterone and the free testosterone as my guides.

Robb Wolf: Got you. Got you. Doc, --

Dr. Mike Hart: Yeah.

Robb Wolf: -you know, whether I know that high sex hormone binding globulin can be a problem for a lot of folks. What are some nutritional and lifestyle things that folks can do to modify that? Like interesting a really low carb diet actually tends to elevate sex hormone binding globulin. So you know, we may be trying to deal with some under the hood issues like metabolic derangement. People go real low carb but then we -you know, we might have some revamp with that or maybe disagree with that. Like what are your thoughts on that?

Dr. Mike Hart: So that one's a little bit tricky. There are some things though that you can take to get it up. There's a nutrient called crisin that you have to take—I'm not sure if I'm pronouncing it right to be honest.

Robb Wolf: Uh-hum.

Dr. Mike Hart: They have to take with them piperine extract. That's been shown to help. There's another one called nettle root extract that will help as well and saw palmetto has been shown to help as well. So there's a few different kind of roads that you can take that will definitely help with that.

Robb Wolf: Got you.

Dr. Mike Hart: And then but you still have to look at sort of the big picture and I can kind of give you like a scenario or what you know, the average male that comes in what their blood work is and what to kind of look for if you want me to go into that.

Robb Wolf: That would be great. Yeah I'm sure folks would love to hear that.

Dr. Mike Hart: Yes. So I think probably one of the more common ones I get is when people are just absolutely low in everything. So low in soy. When I say everything, I mean low in testosterone, low in estrogen and low in free testosterone. So those are the kind of the three blood tests for men that really determine how I treat. I usually do sex hormone binding globulin as well and DHT but I can get – I'll get into that in just a sec.

So when someone is low in total free testosterone and estrogen that means a low in everything. So some people will respond to DHEA with that but that's actually illegal in Canada. I know you guys can get over the counter there.

Robb Wolf: Right.

Dr. Mike Hart: But then you actually have the building block so that's actually produced all these hormones because you're low in absolutely everything. Right? This tends to happen in older men because testosterone unfortunately declines with age. Now oftentimes I'll be honest you know, the DHEA is not enough and sometimes you can get a little bit of an increase but in order to get those symptoms really treated, you need to go for the real thing. You need to get testosterone. So that's kind of scenario number 1 we'll call it.

Number 2, you'll have someone that will have high testosterone. It can be both high and the free, but then they're also getting or sorry, low free testosterone, high total testosterone and then they'll have high estrogen. So what's happening then is that even though they have elevated high testosterone it's not getting converted into free testosterone. It's actually getting converted into estrogen. So at that point like we just talked about earlier, you know, weight loss for sure got to be your first line treatment for that. So if you can get the weight down, then hopefully you can balance that out. Then you can also use a variety of those supplements that I just mentioned again.

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Because it just works out that a lot of the supplements like the chrysin and the piperine that are used for decreasing your sex binding globulin hormone are also used to actually decrease aromatase as well. So that will help increase your free testosterone. Now if all that doesn't work, I do have something called Arimidex. That is an aromatase inhibitor. Just give a very low dose like just half a tab like 0.5 mg twice a week.

I maybe just got a couple of guys on it that have had problems with it but that's kind of the one that I have to go to sometimes and the estrogen is just you know, completely out of control. Then the last scenario that has high testosterone, but he's –sorry yeah, high total testosterone but he's got low free testosterone and say a normal estrogen or a low estrogen. So this we know is generally due to a high sex hormone binding globulin. So what's happening is all that testosterone again it's not getting converted to free testosterone but it's binding into the sex hormone binding globulin. That's when you go back to what we just said again about how to decrease your sex hormone binding globulin. So those are kind of the big three scenarios I guess that I would see on a day-to-day basis when men come in.

Robb Wolf: Very cool. Now you know, with the Arimidex, the literature that I've read on that like it seems like you're even going a bit lower than some of the kind of conservative like Wiley protocol type things, where they've used cycling either injectable or transdermal testosterone and stuff like that. Are you just really nervous about really squelching the estrogen profile in those folks or like what's the thinking with that?

