Academy of PHYSICAL MEDICINE

Transcript

The Effect of Physiological Load With Matt Wallden

Cast List

Steven Bruce	SB
Matt Wallden	MW

SB: We're going to talk about physiological load this morning, aren't we Matt?

MW: Yes. We are. We are, yes.

SB: What did you say it was called? Allostatic load?

MW: Well yes. Physiological load is a term that Paul Chek devised, and with good rationale obviously.

SB: There may be people watching who weren't watching last night, so Paul Check is?

MW: Paul is someone who I've trained with and worked for since ... Trained with between 2001 and 2005, and then worked on the CHEK faculty from 2005 through to present day. What I found when I was doing a lot of CPD after first graduating was that ... I saw Paul speak and he was probably the most holistic and I would say congruent exercise rehabilitation person that I found with osteopathic philosophy and arthropathic philosophy. He was really talking a lot about nutrition and emotions, and the importance of the viscera in exercise and muscle function and so on. And referencing a lot of osteopathic texts

and people like Frank Willard and Irvin Korr, those kinds of guys that they're names that are familiar to us in the manual therapies.

MW: But, when I was doing courses that were perhaps a bit more physio oriented, or from more of a personal training or strength conditioning perspective, it was very mechanical. It was like, "This is the transverse abdominis, and this is how it contracts," and it was all about the muscle, and there was nothing about how the organs may affect the muscle, or how breathing patterns may affect the muscle, and so on and so forth.

MW: When I saw Paul speaking it really just fitted with my whole understanding from my osteopathic and arthropathic backgrounds. And so, I was drawn to do that training, and one of the key concepts was physiological loads. Essentially if you look up physiological load on MEDLINE or on Google you won't really find much, but if you look up allostatic loads, that's essentially what Paul has been talking about all this time. Of course, allostasis is where you've moved out of homeostasis, so essentially you're under stress and your body is attempting to find a new or another allostasis, another set point if you like.

MW: How Paul developed that was, he was working with a lot of elite athletes, and what he found was that of course, many of these athletes were getting injured which was why they were coming to see him. They could be over training in many instances, they could be eating poor nutrition, which is very common in high performance sports because a lot of the literature and certainly the marketing has been around an energy, an energy based drinks, energy based bars and this kind of thing, and not necessarily the nutrition to repair and replace damaged tissues.

SB: Is that still the case, do you think? You get the impression that at elite level, at Olympic level, national level, diets are so tightly controlled, not least because of the drugs testing regime, that they put a lot of effort into getting the right ... So are we talking at that level, or are we talking just a bit lower than that where people don't have the support that the Olympic team might have?

MW: Sure. I think we're talking ... Well, if we go back 15 years, we're talking at all levels, for sure. One of the guys that I actually met through the CHEK training who's also an osteopath, he was ... let me think, I think he was seven times world champion in his kayak event, he'd been to three Olympics. He did a presentation to the CHEK group, and he put this diet diary up on the screen, and he said, "Here's the recommended diet for this guy who's an Olympian." He's listed for breakfast it was white bread, or white toast, it was ... I think he had

something like six satsumas and that was the only thing on the entire list that wasn't white. So then, it's pasta for lunch, it's rice, it's pastries, Jaffa Cakes were something that they were allowed.

MW: Basically, all very high carb food, all very grained based, bar maybe a few potatoes, not a lot of meat, and lots of sugar, no greens. He said, "Who's diet diary do you think this is?" Well, you know, weren't sure, and he said, "This is Steve Redgrave." Steve Redgrave now has type 2 diabetes, and he's got inflammatory bowel disease. Not to say that those things definitely drove those situations for him, but you look at the diet, and from a standard nutritional approach it was a terrible diet. But obviously, it was providing the calories that he needed. I think that was the thing back then was there was an over focus on the notion that food is an energy source, much like petrol that goes into a car, and there wasn't enough of a focus on repair and on health.

SB: You were saying last night actually, weren't you, it wasn't about diet, but it was about other issues, we're talking about the TMJ and so on?

MW: Yes. Yeah.

SB: But you were saying that there are some really elite athletes who have these strange patterns of behavior, whether it's TMJ, whether it's their gait style, in Steve Redgrave's case, his nutrition. But, you just wonder how good they would have been if they'd got it all right, if they got all the ducks in a row.

