Academy of PHYSICAL MEDICINE

Transcript

Middle-Crossed Syndrome Ref 285

Steven Bruce
Well, good evening. It's been a long time coming. But tonight I have finally managed to get Matt Walden back into the studio to share some of his immense knowledge. Now, you might think I'm just flattering him sucking up to my guests. But seriously, we've had him on the show, I think 10 times before and each time on a different topic. And each time it's been just fantastic stuff. Massey is of course, an osteopath. He is someone who writes regularly for the Journal of bodywork, bodywork, and movement therapy. In fact, he's an associate editor of the journal as well. And what he doesn't know about biometrics could probably be written biomechanics, I should say, shouldn't biomechanics be written on a postage label? Matt, it's great to have you with us again.

Matt Wallden
Thank you very much for having me back here. We

Steven Bruce
are wondering what's been going on? We haven't seen you for a little while. Have we? Yeah, to get you here for ages and had to postpone your last time because I had a COVID positive test and the rest of it. That's right, what's going on in your world? You got a lovely new website, Matt? walden.com. Yes, that's

Matt Wallden
right. And so well, we moved house and did that in amongst the middle of COVID. And that, obviously, was quite a task like it always is. But we built a clinic in the new house or in the garden of the new house. So that's been kind of professionally, a lot of the focus and the time there. But also still writing, I've been editing, Paul Cheks latest books or Paul's Chek Institute. Yeah, that's it. Yeah. So he's, he's writing a book

Steven Bruce
Remind me what the Chek Institute does. Yeah.

Matt Wallden
So, there's a lot of people well, the way the way I normally explain it as a quick version is that it's like an interim between strength and conditioning, and manual therapy. So, it's really, a Czech practitioner knows quite a lot about the kinds of conditions that we would treat, but they can take what we would do with their hands and move that into the gym environment.

But it's also a very holistic approach. And it relates obviously to nutrition, lifestyle, and a kind of physical, emotional, mental, spiritual view of the human being. And

Steven Bruce
it's spelt C H E K , EK.

Matt Wallden
Yeah, yeah.
And so what Paul has been doing is writing a book called Spirit Jim and so his his notion is that the world is a gym for spiritedness you know, and the world presents resistance to us and that's our kind of spiritual work to do is to work against that resistance and overcome it so that we become stronger and so those were the mystics on what it sounds it because it's got the word spirit in it, but it's very practical, I think as well. So but yeah, that's obviously taking a fair chunk of time as well.

Steven Bruce
What about your last time we were in the studio together you were talking about? Doing your own podcast lessons online. Let's Yes. So

Matt Wallden
what I started with the podcast, leading into the pandemic, and then I actually realised it was such a huge amount of work, you know, when I said that, and it was taking me about a day a week, and after six months of doing this, I realised that, you know, that's 26 days, completely unpaid. And, and that's more than a month's worth of working time in six months that you spent doing this thing.

Steven Bruce
It was astonishing how much time it takes, yeah, properly.

Matt Wallden
Well, I think the thing was, I thought I would do it for fun, and it was fun, but then you realise how much it's taking away from your working time and your family time and everything else. So I thought, Well, I'm gonna park that, partly because what was going on with the pandemic, I felt I really needed to look into understanding what was going on there. And so I invested quite a lot of time into that rather than the podcasts but my, my goal is to relaunch that this year, so So I will be sort of kicking that off. Once my website is finalised. So, so there's this kind of got to get the ducks in a row.

Steven Bruce
No one has ever finished their website.

Matt Wallden
That's my excuse for not restarting the podcast. But yeah, so that's the normal thing. Lots of different things going on.

Steven Bruce
middle cross syndrome, am I the only one who doesn't know what the hell middle cross syndrome is? No, no, no syndrome.

Matt Wallden
I just made it up. So that's true. So

Steven Bruce
the you made it up in 2014, and wrote a paper about it?

Matt Wallden
Yeah, well, I wrote, so it was something that I had observed probably from the early 2000s, this pattern that I was seeing in my patients, and in fact, right from the get go, I had quite an early realisation that had illness and footedness were probably quite important in terms of patient's pain patterns, and middle cross syndrome goes with handedness. And it does, yeah, yes. So So essentially, laterality is the sort of umbrella term for those two. But But yeah, I mean, I suppose before I did the che k training, I was very focused on the sacroiliac joints, I found that they were very fruitful to work with the sacroiliac joints in terms of relieving low back pain. And what I observed was that not invariably, but but almost invariably, someone who is right footed, of course, that means they tend to stay more on their left leg. And so they tend to get tighter in the left sacroiliac joint. And they tend to present with right sacroiliac joint pain because the left sacroiliac joint is not moving so well. Okay, so that was a pattern rising? Of course not 100% of the time, I would say just as a ballpark figure about 80% of the time that felt to be the case.

Steven Bruce
Generally, if you talk about footedness, I mean, the image that springs to mind is of a football always kicks with the same photo, yes, whatever. But also, if you're right footed, you tend to take the first step up the stairs with your left, I believe. That's right. Yeah, I don't know whether that makes any difference, because obviously, you still got the other stairs to go up. But it's always gonna be that it's only one step, you're always gonna do it with the left leg. So maybe that also has an impact.

Matt Wallden
Yeah, well, I mean, this is something I think many people even manual therapists get wrong. They think that if your right foot, if that's your strong leg, just like if you're right-handed, that's your strong hand. But the big difference between the hands and the legs, so the arms and legs is that the legs are in the clothes chain, we use primarily in the clothes chain, in terms of when they're under load, at least. And we tend to load our upper limbs, our arms in the open chain, picking things up, you know. And so, we would tend to select the hand that we most coordinated with pick up a bag, for example, and then we get stronger in that arm. And so that that makes us stronger, if we're right-handed, makes us stronger in the right arm. But when we kick with the right leg, of course, the load is going through the left leg. And so we get stronger in our non-dominant leg. So it's not it's normally the non-dominant leg in inverted commas. That is, the stronger and it's normally the leg you jump off of. And exactly what you said about taking a step. If you think about putting a football in front of a child that's just learned to walk, and you say, there you go, kick that. Now, they're not going to think which foot Am I good at kicking with? Because they don't know yet. What they're gonna think is which leg Am I standing on? And I'll kick with the spare leg. Yes, right. And so then develop the skill of kicking with the spare leg. And so what we see in terms of how that translates to clinical practices is that the non-dominant leg, the standing leg tends to be the ones more stable. And that's why we jump off of it. Typically, again, again, these aren't 100% patterns, but but there is the trend towards a right footed person will tend to jump off that leg, left leg if you get them to do a long jump or a high jump or something like that.

Steven Bruce
So I'm going to take you back a few seconds. Yeah, because I imagine that pretty much everybody knows what you were talking about here but and you did explain it in passing but close chain means that the joints already load bearing weight. You actually exercise the muscles?

Matt Wallden
Yeah, the simple way of thinking about closed chain open chain is that a closed chain exercise is where you can't overcome the resistance you're pushing against or pulling against, and therefore you either move away from it. So if you push against the ground, you can't overcome the ground. So you see push away from it. Or if you had a chin up bar, and you, you can't pull it down towards you, so you move towards it, you can't overcome the resistance. So that creates a closed chain environment, when you can overcome the resistance, like picking up a dumbbell this light enough, you'd be able to pick up, then that's open chain. And similarly, if you were to kick with your leg, that's open chain as well, but the standing leg is in the closed chain.

Steven Bruce
So if you are sending somebody into the gym, or if you're going to the gym yourself, what's the relative benefit of doing closed or open chain exercises, because you could be doing knee extension exercises on a on a bench, which is open chain, or you could be doing squats getting the same sort of result, but that's close to him?

Matt Wallden
Yeah, so there's, there's research into this. And in fact, it's quite you can do do your own sort of N equals one research straightaway here. And now by just palpating your quads and your hamstrings, and going to squat, you know, get up out of the chair kind of thing. And you can feel that both the quads and hamstrings co contract to do that. So, when you're in the closed chain, what you get is contraction, either side of the joints, which minimises shear through the joint. So, if you imagine if that's your knee joint, and you've got your hamstrings, pulling the tibia that way and you've got the quadriceps pulling tibia that way they co contracts, well then the tibia. Yeah, it doesn't put any shear into into the ligament, let's say the ACL here, you know. But if you do a knee extension, well, then you have to essentially relax or inhibit the hamstrings and contract the quads. Okay, so now you're putting a huge amount of shear through the ligaments system. So closed chain exercises in general are much better for rehabilitation of ligamentous or joint injury.

Steven Bruce
Right. So let's get back to middle cross. Reality.

Matt Wallden
Yeah. Okay. So you want me to

Steven Bruce
get me out of my misery.

Matt Wallden
Okay, well, so I think it's quite helpful to just start out by talking about youngers muscle imbalance syndromes, just just briefly, because that's what this is based upon. So yonder had this concept. In fact, I'll show you a slide. So these are the sort of classic muscle imbalance syndromes. Yeah. So you've got the lay of syndrome over closest to you, and

then the lower cross syndrome, optimal posture in the middle, and then you've got what's called the upper cross syndrome on this right hand side, right. And so the two that I've probably talked about the most are the Upper cross and lower cross syndrome. And that's because yonder talked a lot about them. Delayed syndrome was a little bit of a kind of secondary thing that yonder and Lev it all the wit talked about. But interesting enough, that was because you're under found that these muscle imbalance syndromes were the most common in his patient base.