Dr. Mike Hart: No, that's actually a really good question Robb and I probably should have mentioned this when I mentioned everything else. There's just so much to hormones. It's hard to kind of spit out everything in one answer. But estrogen balance in men is really, really important. There was – so it can't be too high and it can't be too low. There's actually a study done in they divided the patients up into quartet. So the men that had the highest estrogen actually had about 133% increased rate of mortality and then the men with the lowest estrogen in the lowest quartet had about a 317% increased rate of mortality.

Robb Wolf: Wow.

Dr. Mike Hart: So in that middle balance. You know, --

Robb Wolf: Which is a U curve like we see these all over the place, yeah.

Dr. Mike Hart: Yeah. You know, what I was taught with the life extension people is that 20% to 30% pgs/ml is about the optimal range. So that's the range that I try to keep my patients in. So yeah it's a really good question, you don't want it too high, you don't want it too low.

Robb Wolf: Because I think that the –you know, maybe some thinking would be stamp out estrogen like it was a forest fire and men but clearly that's not a good thing to do.

Dr. Mike Hart: No, no. You definitely don't want to decrease it completely because estrogen does have protective benefits, particularly cardiovascular. So you don't want to block it out completely.

Robb Wolf: Got you. Got you. Very cool. So you know, when – so it sounds like maybe a chunk of your week or your month is devoted to kind of the bioidentical hormone practice. What about the intravenous nutrients? Like what part of your practice does that encompass and who are the folks that are you know, needing that?

Dr. Mike Hart: So that's something I actually just got into. You know, I met with some people in Toronto. I think they want to remain nameless at the moment but – and then I brought to London now. So the people that come in, most of the people that come in are athletes. They're looking just for an extra edge. I'm actually writing a blog on this topic right now. But most people are coming in just for performance enhancement. You know, you do have every Saturday or so you'll get someone that wants to come in just because they've had a few too many drinks. Obviously you know, a big bag of saline....

Robb Wolf: Meyer's cocktail right, right.

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Dr. Mike Hart: That's going to be the ultimate kind of hangover cure. But you know, part of the reason I got into is definitely for the sport enhancement and that performance effect but something I'm also interested in is using it for medicinal treatments. I did a post actually a couple of days ago how IV vitamin C can be used to help treat cancer patients. You know, you'll hear people say that oh that's quackery and different things like that but there's –you know, if you do a PubMed search on it, you know, I'm not saying you're going to get all positive results but I think you get some – you have some pretty good studies there that are showing that there's really good evidence for it. You know, unfortunately cancer is something that we definitely struggle with in the medical community. You know, we're not able to cure a lot of cancers right so and the treatments for it

as terrible. You know, surgery and chemo or you can die. You know, it's basically there's some other medications but we really don't have great medications for it. So I think that we should really need to open up our doors and maybe look at and reevaluate whether vitamin C can play a role in this. Because it seems from some of the evidence that I'm seeing online that it can.

Then I'd like to integrate within that you know, some of the stuff that I do on medicinal marijuana as well. There's 42 I think published scientific studies now that have said that you know, it can help with cancer. Then you know I will incorporate a little bit of western-ish medicine I guess you could call it. There's something called Low Dose Naltrexone.

Robb Wolf: Uh-hum. Uh-hum.

Dr. Mike Hart: And that seems to have some pretty good evidence as well so you know, I'd like to kind of attack cancer I guess from a few different angles. You know, I'm sure you've heard of alpha lipoic acid before.

Robb Wolf: Right.

Dr. Mike Hart: That's been shown to be pretty promising molecule as well. So you know, I'd really like to try to set up something where someone could get an IV vitamin C, some IV alpha lipoic acid and you mix in maybe some cannabis oil, some low dose naltrexone. You know who knows what can happen right? So that's kind of what the main reason why I got into the vitamin drip.

Robb Wolf: Very cool. You know, people usually think about vitamin C as an antioxidant but I think we're becoming more aware and more savvy of the fact that things that we usually call antioxidants can be anti or pro oxidant. One of the interesting things it's necessary for apoptosis to occur and to actually kill cancer cells is a prooxidative state to some degree. I think that that's a little bit of what's going on with the potential, the high dose vitamin C. Then it's interesting with the low dose naltrexone it stimulates opioid activity which has this really, really interesting effect on the immune system. Funny enough it's the same kind of pathway that suddenly as it produces vitamin D modifies the same opiate kind of pathways.