MW: Yeah. That's it, that's it, yeah. You don't know. But, that's an example of where the diet itself, combined with the training, creates a huge amount of physiological stress on the individual. And so then, the net result of that probably in that case, but also in many other cases, especially endurance athletes that create such significant stress to their hormonal system, but also to their digestive system because they're training so hard many hours a day. It's taking them into this fight flight state which means they're not in a rest and digest state. So food that they do eat tends to putrefy or to ferment in the gut, and then this causes increased likelihood of overgrowth of yeasts or parasites. Because of course we have yeasts and parasites in us anyway, you can't get rid of them, they're there, but they should be maintained at a low level of the total gut percentage.

SB: When you say that it puts them under stress, are we talking about stress about as many people would understand it, hypothalamus, pituitary, adrenal feedback, as it were?

MW: Yeah, we are. Yeah, yeah. Of course there's many ramifications of that. One of the ramifications, as I was just alluding to is digestion is

impacted. And if digestion is impacted then of course you ability to get nutrition on board is compromised. But also, a lot of the immune system lines the gut. There's various figures, but the figure I hear quoted most often is that 80% of your immune system lines the digestive tracks. Which if you think about it from a logical perspective makes a lot of sense because that's where you're actually trying to absorb something that is non-self into your system. The rest of your system you're trying to block things from entering, apart from the lungs, but there of course it's primarily gasses, it's not other organisms that you're taking in.

MW: But, in the gut, you're trying to take in other organisms and turn them into part of yourself, so you need a very strong immune presence. When you're eating something like a very high grain diet, for example, then the immune system will get sensitized to something that you're eating repetitively, typically. So when people take allergy tests or immune sensitivity tests, they're most commonly intolerant to things that they eat the most of. The analogy that's used there is it's a little bit like if you're to invade across the border of a country, so we're using the analogy of the gut border as the border. If you were to keep invading at the same point, well then the other country will put up reinforcements, which is the immune system.

MW: So if you keep putting the same food into the gut, it's like that same scenario, and your body starts to say, "Okay. We need to create a resistance to this."

SB: Why do you think it is? I've heard it put forward on a number of occasions before that people are often intolerant of something that they eat a lot of. Why do you think they would continue to do that?

MW: Well, I think it's just the way the immune system's set up, and that in nature that would never happen because you'd have seasons, and you'd have migration of the individual. Obviously, our ancestors were migratory in nature and hunter gatherers in general, follow the herds. They also looked for food resources. Interesting enough in our current day materialist, scientific materialism culture, which is the way our society tends to predominantly operate, it's seen as a good thing to have material goods, material wealth. But, as a hunter gatherer it was a bad thing because you'd have to carry it with you. So the less you had the better, as a hunter gatherer.

MW: It's very interesting to see how our whole psychology has changed as a result of the way we live today. But, the point being that they would have had to have moved, and so they would have been eating different meats, different fish, different bird, different plants,

different fruits. And so, the immune system was never over burdened with any one food stuff.

SB: Do you do a lot of nutritional advice with your patients?

MW: Yes. I give quite a lot of nutritional advice for most patients because generally speaking most of my patients will have some degree of physiological load, and one of the key ways to decrease this physiological load, or allostatic load is to work with nutrition. Some people have great nutrition already, but it's the exception rather than the rule, especially with people that are in pain.

SB: It's all very well saying they've got physiological load, but how do you measure it?

MW: This is the challenge. There's many ways to do this. One of the ways that tells you to some degree is things like heart rate variability, which is quite popular among athletes these days. But clinically, what I've found really useful is a tool that I was given on the CHEK training, which is called a health appraisal questionnaire. This health appraisal questionnaire screens 28 different organ and glandular systems. And so, what that allows you to do is it allows you to see what their overall physiological load is, because essential it's on a traffic light system. If they're all in the green, low physiological load, if they're somewhat into the orange, moderate physiological loads, and then when they're hitting the red a lot then they have high physiological-

SB: Is this applicable only to athletes then, or-

MW: No. This is for anyone. In fact, I use it with all my patients. It's a pre-requisite for them before they come to see me so I have an understanding for where they're at before they come in. And also, it allows me then to tailor my advice to them before they come in. I tend to send this out as a questionnaire normally with one or two others, get the information in, and then I say, "Based on what I can see of your physiological load," let's say a lot of patients of course are quite high with physiological load, and that's why they're coming to see me, because they feel terrible, they've got persistent pain, whatever it might be.