Steven Bruce
So when we talk about a syndrome, we're generally talking about symptoms. So are there classical symptoms for each of we're not the optimal posture? There shouldn't be any symptoms with that one, but

Matt Wallden
But yeah, there's so there's, there's a raft of symptoms that can come as a result and conditions that can arise as a result of a muscle imbalance syndrome. So you know, the thing about muscle imbalance syndromes is what you are witnessing when you see them is you're you're witnessing certain muscles on one side of the body, the body being too short or facilitated, so they're overactive. And they're antagonists being relatively inhibited or weak. So if we were to look at the upper cross syndrome, which is, you know, almost ubiquitous, most people have this to some degree because it's a gravity pattern. Gravity tries to collapse us into this upper cross position, which is essentially a forward head posture, protracted shoulders and increased thoracic kyphosis. Okay, so almost everyone has that to some degree. And this is measurable. So this is one of the things that we do in the in the ChexSystems. We measure everyone to see to what degree they have this or don't have it. Now, what drives that in Yonkers philosophy is short tight. pecs, in particular pec minor shouldn't rotate the shoulder long week rhomboids and middle trapezius which allow the shoulder to protract, short tight sternocleidomastoid, upper trapezius and elevator and suboccipital 's which which pull the head forwards and then long weak or inhibited the cervical flexors and super and infrahyoid group muscles so, so that the so you know, slightly different to some manual therapy philosophies, yawn. This concept is that these muscles draw the joints into a certain position, essentially, in this case, a hyper kyphosis and a forward head posture So what he's sort of pointing to is that the muscles that are short and tight for some reason their facilitators and the ones that along with for some reason they're inhibited or deconditioned. And of course, there's many reasons why that might be. And in our modern age, we spend most of our time, you know, leaning over a desk or, you know, driving a car, we tend to roll into that upper cross syndrome. And even as osteopaths or manual therapists, we're working with our hands in front of us. So it tends to protract and you tend to round forwards.

Steven Bruce
And if you're a bloke, you tend to work hardest on your pecs, because that makes you look good on the beach,

Matt Wallden
where there's that there is that as well. Yeah, yeah, exactly. Yeah. And actually the abs, the rectus abdominus also compounds this because it pulls that first rim down, so it pulls the try not to bash my mind pulls the sternum down, and compounds this sort of rounded up across pattern. So I mean, that's the upper cross, but you've also got the lower cross. And the reason they're called cross syndromes is that you've got on one side of the body. So as we described the rhomboids and serratus, down here, and the deep cervical neck flexors or

deep cervical flexors and super infrahyoid on that arm with the cross, they are the weak or inhibited muscles. And then on this on the cross, you've got the tight pecs, touch Paisius, tight suboccipital levator. And they are, as I say, you know, the short and tight so the cross represents how the muscles react to 40 loading or to pain etc.

Steven Bruce
I see dear old Leon, Chaitow name against that and 1998 I mean, was he the first person to put a name to this? What was the first No, no,

Matt Wallden
so yeah, yonder is the guy that coined it. So and that was back in. I think he first talked about it in the late 60s, but it was certainly in the 70s. He started writes about it. In the 80s, it became a little bit more accepted into broader physiotherapy circles. And then in the 90s, I think Leon started to write about it as well. And one or two other authors.

Steven Bruce
We have an unfinished question come in. Yeah. We better get this one out of the way, I suppose. Do you know Robin moody. I know of Robin moody. Every time. Every time you take part in the show, he manages to barefoot walking running. Question is if you got your barefoot shoes on, and of course, you put them up to the camera.

Matt Wallden
Of course.

Steven Bruce
You're connected connection with barefoot goes back to you actually was one of the champions of barefoot shoes in the early days.

Matt Wallden
Yes. Yes.

Steven Bruce
Was it five finger that you did all

Matt Wallden
so these are the five fingers and that's what we distributed Vibram Five Fingers from 2007 to 2017. We distributed them to the UK.

Steven Bruce
You've now made Robin a very happy osteopath. Someone else is going.

Matt Wallden
Excellent. Excellent. Yeah, so so that, you know the idea of the cross syndromes essentially talks about the pelvic girdle and the pectoral girdle. So it either rotates the pectoral girdle forwards, which is, which is the most common way for it to go with a pelvic girdle, you can go forwards, which is a lower cross syndrome, or backwards into a posterior tilt, which is a layered syndrome. And depending on which muscles are short and tight, which ones are long and weak or inhibited, then the pelvis will go in a certain direction. So, so though those syndromes which are described by yonder, fairly well established in the literature, there's always some controversies over these things. And people say that they don't, you know,

they're not real or, and I think, you know, we could explore that later if there's questions around that. But the process of facilitation, which you know, is fairly well described this idea that each time a nerve impulse it traverses a given set of neurons to the exclusion of others, resistance, that impulse will become smaller. Okay, so, so if you use a certain set of muscles, such as the pecs because you're protecting your shoulders, well, then you're going to facilitate the pathway to the pecs and relatively inhibit the pathway to the rhomboids. Okay. So, if you take that premise, and you think about handedness and footedness, well then especially if you've got someone who's a footballer or a tennis player, but really all of us to a greater or lesser degree have the these latter ality patterns. Then what that means is that we facilitate certain musculature that runs between the girdles. And so Yan does concept was all about, you know, essentially sagittal plane movements at the girls what I was talking about was transverse plane movement between the girdles and so if we if we look at the slide on the slings, I think this this really helps describe it. So, we've got this idea of the anterior and posterior oblique slings so closest to posterior oblique sling. She's fairly well described now. And, and understood. So you've got the glutes on one side, passing through the threat lumbar fascia into the lat on the other side. And I'm trying to remember the exact anatomy of it, but they're on the same layer of fascia. Okay, so the threat lumbar fascia has multiple different layers and laminate it if I remember, it's the, it's the superficial laminar of the posterior layer of the threat lumber fascia, but those two muscles are on. So when one can tracks it pulls into the other one. And this is again, it's not particularly new, I think, way back in the early 1900s, that there was descriptions of this. And it's also known as the smart spring of Marg area. But the idea is that it with each step you take, you get a certain amount of elastic energy stored, and then you get the recall on the next step.

Steven Bruce
So it's got a hell of a scowl going on. Yeah, not happy at all.

Matt Wallden
That's it, that's it, he must have had a tough day. But But so then the one that's not so well known as the anterior oblique sling, and that ties in a bit more with the middle cross syndrome, although they both work synergistically as you can imagine. Because, you know, as one arm goes forwards, the opposite leg goes forwards. And so what that means is relatively, the other arm and leg are going backwards. So that's putting a stretch through that anterior oblique sling. And then you get the recall, and then you get the stretch in the other end to theory, oblique sling. So this is a kind of mechanism for optimising efficiency as you walk through a field of gravity. But if you are right handed, let's say on foot, let's, let's use this one, because this is this is showing from the right leg to the left arm. So if we said, this person's left handed, well, they're likely to facilitate the sling from the right leg up into the left arm, because that's what they're going to use mainly to throw things to carry things, and so on. So if he was a tennis player, and he's left handed tennis player, well, that's the sling that's going to be used the most, and therefore, it's likely to become facilitated. And relatively, you're going to get inhibition or deconditioning, or weakness of the opposite sling, that then creates an asymmetry. And this is this is where it kind of links back in for the manual therapists out there that look at things like pelvic torsions. Well, if you've got an asymmetry in those things, it's going to create a torsion in the pelvis. Okay. So so we can certainly go in and mobilise and manipulate the pelvis. But if we don't address the underlying musculature that's controlling the pelvic movements, then it's going to keep going back. Right. So. So that's,

Steven Bruce

that's probably tough to do. Isn't it? Your average tennis player? Let's say he's a pro or semi pro? Tennis player? Well, she, of course, they're sort of late 20s 30s. They've been doing this all that? Yeah. How successful? Are you going to be balancing those muscles and slings up?

Matt Wallden
Yeah, well, you know, I think I think it's always gonna be a challenge. When you've got someone I'd like to say that this doing it to that extent. But interesting enough, there has been research. So since I proposed this, in the two papers, I wrote in 2014, there was a team of researchers from Iran, Tehran of all places, they actually invited me to go out. And I spoke to a friend of mine who works for the MO D. And he was saying, I don't think it's a good idea. I don't think you know, it just not really from a safety perspective. But he said, If you want to travel to the US, I wouldn't make a trip to Iran. Really? Yeah. So that was a shame. But, but these guys, you know, their PhD is post doctorates. And they're working in the equivalent of the premiership in Iran. So with their top flight football, and what they did was they took these concepts and they assessed, the players they were working with, found that a lot of them had this expression of an imbalance in those things systems, which is exactly what you'd expect, and what I've observed through my work with with footballers, and the public at large. And then what they did was they did an intervention, an exercise intervention. And they found that following that the players improve their speed, they improve their stride length, they improve their kicking distance, they got taller, which is quite funny. But it's just a better use case. So just exactly, exactly. The only thing that didn't change was theirs with their stride whip, which, I'm not sure whether it's a good thing or a bad thing. I would think that the wider the width of the strike, the more problematic it is. But but there's no change to that anyway, after the programme. So it does seem that there's a kind of performance element, you know, as as I would have predicted, but they've now done some research into that. And so I understand they've written a book on the middle cross syndrome, but then I don't know the language maybe Arabic or something. I'm not sure.