We just had some great papers that came out looking at the kind of anticancer effects of producing vitamin D from sunlight and that it actually has to do with this both free radical cascades that are kind of hormetic stressor but then also the modulation of the immune response.

So you know, there's a lot of really good mechanism in there like for me looking back at this stuff, when antibiotics came online when you look at a little bit of medical history, it really transformed. Western medicine was incredibly powerful but then we decided that everything needed to be treated with almost like an antibiotic kind of thing. We need to kill this thing instead of trying to figure out some ways to make the body work the way that it typically works.

Like we clear cancer cells all the time it's just occasionally you know, it doesn't work properly so maybe there are some ways to make the body do more what it typically does.

Dr. Mike Hart: Yeah and just to touch on to the vitamin C and giving it IV, you know, I should mention a lot of people say well why can't you take it orally. That's always a first question everyone asks me when I tell them about vitamin drips. So the answer to that is there is a study done and if anyone kind of wants some of these studies maybe Robb and I can arrange it somehow and we can get it to you.

Robb Wolf: Sure.

Dr. Mike Hart: But if there was a study done and people take in vitamin C and they're taking 18 grams of it a day orally and they achieved about 220 micromoles a liter. When they did it IV, they were achieving like 14,000 micromoles a liter.

Robb Wolf: And without inducing diarrhea because of the oral dose.

Dr. Mike Hart: Right, right.

Robb Wolf: Right.

Dr. Mike Hart: So you know, it's substantially more, right? So that's kind of the reason why giving it orally and giving it IV are two completely different things because you're going to reach levels that are like 63 times higher right? So it's – they're not the same at all and that's the reason why you know, if you are hung over or if you're sick in the hospital, you know they don't give you water orally right? That's not how they rely on actually providing you with hydration. They're relying on IV.

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So we know that you know, when we're putting vitamins and different nutrients in IV, the absorption is going to be 100%. So I just want to get that out there because I know that there's a lot of skeptics and rightfully

so. I was a skeptic about everything myself but there are a lot of skeptics about IV vitamins.

Robb Wolf: Right. Right. Doc, what are some other things that are interesting on that nutritional therapy side?

Dr. Mike Hart: Okay. Sure. So I'll just start off and tell you a little about what IV vitamins are and how they got introduced. So there's a guy John, John Myers, Dr. John Myers, Baltimore I believe is where is from and he had something called the Myers cocktail, which is B vitamins, vitamin C, magnesium. So a bunch of different nutrients. Calcium was in there as well. He had some success with treating patients with a variety of different conditions. It could have been fatigue, depression, asthma, some cardiovascular disorders as well and had some success with it.

Now with IV vitamin drip, you know, this isn't the '70s anymore when he was kind of prominent. So we have a lot of different nutrients that we can offer. We offer all the branched chain amino acids, ATP, alpha lipoic acid, glutathione. We have glutamine. There's a lot of different nutrients that we can offer so that's kind of the difference between the Myers cocktail and what we can offer now. That's kind of why I'm so excited because if you could treat some of those conditions with success back then now that we have more nutrients and better medicine if I combine it with something else then hopefully I can create something that's even more efficacious for my patients.

Robb Wolf: Right. Doc, what are you doing on a diagnostic side of this? Like what type of lab work are you running pre and post? Are you doing any type of like hair mineral analysis or what's typically the diagnostic workup that you do on folks?

Dr. Mike Hart: So right now we actually just have them fill out something online on vitamin drip and then from there we can kind of get a sense of what they're looking for and then we can tailor the vitamin drip to them. So there's some patients that actually they don't even – they're not going to get like a toxic dose of anything so they won't even do any blood work before and after. It's just not required. Now there's other people that want to know everything exactly so we're mostly just doing whatever is available upon request or whatever the patient wants. You know, most of the time people are not that concerned. The ones that are probably people are concerned about the most would be magnesium I would say. We always do magnesium RBC because that's the one that seems the most effective. Zinc is another one for sure that the people ask about. Those are probably the bigger ones.