MW: You see this physiological load quite high, and then you know you've got certain things that you can help them with. It might be, for example, that their digestive system, as we were just saying, is scoring really high. There's four categories of digestive health on this questionnaire. Straight away you know I could potentially help them here with nutrition, or lifestyle advice that will facilitate digestive health. Then it assesses the adrenal glands, and so if the adrenal is

scoring high, you know they've been under stress recently. Then it assesses the thyroid, and if the thyroid's high then it's quite likely that they've been under stress for a persistent period.

SB: How is it assessing adrenals and thyroid?

MW: Now, it's questionnaire based, but it is a medically derived questionnaire. It was Jeffrey Bland's group, Jeffrey Bland is the, well, a lot of people call him the forefather of functional medicine. He's one of the original thinkers. His whole thing was medicine, so as a medical doctor he was saying, "What I see in medicine is that medicine is excellent at dealing with horizontal disease, but it's terrible at dealing with vertical disease." What he means of course, is that when people are flat out, they've been knocked down by a car, they've got something serious going on, a heart attack, medicine is brilliant at dealing with that. But, when it comes to vertical disease, people walking around with ... heading towards cancer, heading towards heart disease, with type 2 diabetes, these kinds of things it's really not very good at that.

SB: When did he come out with these ideas?

MW: This was back in the '80s.

SB: Oh. So it's recent?

MW: Yeah. It's quite recent. Yeah. And then, really developed this questionnaire as a means of filtering clients or patients into various lab tests that they could have. If you're scoring low on your adrenal score then there's no point in doing a 24 hour cortisol rhythm test, which you would do if someone is scoring high on the ... or you could do, let's say, if they're scoring high on the adrenal score. That test is about £100. If the digestive system is scoring high, well you can do a comprehensive digestive stool analysis which parasitology if you want to, if there's indications that there's parasite or fungal overgrowth. But, that's £300. And then, you can do a thyroid test.

MW: So you can see that if you did all the testing for all of those organ and glandular systems, you'd be a few thousand pounds out of pocket. The idea of the questionnaire is that you look at it and you might see that just one of those categories is high, so then you know which lab test to do, if you want to do a lab test. Or, you can just give nutritional, lifestyle advice, and then reassess the score maybe eight weeks, or 12 weeks down the line.

SB: How often do you actually send your own patients, or do you get lab tests for your patients? Is that a common thing?

MW: I would say not super frequently. It's one of those things, it depends a lot on the patient, on their mindset. Some people want to see the science and get a lab report, and they feel much more comfortable with that. For a lot of people it's a financial issue, so you say it's £300 for this test and they suck through their teeth, they say, "Do I really need it?" And I say, "Well, no you don't 100% need it. We can just work using the questionnaire, but it is more subjective or course, because the questionnaire is asking about different symptoms that may relate to-

SB: And how do you get lab tests done yourself? Do you use a private lab, or do you send them to a GP and say this is what they need?

MW: I've found that GPs aren't very receptive, or aren't allowed to be receptive. Actually, their rules are that unless they have ... Their testing has to be done by approved labs. And so for example, if we just take parasites, quite frequently they'll send a sample off for parasitology, and they're only testing for maybe the three or four main parasites that people tend to get when they've been on holiday to Antigua or somewhere. They won't be testing for the hundred other parasites that are perhaps more subclinical and combined can cause a real problem.

MW: You're just literally getting the parasite information, rather than with someone like, I tend to use Genova quite a lot because that's Jeffrey Bland's company. But, there's lots of companies that are very good out there. But, they will not just test for parasites, they'll test for yeasts, they'll test for bacteria, they'll test for protozoa ameba. Then, if you've got any kind of overgrowth or organisms that shouldn't be there, they'll take them, they'll put them in a Petri dish, they'll sample them against garlic, they'll sample them against berberine, they'll sample them against black walnut tincture, and then normally against two or three different antibiotics.

MW: What inevitably you find, is the antibiotics are much more potent at killing these things, but you might find that black walnut tincture is actually very good at killing them as well, but garlic doesn't do much, and various other natural substances aren't so good with it. Then you know if you want to take the natural approach, you need to get some black walnut tincture. It gives you a lot more information than just going to the doctors.

SB: We interviewed a lady called Tracey Witty a few weeks ago about B12 deficiency, and we got into the business of using Medichecks as a remote private lab for testing stuff. It sounds as though Genova, you said, are Jeffrey Bland's company? Might be worth a look.

MW: Yes. Definitely. Yeah, yeah.

SB: You're getting enough information back from them to know how to make sense of what they've found, because I imagine a lot of people are thinking, "Well, it's all very well you telling me they've got these amebae and these parasites, I don't know what that means. What do we do about it?"