Steven Bruce
I was gonna I was gonna say, again, we talked about symptoms earlier on, I presume You like everything in medicine in therapy, not everybody who presents with what you might think of as an upper cross syndrome or other that will have problems. And somebody is echoed this year. So, you know, some people just born like that, and that's perfectly normal for them. I've always questioned the idea of perfect posture being what we should all get be forcing our patients into. Yeah,

Matt Wallden
I was gonna say relates exactly to that whole posture discussion, isn't it? And you know, there's, there's a number of different ways of thinking about that. And, you know, one way is that the better your posture is in inverted commas, just like, you know, the better your ergonomics are in inverted commas, the less stress that puts on your system. So, but but the reality is that human body moves, you know, and so there isn't really this is like the neutral spot. We took that neutral spine before me and

Steven Bruce
you brought your sophisticated, sticky. That's right. That's right.

Matt Wallden
Yeah. And so the, you know, I think the important thing to consider is that the body should be able to move symmetrically, and when it doesn't move symmetrically, then that puts more

stress onto certain parts of the body. And, you know, so when I say symmetrical, I'm really talking about the middle cross syndrome, with the upper cross the low across is that, you know, if you've got someone with, say, an upper cross syndrome, well, it puts more stress on to the ac joint and ESC joint. Okay? Does that mean they're gonna get osteoarthritis of those joints? They're more likely to overthink, but it doesn't mean they're necessarily going to get it because it depends on many other factors, as we know. And it puts stress on to lots of other things like the breathing pattern. So for example, if you if you've got protracted shoulders, it forces the sternum downwards. So it holds you in exhalation. Yeah, yeah, so. So there's lots of different elements to the Upper cross, or lower cross of lead syndrome, that impacts on the function, which is probably suboptimal. So I think we should be able to work symmetrically, we should be able to work in neutral, we should be able to have good ergonomics, but that doesn't mean that we stay in those positions the whole time. So but yeah, it's one of those debates that you could,

Steven Bruce
you could have, I have wondered in the past, whether it typically for many people in the gym, if they're on a machine or a bar machine, particularly if they're doing let's say it's a chest press, they'll be pushing with both arms, whichever one is already strongest, will probably be doing more work than the other one. And the same with leg presses, I'll set the weights to the same both legs, I've often wondered whether we ought to be more concerned about improving the weaker side to get them more balanced. Well, that's what we do

Matt Wallden
in the Chek system. So when we find that one hamstrings tighter than the other, we do a right left, right hamstring stretch, for example, you know, and then we might give an exercise as left right left to strengthen the hamstrings. So you know, we tried to make it bespoke. And what we do is across time, you see that those measurements change. And so then you know you can overcorrect. So if you're not reassessing, you can actually overcorrect and make the other side too tight. Or we

Steven Bruce
might be getting off the topic here. Or maybe we're not that whole business of stretching intrigues me because my understanding was that you can do stretching in the clinic in your treatment room, and the effect will last a couple of hours. And then it will basically go back to what it was before. And in order to get a lasting effect. It's got to be a long stretch. And it's got to be a frequent stretch. And it's got to be a regular stretch. So that means that it's got to be at least daily, if you're going to get a lasting effect from it. Is that your take as well? Or do you think just a patient coming in once a week into clinic is going to get a meaningful result?

Matt Wallden
Well, I think I think the reality was stretching is that we've for too long sort of looked at stretching as a bit like stretching out, you know, piece of plasticine, you know, so here's a hamstring. And if I put traction at either end, then we'll stretch it out. But we forget that there's a nervous system attached to that muscle. And the nervous system gives the hamstring as is an example because, you know, I've studied them a lot, but the hamstrings will increase their tone. For example, when you're constipated, you know, there's plenty of research into that they will increase their tone when the sacroiliac joint is unstable or is painful. So we all know that that you know, just with low back pain, in general, they tend to tighten up. When there's ACL issues, there's quite likely you're gonna get increased hamstring time because the hamstring biceps Morris in particular, is a dynamic agonists to the ACL. So so the point is that you could stretch out that hamstring, and if the person

doesn't have SRJ issues, you know, constipation, or what was the other ACL, then you know, they might get an effect, but if they've got an issue there with any of those things, their nervous system will just tighten that right back up again, sciatic nerve, you know, adverse neural tension. That's another time that you could do hamstring stretches till the cows come home and you won't get an effect unless you've mobilised the nerve. So, you know, we really have to think Think about the muscular system. In fact, Stanley Kelemen, who wrote the book, emotional anatomy describes the muscles as fat nerves. And I think that's a lovely description of them. Because what he's really saying is, they're an expression of the nervous system,

Steven Bruce
this is turning an awful lot of what we get taught in colleges on our hit on its head, isn't it, because we're taught in college, and if someone's got a problem with the pelvis, where do your muscle testing and all this one's tight, therefore, we must stretch it and that'll fix your pelvis? Well, actually, if it's not the muscle that's causing the pelvis, or whatever it might be the other way around, then we need a different approach than we

Matt Wallden
Yeah. And that's, that's, you know, what we want to aim to do is to to track it back to its source. So even with the middle cross syndrome, although the way I have described it in the papers, and we'll look at some tests in a moment, as well, is quite biomechanical. You know, we're talking about the anatomy, which muscles might be overactive or underactive, there's still the underlying reality that there could be this rare somatic reflexes affecting that sling, for example. And so again, you could condition the muscles, but if there's an organ that's underlying those muscles that's inflamed or irritated in some way, you're not going to get that muscle to fire effectively, when the person is not consciously engaging in a couple of questions

Steven Bruce
about exercises. First of all, someone who I'm being told is called birdie, either by themselves or by the system, the system which gives random names. Birdie says, when you refer to an exercise intervention, what specifically do you mean? Might be hard to be specific about that? Because it could be a whole range of things?

Matt Wallden
Yeah. Well, so you know, that there's so many different exercise interventions you could make. And I wonder if that related to the research that was done in Tehran?

Steven Bruce
Because you, maybe we can ask you to come back. And yeah, that was meant it would be might be what do we mean going into gyms? Or do we just mean doing exercises at home, or whatever? Yeah,

Matt Wallden
I mean, most of the stuff you can do at home is always helpful to have a little bit of equipment. But you can do it without equipment you can do, you know, we can show you some exercises that you can just do on the floor or on, you know, on a treatment table, on a yoga mat, whatever. But it's always helpful to have things like Swiss balls or cable machines, even better, you can, you know, employ those in a different way. But actually, just just going back to what one thing you were saying, Stephen about the using weights, machines, where,

you know, you might have a weakness on one side of the body, but you kind of can hide behind the machine, if you like. Interesting enough, the guys in Tehran, they kind of did that not not using machines, per se, but rather than putting a specific intervention in for these people that they identify with middle cross syndrome, they just gave them a generic core stability programme, right? Which was not, you know, bat imbalanced, let's say, in the right direction. So if you've got, if you've got an imbalance from the right shoulder to the left it were like a weakness in that sling. There, then what I would do is I would give my patient left, right, left, so so they say left, right, left, if you're using the legs as the load exercise, to work that sling twice as much as this sling. So you're starting to correct that imbalance. But what they did was they just gave them core stability exercises, and then came back to reassess. It was eight weeks later, and they found all of these improvements. So they were really doing kind of what you were saying, just working both sides, which is which is a bit of a low brow way to do I would say and not not, but it worked. Well, it improved them. But I wonder how much more they could have improved than by actually addressing the imbalance that was present.

Steven Bruce
It does raise a question, which is apparently the cause of some discussion on those people watching through the website at the moment. They're asking, Do we really need to change things if there aren't any symptoms present? Oh, you say you said of the surround researchers identified an upper cross syndrome. Yeah. And so therefore they intervened.

Matt Wallden
Yeah, it's a good, it's a good question. And again, it's one of those ones you could debate for a long time. It kind of ties back in closely with posture and all kinds of things. And I had a bit of an argument about this with the team doctor when I looked at Chelsea, not not, you know, heated argument, but a discussion. And his view, like it was being discussed is that asymmetry is a normal part of being a footballer. No, no part of being a human. And maybe we should maybe these plays are great because they're asymmetrical, so maybe we shouldn't try to challenge that. My view is that gravity acts on use of magic symmetrically. Okay, it's pulling you towards the centre of the Earth that 9.8 metres per second squared, right? So it's a huge amount of acceleration force. And it's doing that symmetrically. So if you are asymmetrical using a body asymmetrically, is going to be putting asymmetric stresses through your system, which your body can really handle very well. But across time, that is far more likely to break you down. Then if you can maintain symmetry,

Steven Bruce
unless your body is adapting all the time to this, which would have been since birth. So it's adapting to the fact that this side takes more loads than that side.