People ask about vitamin B12 a lot as well so we'll just kind of test nutrients of vitamins and nutrients of various different levels available upon request. But we never give someone a cocktail that could potentially injure them.

Robb Wolf: Got you.

Dr. Mike Hart: Yeah.

Robb Wolf: So you have a pretty nice therapeutic window on that without much potential for toxicity on that, that's cool.

Dr. Mike Hart: Yeah.

Robb Wolf: That's cool. So Doc, what else do you have cooking here? Now you've got a great blog. We share a lot of the same stuff on our Twitter feed and I ended up reposting a lot of the stuff that you're doing but what else do you have cooking and where can folks track you down?

Dr. Mike Hart: Okay. So I'm located in London, Ontario. That's just next to – about two hours from Toronto. If you want to track me down, you can definitely contact me on my website. It's DrMikeHart.com. I have a little ask Mike tab there. I've been a little bit busy recently but I am working on responding to some of those questions. You know, I kind of won't plug myself for London but that's kind of where you can follow me on the next or right from the Huffington Post in paleo physicians and primal docs as well. So --

Robb Wolf: Sure. Very cool.

Dr. Mike Hart: Yeah.

Robb Wolf: Very cool. So do you have a book or anything like that in the pipeline or what else can folks expect coming out from you say in the next six months or a year? So are you just really hammering down on the clinical practice?

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Dr. Mike Hart: I'd say I'm trying to you know, as Georges St-Pierre says "keep the main thing the main thing".

Robb Wolf: Right.

Dr. Mike Hart: So I'm trying to hone down on that. But my other interest that I have in now and it still has to do with medicine but I guess it's kind of outside of optimal physical performance anyway is kind of just like upgrading your brain. I've gotten into some of the Dave Asprey stuff. I actually am going to Victoria on this Saturday and I'm going to the Biocybernaut Institute to do the neural feedback so.

Robb Wolf: Nice.

Dr. Mike Hart: Really pumped about that. I've heard a lot of good things about it. So I'm getting more into that. I would say I've also been in contact with someone who can put me in contact with someone in a psychiatrist in BC who's actually giving patients iowaska.

Robb Wolf: Huh?

Dr. Mike Hart: Yeah. So you know, I am a medicinal marijuana advocate as we've already discussed but I'm kind of a psychedelic advocate in general. I think that these medicines need to be studied a lot more. I think that they're underutilized in the medical community so I mean you really need to reevaluate that. So that's something that I'm kind of really getting into is you know, I still go to the gym every day. I was already there today. You know, I still do my kickboxing. I still follow a pretty hardcore paleo diet but I'm definitely kind of leading into a little bit of more of a spiritual kind of part of my life right now for sure and doing a lot more meditating, heart rate variability training. So that's kind of I guess what you could expect in the next few months. But of course --

Robb Wolf: Right. Creating that piece. You know, Chris Kresser and I just did a talk in Boulder, Colorado and Chris actually led everybody through a couple of different guided meditations. I don't know if folks know but Chris has actually a pretty remarkable background on like different meditative practices and this was for a crossfit gym. It was stunning the effects that this had on people because the --you know, we generally -- we just have kind of a type A society. We have a lot of up, we have a lot of like sympathetic nervous system stimulus but we don't have that down and that like really practiced down time. Just a little bit of meditation tinkering that folks did you know, as part of this seminar was really powerful for them. Interestingly, it probably generated more questions and more interest and more follow-up kind of inquiries than the whole rest of the seminar combined. I mean we talked about sleep and food and exercise and you know, antioxidants and autoimmune protocols and all this stuff.

The mediation was actually incredibly intriguing to folks. I think part of it was that people really got a dose of like wow that was a powerful experience and it's something that they have none of in their current practice. Just none of it at all.

Dr. Mike Hart: I just can't believe how much formal education I received and no one ever told me anything about breathing.

Robb Wolf: Uh-hum.

Dr. Mike Hart: No one ever taught me how to breathe properly and it's a very, very difficult skill. You know, I'm still working on it now. I say I really got into it in about October of last year so that's not been long, about four or five months. You know, I've gotten a little bit better but I still have a long way to go and I'm doing about 20 minutes a day now. Of course you know, other things kind of run through my mind when doing it. I was just kind of saying to myself, you know, it's only ten minutes. You owe it to yourself to breathe deeply and not think about anything for these ten minutes.