MW: Yeah. They do offer advice. They have to be careful about what they offer in terms of advice these days. It was more liberal maybe 10 years ago, but I think with the medical legal side of things tightening up, they can give you some general lifestyle advice, and maybe supplementation advice as well. But yeah, you can go on courses of course, and you can get books on these things, so that's how I've picked it up over the years.

SB: So in the instance that you just cited, you've sent something off to the lab, they've tested it, they've found something which responds only to antibiotics. Will they then send you a report saying, "You've got this stuff, it's not good, you need antibiotics"?

MW: Yeah. This is the challenge, if it's only responsive to antibiotics, which I've actually never seen, generally speaking some of these natural substances are quite effective, like I say they're not as effective as the antibiotics. But, if antibiotics kill things at 100%, a lot of these things are killing them at 60 or 70%, and some down to 30. But ginger, garlic, berberine, there's a name of tea, Pau D-arco. There's various natural substances which you can take, and sometimes to combine them is quite an effective approach.

MW: Certainly, if you do need antibiotics, or you want to take antibiotics, again, you hit a bit of an issue because most doctors will not prescribe them off the back of a lab test that isn't accredited by their own practice, or the General Medical Council maybe. So then a trick there is to get a holistic dentist, like the guy that we were talking about last night who ... because dentists are allowed to prescribe antibiotics, and a lot of them will use these tests as well.

MW: I send my patients, obviously they have to pay for a consultation, and just go in, show them the report, say, "We've done this with Matt. Obviously, I'd like to take this antibiotic." And so then, he'll check through and say, "Okay," yes or no, depending on his own clinical judgment. But that is one way you can get antibiotics prescribed if you feel you need them. But most people are coming to me because they want to avoid antibiotics typically, and they want to got with a more natural approach.

SB: Going back to the questionnaire then, how long does it take to fill in your questionnaire? Not your questionnaire the-

MW: Yeah, yeah. For the health appraisal questionnaire it's generally, depending on the individual, it's going to be between 20 and maybe 30 minutes. It's fairly comprehensive, obviously, screening 28 organ and glandular systems and limbic systems as well. Some people would turn their nose up at that a little bit because it's time, but I was explained that this is saving them on consultation time.

SB: Do you have to do it with the patient, or are they safe to do this by themselves?

MW: Yeah. Absolutely. Absolutely. There's all the descriptions to how to do the questionnaire, how to fill it in, and then they can fill it in in their own time. And then, we get essentially a report back which shows where the high stress is, and what the total stress is. I've actually got an image of it. Shall I show you the image?

SB: Yeah. Please. Bring it up.

MW: See if we can get this up. There we go. This is it, this is it.

SB: Right. Okay.

MW: On the left hand side there, that's the old system as it were, that's where the patient would have to send back the questionnaire to me and I would just put it onto an Excel spreadsheet and color it in. It's quite nice because you get all 28 different organ and glandular systems there. So for this person you can see it's quite a lot of red on the left hand side, and that means that the gastrointestinal system is under stress, and then liver and gallbladder as well.

SB: What have we got? We've got categories above here. We've got gastrointestinal, liver, endocrine, glucose, cardiovascular, mood, musculoskeletal, CNS, and then we've got a big section here for female.

MW: Yes. We do. Yeah. So for this lady, she had estrogen and progesterone decline symptoms, and I can't recall how old she was. But, if that's a lady that's in her 40s or 50s then it's not so much of a concern, it's still something to pay attention to, but it's not so much of a concern. But, if it's a girl in her 20s or 30s then that's not a good sign, and sometimes it's because they're nutritionally deficient, or it can be because there's, again fungus or parasites which are actually absorbing her nutrition for her, and so she is actually nutritionally deficient as a result of gut issues. That could be the situation here.

SB: That's your old system, the Excel spreadsheet?

MW: Yeah. That's the old system. The system that I use now predominantly, assuming people are happy with it, is the system on the right. That's actually just the first page of it. The nice one about this is it actually gives you the overall score at the top. So that one at the top is the overall stress. And so, that person you can see is just in the red for their overall stress, so they have high physiological load. And then, you go through the systems below and see which of the different systems of the body is that coming from. And so, they have gastrointestinal inflammation, they've got their adrenal score is high. And then, we just go down through the checklist.