Matt Wallden
Yeah, I mean, it does adapt for sure. But but say it also breaks down, you know, because if it's adapted perfectly, then we won't have any patients. And so, you know, I think I think a lot of people get to that point where they've exhausted their adaptive capacity. And that adaptive capacity can relate to things like symmetry. But the reason I think symmetry is not in a lot of the research is not coming up with something that's particularly important is because there's many other factors that contribute in like nutrition, and sleep and hydration, other other factors that will predispose the individual to increase risk of injury. And if all of those things are present, they're far more likely to get injured with their asymmetry. Whereas if they're eating really well, sleeping really well got good genetics, you know, got good

breathing patterns, all kinds of different things that are in support of their function, then they might well get away with that asymmetry.

Steven Bruce
But you also said that by by training them to be less asymmetrical, yeah. Performance improve, which I thought had been of considerable interest to Chelsea Football Club.

Matt Wallden
Well, yeah, you think so. But then there's, there, you know, there are other factors, there are many other factors involved in professional sports, and, you know, people working in professional sports. So, but, you know, one of the points I was gonna make about a football is that, you know, the idea that someone could be, they might be great because of their asymmetry. Of course, that could be true. But most footballers only touch the ball for less than 1% of the game. Okay. So that's when they need to be asymmetrical, and the other 99 plus percent, they need to be symmetrical. And then outside of the game, they need to be symmetrical, or it's benefit not don't need to be, it's beneficial to be symmetrical. It's kind of similar discussion to, you know, with a boxer, you know, you want a boxer to be able to round into this upper cross syndrome to protect themselves in the ring, be don't spend their whole life in that position, you want them to be able to adopt the position when they need to, but then to be able to come back out of it when they don't need to, so that they minimise the stress on their system and on their breathing patterns and everything else. But actually,

Steven Bruce
in terms of middle cross syndrome in boxing must be a real challenge, because it's very one sided. Yeah, like golf and cricket.

Matt Wallden
Exactly. Yeah, yeah. And I think it's just an inherent part of human nature. One of the things that I picked up on in terms of laterality, is that in the birthing process, if the child didn't have laterality, they wouldn't twist. So that in the birthing process, the child actually twists, so they can get the cranium through the birth canal, or the pelvic outlet. And the, you know, if you had perfect symmetry, and you use your body symmetrically, you know, in that pushing the legs pushing against the diaphragm of the mother, then you just push straight and you won't get the twist. So you actually need to have some laterality. For the birthing process, you get a torsion as as you move through the birthing process. So I think that could be part of the reason that laterality seems to be stronger in humans than it is in other animals. So there's some research suggests that chimpanzees have a lot lower levels of laterality. But they don't have you know, complete lack of it, they do still have preferences. And even, you know, desert orchid 127 races around an anti clockwise track and only one round a clockwise track.

Steven Bruce
I didn't know they were anti clockwise tracks. I think they were all identical.

Matt Wallden
I think I think there is what I think would. So this was just something I picked up on. And I thought, well, that ties in with the whole actuality discussion. But yeah, so so it's, you know, it's just one of these things that I think, from a clinical perspective, when you see these patterns of someone who perhaps is getting recurrent knee injuries, recurrent, low back pain or sacroiliac, joint issues. And, of course, you can treat those things locally. But if you can

look more a sort of whole body and you can see these imbalances, well, then you can address those imbalances. And that should help to minimise the recurrence.

Steven Bruce
Well, several people have apparently asked this, can we refer to a one sided dominance as an asymmetry? Does that necessarily mean it's asymmetry? Yes, yeah. Good. Well, it's a simple answer.

Matt Wallden
That's the quickest response I

Steven Bruce
can get. And Bob has said going back to stretching, are you aware of the theory? We don't physically lengthen muscles when we stretch them? We just accommodate the nervous system more tolerant to increase tension. Is there an agreed opinion on this?

Matt Wallden
Yeah, I think I think that's that's the consensus opinion at the moment is that

Steven Bruce
So all that stuff was tearing the muscle fibres micro tears in the muscle fibres in order to lengthen the muscle, we certainly gives you pain. Have you been doing stretching and exercise and so on? Because that that doesn't have a part to play in strengthening lengthening the muscle?

Matt Wallden
I'm not sure I don't I don't I haven't sort of looked into the the, you know, physiology, the micro physiology of it in any depth for about 20 years now. But from what I understand the current thinking is the nervous system that controls the length tension relationships, as we No

Steven Bruce
wonder if in terms of outcomes, it really matters why it happens. It's more a question that did happen as

Matt Wallden
well. So I think part of what's relevant to that is that if if the hamstrings are, though, you know, any muscle is slightly tight, because the nervous system is holding it tight, then I think at that point, if you overextend it, you can still tear it. So I think you absolutely can still get these micro tears, which become macro tears if they're over loaded. But the question is, why is that nervous system tight, and there could be any number of reasons, from emotional reasons to some of the things we talked about earlier. That means you're holding tension in that area.

Steven Bruce
Lawrence wants to know whether this could be a factor affecting scoliosis. And I'm assuming he's talking about middle cross syndrome here. Yeah, absolutely.

Matt Wallden

Absolutely. Yeah. Because, you know, I mean, we've talked about this before, one of the models I like to, to use to understand human function is Punjabis model, which is this, you know, neural active passive triad. And so of course, you've got the active components of muscles, which we're talking about acting on the joints, and the bones, which is the passive. So that's, that's the scoliosis is happening over here. But what's controlling the muscles is the nervous system, you know, and so we absolutely, if we can work on addressing the nervous system factors, and addressing the imbalances in the sling systems, then we can affect the position of the spine. Now, obviously, the thing with scoliosis is a bit like, with hallux valgus, you can correct a hallux valgus, to some degree, but it depends on how dedicated the patient is because you're fighting a battle with with gravity, again, you know, gravity is trying to take, it's trying to compound the scoliosis trying to compound the hallux valgus. So you've got to be dedicated, you have to create an equal and opposite force to that, which might include orthotics, but certainly a lot of corrective exercises, the right sort of stretches, maybe braces for the spine, or braces for the foot, you know, orthotics for foot. But the point being that you would have to be a big priority for you if you wanted to achieve that. But it is achievable. Because there's, you know, we know about Wolf's law, but that's essentially the said principle, which is specific adaptation to impose demands, which means that the body will always adapt to the demands imposed upon it, whilst it's alive,

Steven Bruce
we probably need to go and have a look at this on a real patient, though. So before we do that, a couple things here. Somebody, Lucy sent something in about horses, and I'm sure, Claire will be delighted. Only there's some research that shows that the handedness of a horse is due to its position in utero. Right. So that has any impact on which way round the race course they run. Yes, yes. But Mike is said, this is a this is a good question, actually in relation to patients in plain in pain. Yeah, a lot of what you said sounds quite complicated. And is it easy to explain to patients? You know, they understand what it is you're trying to do with them?

Matt Wallden
Yeah, I mean, I think it's like, it's like any of these things, you can make it very complicated if you want to, and if the patient's interested, or you can just keep it simple, and just explain whether you've got an imbalance here in the way the muscles are firing. And so if we can stretch you out in this way, or strengthen you in that way, then this should should help to reap redress the balance, you know, so. But I mean, this, this ties in with all kinds of elements of, of biomechanical function from things like for some for form closure at the sacroiliac joints to medial rotational instability through the lower limb and pronation patterns, so

Steven Bruce
that for some form closure in the sacred X, my word we got in a tangle about that when we were discussing it some time back we had I forget who was on the show talking about it, but you know, it's very easy to get those those expressions the wrong way. Maybe we won't go into that here. Yeah, we're gonna move in just a second. Sharon says, Is there any research about this sort of thing in relation to ambidextrous people?

Matt Wallden
I don't think there is but But what I've what I've picked up from looking at golf, I've got a textbook on literality. And in that textbook, they talk about how ambidextrous people still have a dominance you know, and so

Steven Bruce
are ambidextrous people, also ambi footed.

Matt Wallden
So this is this is the so we have dominance is in our feet, in our hands, in our ears in our eyes, and what else is there

Steven Bruce
But if I can write with both hands equally well, would I be likely to get a kick as well? We'll either foot or does it does it go together?

Matt Wallden
It can do they can do but, but you know, it's not uncommon for someone to be left footed right handed left eye dominant, right ear dominant, it can be all over the place. But typically, the more common pattern is that you're all on one side. So you're right footed right handed, right eye dominant, right ear dominant. And, you know, you can imagine someone shooting a gun, they tend to shoot, I can just imagine, I expect you can be pretty good. But but you know, so you would line up like that for most people, but some people will do it like this. And I'm one of them. Oh, yeah. So that's, uh,

Steven Bruce
I can do the rifle was fine. Because it's a one. It's a one I exercise. But with a shotgun. I'm looking across it the wrong way. Because

Matt Wallden
yeah, so. But all of these dominance is can affect obviously, you know, will affect the function of the body and how we use them. And of course, if you are someone who is a marksman or a cameraman, and you've got an awkward way of holding the gun or the camera, then that's going to have more profound effect than the average person.