When I do that, usually I can get into a pretty good zone and just what we touched on earlier with regards to neural plasticity, you know, being I guess happy and meditating is a habit. In order to make that habit, you have to break old connections in your brain and form new connections in your brain. The only way that you can actually do that is when you get into that zone. What I mean getting to that zone? I mean that your body shouldn't be in the way and your environment shouldn't be in the way. So the only thing that you have focused on is whatever isn't funny whether it's breathing or whatever you're doing so you have nothing else in your mind. That's the only way that you can actually create new connections in your brain.

I actually just learned that from a guy Dr. Joe Disenza I think is his name. I might have messed that up but yeah I thought that was a pretty interesting thing for sure.

Robb Wolf: There's a guy that I follow in the kind of financial scene named Chris Martinson and he has a great podcast called Prosperity Podcast. He was – they talk about a variety of topics but one day they were talking about behavioral change and it would be interesting, I'm going to actually going to ping Chris and see if it might be this Joe Disenza guy but he was mentioning like a neurocognitive, neuro phys guy who was talking about PET scans and looking at the way that people's brains worked under different circumstances. I have no idea how they figured this stuff out. I haven't read any papers on it. This is you know, a podcast and in a couple

of weeks removed and Chris was just talking about this kind of on the side. But he mentioned some quote here and people will crucify me if I get the numbers wrong but something to the effect that it you know, if you've got some sort of habit which this habit tends to be kind of ingrained pathway of neural circuitry that it takes like 20 watts of energy to redo that.

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Like you said there needs to be a real concerted effort to overlay that new kind of pathway. It's interesting that people don't maybe appreciate this but the ability to learn to relax and to turn on that kind of restorative parasympathetic nervous system kind of response, that requires effort. You know, which is kind of paradoxical and but the effort isn't like gutting out another set of back squats or something like that. Like it's actually just kind of letting go and it can be a very upsetting experience for people that I've seen who are very type A, very much like you know, a little bit on the control freak side. It can be a very uncomfortable experience for them.

Dr. Mike Hart:

I think it's probably the hardest thing that you can learn how to do is actually how to turn off your nervous system. The reason is because it's a protective mechanism. You know, it's not – it has been very long that we've been able to walk outside and not have to worry about getting eaten by something or you know, going through some crazy winter drought where we don't have any heat and we die. So our bodies are kind of you know, destined I guess you could say to really turn on and fire up and fire up that sympathetic nervous system. Our bodies cannot tell the difference between whether a tiger is chasing after us or whether we need to give a presentation in front of some coworkers. You get the exact same physiological reaction. You got this inappropriate fight or flight response and well obviously it wouldn't be appropriate if a lion was --

Robb Wolf:

Right.

Dr. Mike Hart:

But you don't want your heart rate to go up and you start breathing heavy and start sweating and stuff like that if you're giving a presentation somewhere. The only way to turn that off like you said is to train. You got to train your mind and your nervous system just like you train your body. You know, that's why I do the heart variability training all the time. That's why I'm going to this Biocybernaut institute because I realize that I need to put some effort into that part of my life as well.

Robb Wolf:

Very cool. That's super cool and you know, I say that at some point we put together a psychedelics podcast and we make it like a dollar per download and not a free one and then people have to buy that one and

we'll split the money on it. Because it's – you know, you don't do an organic chemistry degree at Chico state without some interest in that stuff because it doesn't get the chicks or make the money but it's funny, all of my professors had some very stated interests in those types of things. I agree with you that there is some really, really interesting potentiality for healing and human kind of optimizing the human experience doing some investigation with that stuff.

Dr. Mike Hart: Absolutely. I can't wait until more research on the iowaska comes out. I know that they're doing some more studies now in Canada. They just had one last year and it was really successful about treating some aboriginals that had a lot of substance abuse problems. So you know, I think you're going to see more and more of that stuff come out and you know the only way that we can really get those studies is to have podcasts like this and to talk about it and to demand for it. So you know, I hope that we can both be a part of that for sure.