MW: That's what I've put together as a product on my website so that people can actually access that, for a small fee. But rather than paying my hourly rates they can access that for £8.99 is what I've put it on for. That means that they can download the test, they get the results back, and if they want further advice then they can either take that to their osteopath or their chiropractor or whoever they're working with. It's relatively low hanging fruit for some good information. In the process of compiling videos for each of those sections, so then-

SB: You were saying earlier on you charge for this, but actually you have to charge because it's not your material, is it, it's somebody else's material?

MW: That's it. Yeah. It is. It is, and so to get this through the CHEK training for example you'd have to go on a course which is about a thousand pounds, so it's a bit cheaper than doing that. But because basically Jeffrey Bland developed it, the CHEK Institute got permission to use it in their training, but I don't have that permission personally. Also, it's just an incredibly valuable tool, so I think it's fair to charge for it something, so the patient values it a little bit as well.

SB: Absolutely. Yeah. We've had a number of questions apparently of people asking what's the name of this questionnaire?

MW: Yeah. It's called a health appraisal questionnaire. But, because it's protected it's very difficult to find online, I've Googled it quite a few times to see if it is readily available, and it's certainly not easy to find.

SB: But, it's slightly more complicated than just a questionnaire, isn't it, because presumably when people fill this in ... are they doing it online?

MW: Yes. The new one's they're doing online. Yeah.

SB: So actually that's then feeding into a bit of software which is generating these pretty pictures?

MW: That's it. Yeah.

SB: The only place they're likely to find it is through your website at the moment?

MW: I'd have thought so. There will be other practitioners out there that would have done the courses and would have access to it as well. But yeah, I think that's probably the place they're most likely to find it. With the questionnaire one of the realizations that's come to me recently, back to this original slide, is that it's physiological load that seems to be driving central sensitization and central sensitivity. This is what we talked about a bit yesterday, and in the previous webinar that we did. I don't want to go into detail on that too much, but the process of central sensitization is essentially that something in the system is triggering the nervous system to be sensitized.

MW: Originally the research on this seemed to indicate that it would only be pain, you had to have pain, and that was what would trigger central sensitization. But, what they've found increasingly is that it's not just pain, it's other things like it could be irritable bowl syndrome, for example. Now of course, you can get pain with irritable bowl syndrome, but it doesn't need to be painful. And post traumatic stress disorder, now of course there's emotional pain there, but there's not physical pain. There's multiple different contributing factors or potential factors that can contribute to central sensitivity.

SB: So there's the physiological load in itself could be subclinical ... I can't say asymptomatic because if it's contributing to sensitization then it's technically, I suppose it is symptomatic.

MW: Well, this is the thing, it's flying under the radar a little bit. And so, you can have a lot of stress on the system across multiple systems, but not have any strong symptoms per se. You could have moderate physiological load, let's say nothing's up in the red, but your system doesn't want anything more, any additional load, and it might just take bending to tie your laces you maybe injure a disc or whatever. For that person with the moderate physiological load, they're going to feel the pain of that, and the pain is going to perpetuate longer than someone who's got very low physiological loads.

MW: And also, they're more likely to get injured in the first place, so it's a kind of injury risk aspect to it. And then, there's an injury management or prevention, rehabilitation side. One of the things I

think is quite useful to understand as a model is that the ... Skip to the right slide slight here.

SB: Yeah. We'll have to fix this so it comes up on the right side.

MW: Yeah. Is that physiological load or allostatic loads seems to precede central sensitivity. There's some really interesting research on this, because what we know is that ... I was reading a paper recently on cardiovascular markers, and so this is ... your typical cardiovascular marker is looking at things like cholesterol levels, HTL, LDL, looking at homocysteine levels, et cetera. If you've got cardiovascular markers then you have seven times the risk of getting tennis elbow. And you think, "Okay. That's interesting." Then you've also got five times the risk of getting carpal tunnel syndrome. You've got increased risk, they don't say how many times, of getting rotator cuff injury.

MW: And so, you're reading this and you're thinking, "This is really interesting," because not only is there a link between cardiovascular markers and arm injury, but if you think about the innovation of the heart and the arm and where you tend to get pain if you're having a heart attack, you're getting the referral into the arm. And so, you're thinking, "Well, this could be a form of central sensitization or central sensitivity." That if you've got cardiovascular markers there's stress on the heart. If there's stress on the heart it maybe subclinical at this stage, but you're multiple times more likely to get arm issues.