Steven Bruce
Look, let's get back to football. Here. We're gonna see our model. Let's go see

Matt Wallden
Jack. Yes, yes.

Steven Bruce
I'm gonna take my questions when we go along. Alright, fine. Get it off. Good. Camera work on but didn't really. Right. So Matt, this is Jack. Hi, Jack. How you doing? Jack has a footballer we've learned earlier on this evening.

Matt Wallden
Yes, yes. Excellent. Okay, good. So. So I'm going to just demonstrate a test that's fairly well known clinically, which is an active straight leg raise test. But what we want to do in this test, is you want to watch how the umbilicus behaves, okay? Now, when the patient has their hands down by their side, they can cheat the test a little bit, not that they know they're cheating it. So it's not they're not actually cheating, but but they can compensate more easily. So it's better to have the arms across the chest, if you just put them across it. Yeah, that's, that's perfect like that. So I can still see Jack's umbilicus. And what I'm going to ask him to do is, can you just pick your leg up on the right side, just right the way up, all the way

up like that, and then back down. And of course, if there's any pain or discomfort, then you stop or you can feed back to us. But really, what we're interested in here is what the umbilicus does, as Jack lifts up, so then, can you just pick up the left leg now? Okay, and back down. And then we'll do the right leg. Again, we'll just do this a few times through, okay. Because what you want to do is first of all get get a sense for what's going on. But also you want to see what happens as they fatigue a little bit

Steven Bruce
you watching for the umbilicus movement itself and for the body rotating?

Matt Wallden
Well, they're, they're almost one in the same thing, really. So so I don't know if you can see from where you are. But the umbilicus is moving a little more to the right as the right leg goes up. Okay. Now, of course, the minute you say that, but it's difficult to control. And so but yeah, it is more obvious that Jack's got better control as it picks up his left leg. Okay, and a little bit more movement on the rally. But actually, overall, it's got pretty good control there. You know, a lot of patients you'll see, I would say, I would say, in Jack's case, it's perhaps somewhere up to a centimetre of movement, perhaps, but just below a centimetre of movement, but you will see a deviation of up to two or three centimetres, sometimes

Steven Bruce
I'm not sure if we got that on the overhead cam. Okay, just can we just run through that very briefly again, so we actually,

Matt Wallden
so that's the left leg going up there. And then the right leg going up here? Okay, Jack's doing pretty well. Now. Just just check if you just keep, come back down and rest. I'll put my finger here. And you just do that again. Okay, and then just switch slides. That makes it a bit more obvious, I think, yeah. Yeah, I'm trying, I'm trying not to chase him by moving my finger. But that that should show you there's a bit more deviation to the right-hand side as the right leg goes up. So what we don't know at this stage is what does that mean? What it does seem to mean is that there's probably some something going on in this anterior oblique sling from the left shoulder to the right hip.

Steven Bruce
Now, he's not going to have come to you and said, Matt, look, my umbilicus goes the wrong way. Whatever. He's coming to you for what reason?

Matt Wallden
Well, so he may come to me with low back pain. Yeah, that's quite a common situation. Because this basically, if we carry on with the story a little bit, this sling that runs across from the left shoulder to the right here, is helps to stabilise the right hip. Okay, so and the right side of the pelvis. So if there's any kind of inhibition in this sling here, then we're much more likely to get sacroiliac joint issues on this right side. Okay, we're much more likely to get an anterior pelvic tilt on this site, because that sling isn't doing what it's supposed to do. So that pelvis can go into an anterior tilt. Now we're just talking about for some form closure. This is part of the forced closure mechanism. It's when it contracts, it posterior rotates the pelvis. And as it posterior rotates the pelvis that creates form closure. So, as that right side of the pelvis rotates backwards, the ligaments string tight. And that's the form closure, right? But it's the muscles pulling it backwards. That is the forced closure. Okay. Okay. So this is part of the forced closure. And so I would expect Jack would have a higher risk of having right

sacroiliac joint pain. Okay, now, of course, it doesn't mean he's going to get it. But if he did have, if that's what he came in with, then I'll say, Okay, this is assuming that we should work with.

Steven Bruce
Is there a danger though that if he comes in and he's already got it, that you're gonna get a bit of a false result from this, because he will be compensating in some way because he's got

Matt Wallden
the pain, there is that possibility is always always that possibility,

Steven Bruce
should always get our patients in before they've had any pain and record the result.

Matt Wallden
That's well, that's that's the ideal, isn't it? And that's what should be happening, particularly in professional sports. But, but so then, this is where, you know, it becomes, I think, you know, even more profound is that with that anterior oblique sling, if that one is inhibited or weak, then that right so the pelvis can rotate forwards. And that means that as the pelvis goes into an anterior tilt, the right leg roll into medial rotational instability. Now, did you say your left footed? Yeah, yeah. So that's, so this is actually the opposite way round to the way I would expect it most commonly. Because I would normally expect because Jack kicks with his left leg, I would expect that this is probably the sling that would be weaker or inhibited. And he be stronger through this sling Do do you have? What hand? Would you throw with? Right? Right hand? Okay. So you throw the right hand. Yeah. So that's, that's possibly why was, you know, so if you were left-handed and left footed, then I think we probably would see that swing, unbalanced the other way around. But, um, so another part of what we want to discuss is, you know, is it the external oblique coming down here, that's an issue or is it the internal oblique below? That's the issue, or is it both. And, of course, we don't know whether it's the internal pulling too hard. And therefore creating this, this deviation in that direction, or whether it's the external oblique and the external intercostals, which, of course, are one of the same thing that are inhibited and weak. Okay,

Steven Bruce
so I'm just gonna be really boring and say, can we just do that demo once more? Yeah, we'll get the PTZ camera on it. So what exactly is happening? So?

Matt Wallden
Yeah, so do my thing. Okay. So this is picked up that right leg? Rocksteady pretty good, and then pick up the left leg. So that one, stay more central? And then right, like, there's more move now we're getting Yeah.

Steven Bruce
Okay. Thank you.

Matt Wallden
Okay. All right. So. So that's one way to test it. Very simple one, we can you know, anyone can do on the treatment table. But we can also do a test on the Swiss ball. So is that something that we want to do right now?

Steven Bruce
Yeah, let's do. One question is coming from Scott. He says, are you familiar with beevors? Test or inequality of abdominal muscles?

Matt Wallden
Beevors? Yeah. No, he

Steven Bruce
No, no, no, I've not heard of that. Well, okay. Right there. In which case, Scott, we need you to send us in something about beevors. Sounds like we can talk about that. Yeah. Okay. Because all it is.

Matt Wallden
Okay. Excellent. Good. All right. So I gotta go. Yes, please. Yep. So Jack, if you want to sit up for a moment. So what we'll do if you stand in front of the ball, and just sit back down with the ball there. And what I want you to do is just to slowly walk off forwards and lay back onto the ball as you go. That's great. It's just the shoulders are taking the weight and your hips rested down. Okay, just lift the hips up a little bit, there you go. And if you can put your arms out to the side. That's excellent. Now what I'd like you to do, the best place to assess is to actually stand at the head end again, if you can just move out towards your right hand side. Okay, now what's happening here is as Jack moves out, that's loading his anterior oblique sling through this side, because gravity is trying to drop your shoulder down. Now let's have you move back. And we'll go the other way. Okay, so now it's more loading the centre brings things so let's do that a couple of times. Just go at your own pace. Whatever feels good to you. Rest your head back a little bit so you don't get killed testing because we're still testing because we want to see, you know, how well he maintains that that umbilicus as he goes side to side, but also this test the posterior oblique sling, because what's happening here is as Jack moves off to this side, his left glute and his right lats are involved in pushing backwards. And here is right gluten, his left lap. Okay, so he's maintaining pretty good control of the umbilicus in that direction, gradually rotating. Yeah, he's getting much more shear in this direction, okay, so that's against the left shoulder to the right hip, anterior oblique sling. So just kind of confirms what we're seeing. So if you want to walk back up to the top here. So, you know, we can also look at what's going on in the pelvis is he dropping through one hip more than the other. And that tells us if this posterior oblique sling is contributing as well, which I didn't particularly see there. But I think I think, possibly there was a bit as he went off to this side. But essentially, what you're looking for is is, is that umbilicus in that sternum staying aligned as they move across from side to side, and what you'll often see is there's a kind of like a torsion that occurs on one side and with jackets as he went across his left sides. And because his left shoulder is off the ball, what's happening? If you mentioned the balls directly behind me, if I move off to the left, then gravity's try and drop me back that way. So I have to activate this sling to stay aligned. Yeah. So that's the one so so both of those tests, you know, consistent with each other, that there's something that needs needs working on in that left shoulder, right, hit enter oblique sling?

Steven Bruce
And how are you going to do that?