Robb Wolf: That's pretty exciting. That's very cool. I didn't know that you had that background with you so that's very cool.

Dr. Mike Hart: Yeah. Well I mean I guess you know, I try to keep my Twitter feed or whatever to mostly nutrition and things but I definitely like to throw out some personal interest I have there as well. I mean it really goes along with nutrition and fitness. You know, we've kind of upgraded or whatever for lack of a better word our bodies and now we kind of want to upgrade our mind. Right? So it only comes natural.

Robb Wolf: Absolutely. It's – yeah not to beat it too much into the ground but within this crossfit kind of high performer scene, which you know, seems to be a lot of folks that hit my blog list in the podcast folks, just don't place enough importance on that down time and on that restorative part of the story. The harder that upstroke is, the harder that training session or the goal oriented side of things that you're doing you've got to have that kind of down side. I guess the only analogy that really makes sense to me is the always being an only one part just that sympathetic nervous system, it's like going to an ATM and just doing withdrawals. All that you're doing is taking out. You're really not putting back in. Clearly sleep puts back in, good nutrition puts back in but there are some other pieces to it which involve actually what I think some Zen practitioners have called kind of wu way. It's active inactivity.

It's you know, and the neuro phys side of that seems to be that we're really entraining ourselves to be able to access that parasympathetic

restorative side of the equation and bring some balance to a pretty harried lifestyle.

Dr. Mike Hart: Yeah. I think you said it best again when you said training because that's exactly what we do have to do. People are training their legs, training their bodies but they're not actually training their mind. Like who do you know can say I'm training my mind right now to turn off an inappropriate sympathetic response because I know I'm always in sympathetic mode? That's something that you have to actually train. You know, I don't know too too much about it but I guess something that you could consider to be after training would be something like meditation or heart rate variability training. But you should also just have some relaxed Zen time. What I mean by that is when I – a couple of hours before I go to bed, my phone goes on airplane mode so no one can call me there. I don't want to have to think about emails or anything else at that point. Then I do the same thing when I wake up. So there's a window of the day where I'm super busy and I try to get everything done and that actually adds structure to my day because I know that I can't get certain things done in certain periods because that's kind of my time for myself. That's allowed me to – you know, a lot of people are surprised when I say that because I do have a lot of different things that I'm doing right now. But part of the reason that I'm able to do those things is because I do take care of my mind.

Then when I take care of my mind at night and in the morning, then it kind of takes care of me during the day and allows me to be productive.

Robb Wolf: It's a little Tim Ferris ask compartmentalizing your life and not letting things bleed over. You know, there's an infinite amount of work to do particularly when you start getting some sort of an online presence put together. You can always fiddle with your blog, fiddle on Facebook and check out Twitter feeds and stuff like that. But it's a pretty good act of will to turn that stuff off and have some down time. So that's fantastic, super cool.

Dr. Mike Hart: Well I think it's something that it might require a little bit of discipline when you initiate it but I think you get a lot of benefits from it and I think it would be easier for those who are listening that might be considered doing this. It really will help you. I really encourage everyone to try at least for a week and can see what happens.

Robb Wolf: Very cool. Well Doc, it was great having you on and I'm serious about doing the follow-up podcast. Let's put our head together and think about doing that sometime. We'll actually structure some curriculum and cover

some material on that and maybe look at some of the legit research on psychedelics and human experience. I think that would be a ton of fun.

Dr. Mike Hart: Yeah that would be fantastic. You know, what would be ideal if I could get some of that training from that psychiatrist before I came on so I had I guess some real world experience. But I'll definitely be talking to you about that and I'm going to be doing a lot more research on it. So I'll keep you up to date on that for sure.

Robb Wolf: Awesome. Well Doc, it was awesome having you on the show and I apologize that it took so long but it was worth the wait. This is fantastic.

Dr. Mike Hart: Awesome. Well thanks so much for having me on. I really enjoyed it and I look forward to being back on and talking to you about psychedelics at some point.

Robb Wolf: Great. That's going to be a blast. Will talk to you soon.

Dr. Mike Hart: Okay. Sounds great.

Robb Wolf: Bye Doc.

Dr. Mike Hart: Bye.

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