MW: This could be a central sensitization thing, however we also know that you're also more likely to get Achilles issues if you've got these cardiovascular markers as well. It's not just about central sensitivity, but it seems like it's about physiological load. Because, physiological load essentially in that situation, in that scenario, you've probably got atherosclerosis in the arteries. Why have you got atherosclerosis? Because you've got inflammation. Why have you got inflammation? Probably because you're stressed out, probably because you're eating poorly, probably because you're not sleeping well, probably because you're overexposed to chemicals, et cetera, et cetera.

MW: So what is that? Well, that's what we're measuring with physiological load. Physiological load is what drives atherosclerotic processes, and inflammation, and so on. When you look at it in terms of a sequence, physiological load seems to be what precedes central sensitivity, and central sensitivity is what seems to precede pain, but in particular persistent pain, and this essentially horizontal disease.

SB: Getting to practicalities about this. If you were one of the osteopaths or chiropractors watching this today, and you've seen this

questionnaire, the health appraisal questionnaire for the first time, how would you advise them to go about using it?

MW: Sure. The way I've set it up is that essentially the patient should be able to access the questionnaire online, so they can access that on my site just by going to the site and searching physiological load.

SB: Your site is called?

MW: My site is mattwallden.com.

SB: Mattwallden.com. And then, of course, we'll post the links.

MW: Great. Thank you. Yeah, it's Matt with two Ts, and Wallden with two Ls. But anyway, that's-

SB: Did we get it wrong in the thing earlier on?

MW: No. I think you're good, it's just most people tend to get something wrong somewhere. But anyway. You can go to the site, then you can find the product, you can access the product, you get sent a questionnaire, once you've filled in the questionnaire you automatically get sent the report. Of course, there's GDPR concerns here, and the way the GDPR is worked here is that, of course, it's the patient doing this, it's not the practitioner.

SB: Yeah. So there's no concern.

MW: There's no concern because the information gets sent back to the patient. And then, should the patient want to share it with their practitioner, which presumably they do, then they can forward it as a PDF to their practitioner, they can print it off. And then, the practitioner can say, "Okay. We can see you're scoring high on the immune function, or you're high on the musculoskeletal system, so that means we want to address it with some manual treatment, with some exercise. But the immune system is scoring high, well, we need to look at foods that may be irritating you and making you more sensitized."

SB: Remind me, did you say you get all your patients to fill this questionnaire in?

MW: Yes. Yeah. It's really a qualifier for them to come to see me. Because sometimes, people don't really need to see me, they're actually better to see someone who practices more conventionally than I do, and perhaps charges a little less. I don't want to waste their money, as it were, by going into the more in depth assessments that I do. But, for

other people, what I'm trying to understand is what are the stresses on their system both physiologically, but also psychologically?

MW: So, one of the questions I have in my additional questionnaires I send is asking them about if there's a barrier to them getting better could they rate on a scale of 0 to 10 how the following factors may impact? So financial stress, time stress, and energy stress or energy challenges. Because a lot of people have no problem with money, but they just don't have the time to engage in changes to their lifestyle or exercise programs. A lot of people do have challenges with money, so that's the biggest issue for them, and time and energy aren't the problem. And then, some people, of course, with persistent pain don't have any energy so the idea of doing an exercise program is a horrendous thought to them.

MW: Once I've got a sense of what they're looking for and how that matches up with what I'm offering, then I can either direct them elsewhere or I can bring them in for the right level of assessment and intervention.

SB: Yeah. You were saying last night you operate in a slightly unconventional way compared to a lot of osteopaths and chiropractors, you don't work on a 30 minute appointment model that so many of us do.

MW: No. Typically, the shortest I see a patient or a client is an hour, but most frequently I see people for multiples of hours. It might be for a day, I might have someone come in for a day and do a full screening of their system. So it's a lot of length-tension assessments, it's a lot of functional movement patterns from the musculoskeletal side of things. Also, looking at higher reflexes, so things we've mentioned the jaw last night and how you've got these various reflexes that keep the bite on the horizon and the eyes on the horizon, and the ears on the horizon. So we screen for higher reflexes, but we also go into all of these questionnaires and look at how they may be impacting.

MW: A classic one is that, like with the shot we're saw earlier of the digestive system being under stress. When the digestive system is under stress it typically impacts on the abdominal wall function, so the tonic fibers in the abdominal wall can be inhibited by viscerosomatic reflexes. This is part of what drives bloating in irritable bowl syndrome or in premenstrual syndrome. That's the organ inhibiting the tonic drives to the musculature that overlie the organ, and therefore you get bloating. And so then, it would be of little benefit to give that person a core program, let's say, a core exercises motor control work if you haven't addressed the organ disfunction

underneath. That's what this physiological load screening allows you to do, is to look at which organs are under stress.