Matt Wallden
Okay, so well, you can do those exercises. But of course, part of the issue is that we know, Jack can't do them with good form at this point. But he may be able to, if I cue him,

Steven Bruce
it also could be presumably quite difficult to do those with good form. At home, he hasn't got some of us watching what he's doing. And he might not be aware of what's happening on the board.

Matt Wallden
Exactly, yeah. So there are things you can do. So one thing that we would encourage patients to do is to hold a dowel rods, like a six foot dowel rod, just to so they got an awareness of what the shoulder girdle is doing. And you can rest a foam roller across the hips and move across sideways. And that actually just gives you because you're laying back like this, you can just see the foam roller. And you can see if it's deviating forwards, or, or backwards. So that's that's one way that you can adapt it for the home environment. But let's get you back up on the treatment table here. Shall I roll that over there?

Steven Bruce
Oh, sorry, it's my job in the camera crew will go to rats actually do it for real.

Matt Wallden
So it's gonna roll back in, it's gonna roll back into shot. It's like Indiana Jones. So basically, what we know is that lifting the leg up straight, is overloading Jack's abdominal wall in terms of him being able to keep symmetry there. So what we can do, let's bend the knees up, Jack, and let's just have them. Yeah, so here's a quite close to your buttocks. Now what I want you to do now, just try picking up that right leg again. Yeah, and in fact, what I want you to do is bring that back down, just just bring it up, leave the foot down, just bring the thigh up to here. So if it comes off the table, and then back down, okay, and we do the same on this side, and then back down,

Steven Bruce
you might want to demonstrate these, so.

Matt Wallden
So on this side there and back down and see how umbilicus there is actually so I'll do the I don't know if we can get the overhead shot again, but, but just try pick up the right leg, see the way that's way better control now. So this is a good level for Jack to work at. But what I would say is right, Jack, I want you to do a right, right left format. So you go right side up and back down, right side up, and back down. And then left side up and back down. So now you're working the two slings, but you're biassing it to the right side. So you get getting more conditioning through this sling. So that's one way that we can come work with that. Another way is the classic sort of four point exercises. So Jack, if you turn around as if you're crawling, but on the table there towards me. Okay, that's perfect. Yeah. And just so if Jack, if you pick up your right hand and your left knee, so you're just yet not even very high. Just put them back down on the table. Do it so that you imagine if I'm going to slide a piece of paper underneath, underneath both Yeah, that's it. That's perfect. And so what that's doing is that it's now loading the posterior oblique sling here, although not too much, but it's really learning this anterior oblique sling here. Okay, so that's working left shoulder right hip, which is the one that we want to work and then we switch sides.

Steven Bruce
And should we be concerned about spinal neutrality and all of this?

Matt Wallden
Well, this That's it. Yeah. What you really want to do is you want to have again a dowel rod on here and actually you know, I know you're you're very kindly almost promoting my neutralizer device. But actually a dowel rod is better for this than it said the neutralizer will sit on the spine. You can relax now for a moment. start to sweat maybe more. I mean, it may come back to that in a second but but the thing with the neutralise gets flat, it will it will stay on the back as the person lifts you If they've got quite a lot of torsion going through their trunk, whereas with a dowel rod because it's round, it will roll off the minute that you start to deviate. So dowel rod is actually better for that exercise when you're trying to learn the technique and get the two girdles sort of rotating in the transverse plane.

Steven Bruce
I kind of just ask, Dee said that he or she is struggling with this. Is there evidence to support this? They've read a few authors now and most research cast doubt on these upper lower crust syndromes. Most researchers their view not Yeah, yeah, certainly mine.

Matt Wallden
Yeah, the so what do you want to talk about that here? Yeah, I mean,

Steven Bruce
as you clearly think there is evidence behind it,

Matt Wallden
where it's a little bit like say, it's standing there, you know, with one shoulder up and saying, Is there evidence that my right shoulder is up? It's like, well, if you look at it is there you know, so it's kind of like, come on. So, but you can argue for how relevant that is. And I think that's more more the case. What I've seen as I've seen people talking about posture, but also the muscle imbalance syndromes and saying that they don't work or that there's not sufficient evidence to support them. And what they're doing is they're taking, I think it's important to understand how yonder came up with the muscle imbalance syndromes in the first instance. Because what he did was he made observations of hospital patients. And he found that these muscles, certain muscle groups tended to shorten and tighten when people were undergoing bedrest. Okay. And that essentially, is what drives and Upper cross and lower cross syndrome. It seems tied back into infant development and into muscles that have a higher preponderance of tonic fibres to phasic fibres. But in the general population, you still find these muscle imbalances, but they don't tend to reflect what yonder found because he was working in a hospital setting. And in the ambulatory population, you get way more layered syndrome, which is this kind of pink panther type posture, as opposed to the Donald Duck, lower cross, which is what you tend to get in hospital hospitalised patients.

Steven Bruce
But so I like your terminology

Matt Wallden
is of a certain era, if you talk to young people about Donald Duck and Pink Panther, they often don't know what you're talking about. But but the the point is that then yonder, you know, made these observations, put them into tables and said also the psoas is it's a tonic muscle and the rectus femoris is a tonic muscle and the hamstrings phasic. And then you get people arguing, well, actually, you know, the hamstrings have tonic fibres, and the the psoas has phasic fibres, it's kinda like, well, what yonder was trying to say was there was a trend. And this was his observation, I'm sure he knew full well that every muscle has both

tonic and phasic fibres, and that they can behave either tonically or physically. But it's how you use them determines how they end up behaving and how the fibres within the muscles migrate towards more tonic or more phasing. So, you know, you can make those kinds of arguments, which I've seen quite a lot, I've seen also people talking about how, you know, someone with a lower cross syndrome, which is where the glutes, in theory are weak, can still have strong glutes. And so as if that proves that there's no such thing as a lower cross syndrome, and so well, first of all, that doesn't tell you anything. But what it does tell you is that that person can actually engage their glutes when they're asked to, but doesn't mean they will hold them engaged. And it just really shows a fundamental misunderstanding of muscle fibre physiology, and how muscle recruitment works in postural settings versus movement settings.

Steven Bruce
Hope that satisfied the question. Yes. Yeah.

Matt Wallden
I mean, it's something I could dive into in some depth, but

Steven Bruce
Okay, so we're gonna do some more research as well. So

Matt Wallden
I mean, maybe if we just go back to that four point position, I won't leave you there for too long. But so again, with Jack, probably just bring your hands like that. That's it. And imagine this sliding, sliding the piece of paper under this hand and under that knee, okay, so now because the right hand and the left leg are the loaded ones that's working the anterior oblique sling between right shoulder and left hip. Okay, so that's the good side. So the side that we didn't see a deficit and so then we switch sides. Yeah, so, so yeah, that's it. It's tricky, isn't it? It is tricky. Okay. And do you find a difference between the two? Slightly? Yeah. Which one do you do you find more challenging? The other one, the other one? Yeah. So that's not again, it's not what what you'd expect, you know, can't get the patients these days. So,

Steven Bruce
we should emphasise he didn't come in here with a problem.

Matt Wallden
So what you can do is as the therapist you can watch what's going on at the spinal end and see there's quite a big scoliosis occurring there. Let's switch sides. And this side, there's more rotation and more training. As I was playing through through the pelvis, less less scoliosis, less less frontal

Steven Bruce
check, you shouldn't be worried about maintaining, you got scoliosis, it's just, it's just curving in the spine as you move it.

Matt Wallden
Yes, that's a very good, very good point. Yeah, it's not a problem scoliosis is yes, normal. Okay, and come back. Okay, so. So the point is by watching how they stabilise during those movements, you can then start to, you know, either make the movement more challenging,

or make it less challenging. So in that case, without any other kind of feedback, like, like a dowel rod, that's, that's not going to help.

Steven Bruce
There's no way on earth, we're gonna bounce a dowel rod on his back at the moment. Because he's got his head up and his backs rounded, it'll be balancing on that point there, and it's just not gonna stay put, yeah, yep. So we're gonna have to coach him into a more neutral spinal position, sort of slightly head forward position. And

Matt Wallden
so So you want me to do that, or you want to do that. So well, yeah, what I would do is I'd ask you to tuck your chin in. So imagine you're looking at a clock down there or watch, keeping your chin tucked focused on that, I want you a little bit further forwards, as in with your hands. And so your thighs are more vertical and set. And then I want your chest a little higher through here. So lift through there, keep lifting there. And then I want you to imagine you've got headlights shining out of your buttocks, and you're shining them up towards the ceiling. There we go. That's it. And that's fairly neutral. Now, just a little bit more through there. That's good. So that's a much better start position, you had a better a better angle on it. From where you were. But um, but so let's, let's try that in that new position. Let's just try picking up left hand, right knee. Okay. Good. And that's, that's definitely better. Let's just go the other way. And that's, that's better as well, I guess, then I'll give you a job.

Steven Bruce
Someone's gonna ask how many times should you be doing this and how frequently.