SB: We've had a question come in, I don't know who's asked the question. It says, "Regarding physiological response, isn't this similar or the same to what Irvin Korr described as facilitated segment?" Which I remember being talked about years ago in college, and I've always thought actually central sensitization is the more modern interpretation of facilitated segment.

MW: It is. From what I've read, and I've read around it a fair bit because it can be contentious, what is well known is that ... and I think perhaps the reason that they changed the terminology from facilitated segment to central sensitization is that we know it's not a segment that is affected, it's multiple segments. So it's between six to ten segments up and down, below the segment where ... So you take the colon, for example, innovated by T12, L1, L2. It will be that level that you would get the most facilitation, but you'd also get it spanning up several joints and down several joints.

MW: I think this is fascinating, because if you think what we can see from the physiology and see it clinically as well, is that these drives seem to inhibit tonic motor neurons, so you're losing motor control when you have something like irritable bowl, you can be losing motor control to your abdominal wall. But, the thing is that if you look at the innovation of the musculature in that region, T12, L1, L2, well, if this facilitation or this sensitization is spanning six to ten segments up and down the cord, well, it's affecting the entire lower limb as well.

MW: This doesn't mean you can't move of course, because you can absolutely still move, and you can absolutely still perform at a really good level, because you've got lots of good phasic motor neurons and phasic fibers that can move you around. But, the problem is that those phasic motor neurons fatigue early, or I should say the phasic fibers because they're fast twitch, so they fatigue early. This then makes you not perform so well in the long run, it means that you obviously don't have as good control of the joint, it means because you're fatiguing you're more prone to injury. You can see that something like an irritable bowl syndrome can really compromise athletic performance and the risk of injury, or increased risk of injury.

MW: To me it's quite fascinating that you can lose a lot of control, fine motor control through, not just the abdominal wall, but the entire lower limb, through something like the physiological load of irritable bowl, or premenstrual syndrome, or prostate issues, or bladder issues.

SB: Someone's actually asked whether develop a physiological load can contribute to the development of neurological conditions, degenerative conditions?

MW: Degenerative conditions? I think it can. There's always rationale for how these things unfold. So for example, we know that physiological load, so essentially overall stress on the system is going to take you into more of a fight flight state and less of a rest digest state. That then messes with your blood sugar mechanisms, and we know that when blood sugar mechanisms are suboptimal that can lead onto Alzheimer's and other neurological degeneration in the longer term.

MW: Then you've also got the whole question around immune sensitization as a result of the digestive system being impacted. When you get immune sensitization then you can essentially be more prone to autoimmune type issues arising. There's definitely rationale for how these things could be driven by physiological load, but I wouldn't say that it's always the case. Of course, there's other potential mechanisms such as virus, infection, and heavy metal intoxication and so on. I wouldn't just say yes, it's always physiological load.

SB: Okay. Someone's asked a question which was on the tip of my tongue as well a moment ago, which is about the questionnaire itself. They've apologized that they missed the beginning, but I don't think we covered it anyway, which is how was the questionnaire designed? My particular take on that was how well has it been assessed, and does it stand up to scientific scrutiny?

MW: Yeah. First of all, it was designed by a team of medical doctors who were developing, and we did talk about this right at the beginning, they were developing screening tools to assess different aspects of the human physiology. And so, they were particularly interested in this notion of vertical disease, people that weren't yet horizontal.

SB: But, in terms of somebody assessing you to see, well are those findings you showed us earlier on, are they actually reliable, can they be?

MW: Yeah. What they did was they then correlated their questionnaire assessments with the lab tests that they were doing, and they were developing more and more technical lab tests, more and more specific lab tests for different aspects of human physiology, and then they would adjust the questionnaire. All of the questions are weighted, so for example, with the liver and gallbladder one of the questions is, "Do you experience right sided shoulder pain?" We know that that is a potential symptom of liver and gallbladder function, but it's not weighted very strongly because of course, there's many things

that can cause right shoulder pain. Whereas, if your skin is turning yellow, that's much more likely to be a liver issue, so that one's weighted more strongly than if you have right shoulder pain.