Matt Wallden
So the reality with anything like this is that because we're talking about postural fibres, you can relax now Jack, we want to hit three to five minutes of time under tension. So if if Jack's doing 10 seconds on one side, and let's say we're trying to work this sling from from the left shoulder to the right hip. So we might pick up the right hand or the left leg, which is going to work that sling might do that for 20 seconds. And then we do this one we did for 10 seconds. And we do this one for 20 seconds, this one for 10 seconds. So now we've got a minutes worth of work time and attention for the whole exercise, but only 40 seconds for the sling and 20 seconds for that sling. So really want to do another rep of that. And that takes up to a minute. So if we can hit the minute in any given set, that's generally quite a good target, then you can have a very short rest, but it's got to be about a 32nd rest, it can't be more than a minute. If you go beyond a minute, the type one fibres, the postural fibres completely recover, you don't really get a training stimulus, right? There's got to be about a 32nd rest, and you do the same thing again. Okay, and this is

Steven Bruce
much what you discussed in a previous session,

Matt Wallden
relax talking about maybe sit back. Yeah, exactly, exactly. So. So the the point being that if you if you do too little time under tension, then you're not getting the adaptive stimulus on the type one fibres for them to essentially become more facilitated more conditioned. And and so, you know, this is one of the big issues that we talked about with core stability research is that most people do 10 times 10 seconds, which doesn't target those fibres effectively.

Steven Bruce
Well, and we've talked about this with so many speakers, this whole business, particularly Claire Mitchell, who she's wonderful in talking about rehab exercise. But this whole business, oh, yeah, we just do 10 reps, always do 10 reps, and it's the same the same weight on both sides. You know, it's not really being very bespoke to what you need. So, we did talk about this before, I can't remember which of the boards was was it the one we did, which was the math of course, stability? Yes. It was the response to a a letter in his paper. The myth? Of course, yes, yes. Yeah. And yeah, and that will be a good one for people to go and look at if they want

Matt Wallden
to get Yeah, exactly. It would be a good one. Because, you know, one of the one of the big issues when people talk about core stability, or motor control not being effective is that they'll point to, you know, the specific studies or or meta analysis which show that, you know, it's somewhat ineffective or is only as effective as manual therapy, that kind of thing. But when you look at the design of the studies, they're not hitting the right target tissues. They're not taking into account visceral somatic reflexes. They're not even assessing whether or not the person needed the cost ability in the first instance. So this was something Diane Lee spoke about on my podcast when I interviewed her so she's the sort of physio from Canada has renovated textbooks and helped run the World Congress on low back pain and she He said, The opening speaker at the last World Congress did a study which essentially showed that core stability doesn't work. And she put her hand up and said, Wait a minute, did you actually assess these patients if they needed core stability? And they said, No, they just had low back pain. And she's like, well, you know, there's like 100 different ways you can work on core stability or motor control. And you've got to identify what your client needs, not just give them a, you know, a random set of exercises. And this is part of the issue at the moment is that there's, you know, this sort of debate and infighting about it all. So yeah,

Steven Bruce
so we're going to do more with I think released into the wild,

Matt Wallden
I think I think for now we can can release him but you know, I, I think you were saying you had a meniscal injury. Now that was on the left side, was it? Yeah. So again, doesn't fit with with this middle cross pattern. So if you were to ask me to guess which side just having done these two tests, the Swiss Ball test, which is called a supine lateral ball roll, by the way, supine lateral ball roll, and this is called an active straight leg raise test, I would guess that that would be more predisposed to injuries on his right leg. Okay. Now, we haven't looked at him walk. We haven't looked in run him jumping isn't lunge, you know, or any other movement patterns. And, you know, if we did that we might change our mind and maybe think that it'd be the left leg? That's, that's more vulnerable. Yeah. Okay.

Steven Bruce
So people wanted to take away stuff that you're talking about this evening and use it in clinic? Yes. Do they need to look up something else that they can do all these other tests? Or is what you've shown them here? A good marker for?

Matt Wallden
I think these two tests are a great way to identify which links systems are compromised, the exercise is a good way to start to address those things systems. And then really, it's just clinical application. And I think you can apply your own clinical reasoning and knowledge and

anatomical knowledge. And you know, have a play around with it yourself. Or, you know, you can get your iPhone set up and do these tests on yourself and see what your umbilicus does, and then see if that, you know can be corrected by doing an exercise programme, but you can overcorrect. I've had patients that have started out with umbilicus deviating one way and six weeks later, they come back and it's deviating the other way. Okay. So you do have to reassess. So I wouldn't just say, you know, in your parlance, send them out into the world. You know, I mean, that, you know, I would, I would say, okay, so we we send them out for X number of sessions or X number of weeks, and then obviously, reassess and

Steven Bruce
interesting that, you know, you got patients who won't do your exercises, and then there'll be the others who will say, Well, yes, I'm gonna overcompensate by doing much, much more on

Matt Wallden
Yeah, exactly. It was weak. Yeah, yeah, exactly. Especially athletes.

Steven Bruce
Like, there you go. I

don't know about beavers sign. Yes. Yes. Sign. Yeah.

Steven Bruce
I don't know who sent this in. It's a bit of Scott says, beaver sign is done with a patient supine, slowly, flexing, flexing the ABS with the neck and head coming up about 20 centimetres, the inequality of the muscles is easily shown as in both the sides and the upper and lower abs. Because of the umbilicus moving into the strong area, okay. I think I see what you're saying there. Okay. Yeah,

Matt Wallden
yeah. I mean, you know, there's there's lots of talk of, of umbilical movement in motor control in general. So, you know, with things like transverse abdominus activation, sometimes you'll see that the umbilicus deviates, one way or the other. And, again, that's often a sign that one side is more facilitated. And once I was more inhibited, so then the question is, is it inhibited by pain, so you've got sacroiliac, joint pain on the left, that is going to inhibit transverse abdominus on the left, more likely than than transverse on the right. But similarly, if you've got constipation, you know, in the descending colon, then that's slightly to affect the left transverse abdominus. Whereas if you've got appendicitis or let's say, a grumbling appendix on the right, or some kind of issue, you know, with a liver on the right, that's more likely to affect the musculature on the right side of the abdominal wall. So, you know, we want to always think about the gut health as well as and, you know, and the other joint health as well as what we're actually seeing with the muscles. And what

Steven Bruce
about postpartum ladies Johnny local, who's also known as Kim says, you find women who've had difficult childbirth are more likely to have a problem due to uncorrected uterine prolapse.

Matt Wallden

I don't speak from experience specifically to that point. I mean, clearly, there are issues with with motor control following complicated births. diurnally actually, again, it's got a great book on this and she's she's put together. I think she relisted about four or five years ago, and she's got all of these QR codes. So you can actually go in and look at, you know, bias stasis wrecked I and you know how her various assessments of that what the ultrasound looks like on that all this kind of thing? So I would say for that kind of specificity of question, that's where I would go to to find that the response, but I

Steven Bruce
can we might follow up on that actually ourselves because we've we've been asked by several people to talk about testators Recognise Oh, yeah,

Matt Wallden
that's a brilliant speaker. So I don't know if she's in Canada, but you might be able to arrange it because she'd be. Yeah, yeah. Was timing. Good work?

Steven Bruce
We'll see what we can do. Yeah, yeah. I'm told that a few people have asked Is this more useful, perhaps after an acute problem is resolved? As more post treatment management for patients we have helped to recover? And then they want exercises or advice to help prevent issues post treatment? Obviously, I haven't seen this question before. I'm not really

Matt Wallden
Yeah, I think I might suggest a bit. Yeah. Yeah. So I think I think it is important in preventative work, you know, after someone's had an injury to stop in recurring, that's for sure. You know, sort of one of the things that piqued my interest in this as well, as was working in football, one of the stats showed that 55% of injuries occur to the dominant leg, the kicking leg 45 to the non dominant leg. So in a way, you would think that the leg that's taking most of the load, which is the standing leg should have more injuries to it, it's more likely to have a foot planted and be taken out, as you're about to strike a ball, for example, you're going to jump off of it, you're going to put huge loads through when you when you strike a football, see, we think you get more injuries on the standing leg, you actually get essentially 10% more injuries on the kicking leg.

Steven Bruce
But doesn't that make perfect sense? Because if I didn't have much weaker they would be but if these muscles are slightly weak, excuse me. And as I understand it, I don't know how they work this out. But a lot of the injuries occur through not through the use of the muscle as a as an agonist, but as a as it slows the leg down. And therefore you're putting this sudden force through the quadriceps that say that it's the hamstring, which tries to slow the leg down. So you snap your knee. Yeah, but it's slightly weaker than the other side. And the other side is not doing that anyway, cuz you don't kick with that one. Doesn't that make more sense?

Matt Wallden
Yeah, I know exactly what you're saying. Because that's, that's what I described with the hamstring syndrome, you know, and how I read it somewhere. Yeah, it's because the hamstring said at the rate limiting factor in terms of how fast you can accelerate the knee. Because if you if you, if you can't decelerate the knee as fast as you accelerate it, then essentially you crash into your cruciate and you damage the cruciate and the knee joint capsule itself. So So, but in terms of in terms of injuries, you know, I think there's there's an

argument for why the kicking legs more likely to get injured, because you know, kicking is not normal physiological thing to do, whereas standing or jumping is, you know, we didn't evolve to kick. But we did evolve to run and jump and, and all of those kinds of things. So, so I think there's certainly an argument there.

Steven Bruce
But in what you were saying, you said that the kicking leg is more likely to get injured but is that just that specific sort of injury is the standing leg more likely to suffer so meniscal tear because of the

Matt Wallden
root? Cause? I think it was, it was overall injuries across the season in the Premiership, if I recall the paper or the presentation, I got that from. But so the, I suppose, I suppose, in terms of thinking about the middle cross syndrome, if it's, you know, say most people are right footed, so you end up with more right leg injuries. And most of those people will have a weakness or an inhibition from the right hip to the left shoulder. And you know that there are other sort of discussions as to you know, why the right side of the pelvis is more anterior as well, I've heard people talk about the liver being a factor and it weighs more, and the fascia somehow pulls the pelvis anterior on that side, which I'm not convinced of it as a narrative. But this inhibition, you can see it in your clients, or your patients. And that's what actually holds the pelvis in place. So I think the this sort of combination of those clinical observations, that sort of physiological rationale for how the body activates those muscles in this kind of process of facilitation that conditions those muscles, and then they figure that you're getting more injuries through that leg, because you can't control it as well, because Because essentially, you've lost the core function that stabilises that leg. So, so then you end up with more of a medial rotational instability pattern on this on this right leg. So essentially, a pronation pattern. And, you know, of course, the traditional pronation discussion is related to you know, orthotics and stopping the foot from rolling over. But really, as we've discussed before, When you look at the way the musculature is set up, the bulk of the musculature is always up towards the core. Okay, so in any animal, as you go more and more distal, the musculature gets less and less and less. So you can't expect a little intrinsic muscle in the foot to stop pronation, it's the glute max that's going to stop pronation, it's the is the core slings that are going to stop pronation. And so if this sling isn't working properly, this left shoulder right hip, anterior oblique sling, the pelvis is gonna rotate and rotate anteriorly, the legs gonna roll in, you're gonna get over pronation through that right leg. And sure enough, when you test for that, that's what you tend to see in a right footed player is that they're very stable on their left leg, but very unstable on their right leg. Right. So it all kind of ties back into the original discussion of why they learned to kick with their right leg in the first place.

Steven Bruce
Indeed, yeah. I don't know, this might not be relevant to what we're discussing this evening. I'm interested to hear excuses as to how you would manage a frozen shoulder. Well, yeah, I mean, it affects the sling, doesn't it?

Matt Wallden
Yeah, then this is the thing is that because the slings connect the legs to the or the pelvic girdle to the pectoral girdle, then any issue at the shoulder is going to affect the sling, and affects the opposite leg, the opposite sort of lower limb. But it could work the other way around. So you could have an issue in the lower limb that ends up affecting the the arm. So this is where you know, when we're looking more holistically at the body, if you've got, like any injury history in the leg, or some kind of lack of range of motion in the leg. And if you had

someone that's doing CrossFit, for example, and they're doing lots of snatches, so they're driving through the legs, or throwing their arms up, and perhaps they're not driving so well through the right leg, well, then that could end up with them having to over recruit the opposite arm to get the bar above the head, or the dumbbell for using dumbbells or kettlebells, or whatever it might be. And so I mean, that's just a sort of hypothetical on the moment, example. But because this is what connects the two limb goes, and power always starts from the ground upwards, it's all it's always generated from the ground upwards. You know, we push off the ground to generate the power, and it transfers up through the pelvis, through the leg into the pelvis into the arms, it's normally expressed that the arms unless you're kicking, in which case it comes up through one leg, and it kind of wraps around the trunk and comes out the other leg. Right, right. But in most cases, whether you're throwing a punch, throwing a ball hitting with a racket, wrestling with someone that is power that's being generated from the feet, up through the core and into being expressed out of the arms, which kind of ties back into Gretzky's whole spinal engine concept, where ultimately, the ground reaction force coming up through the spine is dissipated out through the arms. And it's almost this this sort of movement of the arms, that is the final expression of that ground reaction force.

Steven Bruce
So none of this is going on with a frozen shoulder, no kettlebells, or being thrown up or anything like that. Well, so does it affect your management of conditions like that?

Matt Wallden
Yeah, I mean, so So someone's got a frozen shoulder, then, of course, I'm interested in in the shoulder locally, but I'm interested in the sling systems that are affected by the shoulder or that are affecting the shoulder. I mean, obviously, frozen shoulder, there's a lot of other factors, systemic factors that you want to look into, relating to inflammation in particular, and rheumatoid arthritis and so on. But But yeah, I would be looking at the way the whole body functions. Because if you've got, if you've got a dysfunction in the hip, it's going to be reflected in the opposite shoulder. And vice versa.

Steven Bruce
Yeah, and it's interesting, you probably know that spurts, we've run a lot of courses with Simeon Neal Asher about frozen shoulder. And of course, he made quite a name for himself in treating frozen shoulder and then still has a name for it. He's also discovered that the treatment protocols, patterns that he uses for the shoulder work just as well on the hip. Yeah. And it may just be the similarity of the joint. It's, there is a definite connection there, isn't it? Yeah, it

Matt Wallden
makes perfect sense, isn't it? Because, you know, they have very, very similar patterns. And obviously, if you think of it from a evolutionary perspective, then you know that they're pretty much the same set up and you know, when you're in that four point position, like we just saw with Jack, that's when the shoulder and the hips are in there, close back position. So anyone with shoulder instabilities or motor control issues at the hip, or the shoulder, shoulder shoulder, but yeah, in that four point position, that's where the joint against and it's close packed position. And the reason it's close packed positions because we have always quadruplets. Right so Okay, so actually the tabular was most pronounced in the posterior aspects. The, the shoulder, when it's in that position, you've actually got the scapular reaching around the, the thoracic wall. And so now you've got actually a kind of direct load bearing surface for the humeral head to work against. Whereas when you're in a upright

position, it's pretty much hanging out the joint itself. So yeah. That yeah, there's a lot of fun. What do they call it? It's not a homology, it's an allergy. And so they're very analogous. Okay. Yeah.

Steven Bruce
Probably the final question when it comes to he says, How does what you've been talking about differ from DNS, stabilisation rehabilitation?

Matt Wallden
I don't know, I'm not an expert in DNS. I've done two of their courses. And I, prior to DNS becoming a thing, I'd learned a bit about voices approach. And of course, Reuter was Carlos, mentor. So colour, Oh, okay. Well, I say I say of course, but so you know, we talked about yonder right at the beginning and as the wet or live it, depending how you pronounce it. They were all part of this group prog and Voyager was the guy that worked with all the infant development stuff. And they work very closely together, develop their thinking around how tonic and phasic fibres differentiate how that leads into muscle imbalance syndromes and so on. And Pavel Kolar, I think, is hoping that's his name, who developed DNS is the protege of Reuter. So, so I don't know exactly how it correlates, because I've not really done the DNS training to any great depth. But

Steven Bruce
do you see a crossover and overlaps? Or I should say, Yeah,

Matt Wallden
I mean, there's bound to be an overlap. I don't know what those guys say about laterality pattern. So I mean, I, I'm aware of them using these reflex locomotion points and infant development, understanding to help rehabilitate, which I'm totally on slide with, I think that's really good. But I don't know what to say about literality No, that didn't get to that part of their training. So

Steven Bruce
you know, I've said this before, when you've been on the show, man, I'm absolutely overawed by most of the people who come in here, because you just don't I ask you a question at random like that. And you pull out all these names and references, and you know, the evidence and everything. And I just can't believe that people haven't thoroughly enjoyed this evening. And we are at the end of the evening, we had 521 people watching this evening, that was a pretty good number of SLA. So I should urge them all not to watch your podcast because I don't want to drive my own business direction. But when you started your podcast again,

Matt Wallden
well, I think it will be around the middle of the year. I mean, I've got a couple of things to get ironed out before that, but I've got about 26 episodes. And these are just the ones that I've done. In the first instance, were just auditory, there was no video. So they're just interviews. But I think when I read launch, I'll have the video component, which I think is more standard. Now in podcasts, you've got the option to watch the discussion, as well as to

Steven Bruce
hear I'm not quite sure how much success I wish him in direct competitors. But

Matt Wallden
it's not it's not, it's not gonna be the same as this, obviously not as professional as this.

Steven Bruce
And, yeah, just to remind people, your website's Matt waldman.com, which was they're gonna find all this information, isn't it? Yeah. Are you running any courses in the near future?

Matt Wallden
Well, I've got a plan to run a middle cross syndrome course later in the year. But it's not up on the site yet. So what I'm actually currently doing is, is looking at doing a revisitation to the middle cross syndrome, partly off the back of this group from Tehran doing their research. But partly is because I've got new insights since I wrote that paper in 2014. So

Steven Bruce
yeah, and where will you do well be an online course? Or is that going to be you know,

Matt Wallden
that will probably be an in person course, we won't be able to do it. So we can combine it. If people can't get there, they can watch. But it's I think it's much better to feel this stuff and to see it, you know,

Steven Bruce
you can get lots of cameras to film this and so on stream it online. Maybe we could do that and watch some. Yeah, that'd be great. Yeah.