MW: The whole thing is calculated and weighted so that it has good clinical relevance. But, it is still a questionnaire, so you are dependent on the patient's subjective interpretation of their symptoms. I've had a situation one time where I had a guy come in who had had, I think, six bowl surgeries because of inflammatory bowl disease. He came in to see me, and he had one of the best scores I've ever seen on a health appraisal questionnaire. In that instance what you know is that this guy has lost touch with his body, he's shut down his awareness of what's going on in his whole visceral physiology, because probably the whole situation has been so painful to him that he's had to shut down.

MW: And so then, you can essentially take a different tack with someone like that, and explain that there may be emotional components that need to be addressed, and explain how this could be a strategy that he's done to cope with the pain of the situation. It always gives you information, but you do have to correlate it with what you see in front of you, and with the rest of the medical history.

SB: I haven't been asked this, but I imagine that some people may be thinking that people who don't give a full day to their patient, or several hours to their patient. If they were to ask their patients to fill in these forms, would they be able to make use of it themselves in clinic? Would they be able to interpret it well enough to say, "This is how I need to direct my treatment"?

MW: I think so. I think the nice thing about it is that it's visual. You can really scan over it very quickly and see this one's in the red, that one's in the green, that one's in the red. And so, let's say you find that the kidney and bladder are scoring high, well now you know if the kidney and bladder are scoring high, you know what the innovation to that is. It might affect the way you're assessing the patient, so you might just be looking at that thoracolumbar region a little bit more, you might be considering a loin to groin distribution, and it might just stimulate in your mind, "Oh. This patient actually did mention that they had an old groin injury."

MW: It might not be a current thing, or it might not be something that is really a pressing concern, but now that the kidney and bladder are scoring high you think, "Well, that's interesting because that's a kidney distribution pattern." So it can just inform your treatment a little bit more. And then you may say, "How are you at drinking water?" And they might say, "I hate water, I just drink coffee." And

you say, "Well, that might be a useful thing for you to consider because the kidneys seem to be under a little bit of stress here." Normally there's multiple things that can drive kidney stress, and so you might suggest one or two other things related to nutrition and lifestyle that ties in with that.

MW: But certainly you can use it quite loosely in that way, or you can go into much more depth and actually use the health appraisal form for an entire session to coach the patient. It doesn't always have to be hands on treatment, it could be we're going to talk about nutrition and lifestyle today.

SB: It's funny isn't how time flies by when you're enjoying yourself. We're nearly at the end. I always say to guests who come in here, "We've got a 90 minutes broadcast," last time, 45 minutes now, and at the beginning I'm always thinking, "Oh gosh, are we going to be able to fill the time?" And then suddenly it's the end of the broadcast and we've got loads of questions. We've got 15 questions that we didn't ask last night, because we didn't have time, but I'm going to put them to you.

SB: Somebody is obviously very keen because he or she has said, "Before Matt leaves today could you please ask him my question from yesterday regarding how we can get more comprehensive training on TMJ assessment and treatment as a lot of us have done short day courses only, but nothing really in depth?" A day course I think is a lot more than most people have done.

MW: Okay, that's a tricky one to answer.

SB: Is it worth you thinking about that one and giving us a written feedback on that one, and we'll put it up?

MW: I don't know anyone specific that runs courses, but I do know that the British Society for the Study of Craniomandibular Disfunction, they do run workshops and courses from time to time, and the specialists within that group run their own courses. Generally speaking those guys would be pretty sharp and good to train with. I could potentially put on a workshop at some point if there's enough interest, so that's another thing, I do do that. I've trained the faculty at…

SB: Well, we'll see what feedback we get, because if we can we'll put something together.

MW: Yeah. Sure.

SB: It depends on the feedback from our audience, of course.

MW: Yes.

SB: An observation, coffee, toast, and Matt for breakfast, this is great. Thank you for getting up so early to give us a breakfast TV show. Thank you very much for the feedback, whoever said that. Just noticed Matt wearing vibrant Fivefinger trainers. That's very observant. I don't know how the camera got down that low. Do you wear them in place of regular shoes, and do they help your posture and everyday walking around, et cetera? Very quick answer.

MW: Okay. Yes, I wear them every day. I think they do help with my posture.

SB: We talked about these in the previous broadcast.

MW: We did talk about them. I think they're great. I love the way they allow you to engage with the environment. I think they keep your feet well conditioned and propreceptive.

SB: Final question, which is probably a yes no answer given the time. Do you think that in addition to Lumbar facilitated segments it's possible to get SIJ involvement with pelvic disfunction?

MW: Absolutely.

SB: Right. Good. That's a lovely simple answer. Matt, thank you for giving up your morning to come in and see us after a long evening last night.

MW: That's a pleasure.