



Middle Crossed Syndrome - Ref 285

with Matt Wallden

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TRANSCRIPT

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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 guest, 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. Matt is of course, an osteopath. He is someone who writes regularly for the Journal of Bodywork and Movement Therapy. In fact, he's an associate editor of the journal as well. And what he doesn't know about biomechanics could be written on a Post-it label. Matt, it's great to have you with us again.

Matt Wallden

Thank you very much for having me back.

Steven Bruce

What's been going on? We haven't seen you for a little while, have we? We've been trying to get you here for ages and had to postpone your last time because I had a COVID positive test and all the rest of it. What's going on in your world? You've got a lovely new website, mattwallden.com.

Matt Wallden

Yes, that's right. 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 Chek's latest book, Paul's the guy who runs the Chek Institute. So he's writing a book.

Steven Bruce

Remind me what the Chek Institute does, because a lot of people won't know.

Matt Wallden

The way the I normally explain it, as a quick version, is that it's like an interim between strength and conditioning and manual therapy. A Chek 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 also a kind of physical, emotional, mental, spiritual view of the human being.

Steven Bruce

And it's spelt C, H, E, K.

Matt Wallden

Yeah. And so what Paul has been doing is writing a book called Spirit Gym and his notion is that the world is a gym for spirits, and the world presents resistance to us and that's our kind of spiritual work to do, to work against that resistance and overcome it, so that we become stronger.

Steven Bruce

Sounds very mystical.

Matt Wallden

Well, it sounds it because it's got the word spirit in it, but it's very practical, I think as well. But that's obviously taking a fair chunk of time as well.

Steven Bruce

Last time we were in the studio together you were talking about doing your own podcast lessons or online lessons.

Matt Wallden

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

Steven Bruce

It's always astonishing how much time it soaks up when you do it 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 with 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 podcast. But my goal is to relaunch that this year, 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

Oh come on, no one has ever finished their website.

Matt Wallden

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

Steven Bruce

Middle crossed syndrome. Am I the only one who doesn't know what the hell middle crossed syndrome is?

Matt Wallden

No, not at all. I just made it up.

Steven Bruce

But you made it up in 2014, and wrote a paper about it?

Matt Wallden

Yeah, 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 handedness and footedness were probably quite important in terms of patient's pain patterns. A

Steven Bruce

And middle crossed syndrome goes with handedness and footedness?

Matt Wallden

It does, yeah. So essentially, laterality is the sort of umbrella term for those two. But I suppose before I did the Chek 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 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 that I was seeing. 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

It's true isn't it, generally, if you talk about footedness, I mean, the image that springs to mind is of a footballer who always kicks with the same foot or whatever. But also, if you're right footed, you tend to take the first step up the stairs with your left, I believe, don't you?

Matt Wallden

That's right, yeah.

Steven Bruce

I don't know whether that makes any difference, because obviously, you still got the other stairs to go up. But if 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, this is something I think many people, even manual therapists get wrong. They think that if you're right footed, 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, or the arms and legs, is that the legs are in the closed chain, we use primarily in the closed 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. And so we would tend to select the hand that we're most coordinated with to pick up a bag, for example, and then we get stronger in that arm. And so 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 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. And so then they 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 one that's more stable and that's why we jump off of it. Typically. Again, these aren't 100% patterns, but there is the trend towards a right footed person will tend to jump off their left leg if you get them to do a long jump or a high jump or something like that.

Steven Bruce

I'm going to take you back a few seconds there, because I imagine that pretty much everybody knows what you were talking about here, and you did explain it in passing, but closed chain means that the joint's already load bearing when you actually exercise the muscles?

Matt Wallden

Yeah, the simple way of thinking about closed chain and 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 push away from it. Or if you had a chin up bar, and 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 that's light enough for you to 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 bench, which is open chain, or you could be doing squats getting the same sort of results, but that's closed chain.

Matt Wallden

Yeah, so there's research into this. And in fact, you can do your own sort of N = 1 research straightaway here and now by just palpating your quads and your hamstrings, and going into squat, 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 the tibia that way, they co-contract, well, then the tibia doesn't put any shear into the ligament, let's say the ACL here. 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 ligament 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 crossed syndrome and laterality.

Matt Wallden

So do you want me to tell you what it is?

Steven Bruce

Yeah, get me out of my misery.

Matt Wallden

Okay, well, so I think it's quite helpful to just start out by talking about Janda's muscle imbalance syndromes, just briefly, because that's what this is based upon. So Janda had this concept, in fact, I'll show you a slide. So these are the sort of classic muscle imbalance syndromes. So you've got the layer syndrome over closest to you, and then the lower crossed syndrome, optimal posture in the middle, and then you've got what's called the upper crossed syndrome on this right hand side. And so the two that are probably talked about the most are the upper crossed and lower crossed syndromes. And that's because Janda talked a lot about them. The layer syndrome was a little bit of a kind of secondary thing that Janda and Lewit talked about. But interesting enough, that was because Janda found that these muscle imbalance syndromes were the most common in his patient base.

Steven Bruce

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

Matt Wallden

There's a raft of symptoms and conditions that can arise as a result of a muscle imbalance syndrome. The thing about muscle imbalance syndromes is what you are witnessing when you see them is certain muscles on one side of the body being too short or facilitated, so they're overactive, and their antagonists being relatively inhibited or weak. So if we were to look at the upper crossed syndrome, which is almost ubiquitous, most people have this to some degree because it's a gravity pattern. Gravity tries to collapse us into this upper crossed position, which is essentially a forward head posture, protracted shoulders and increased thoracic kyphosis. 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 Chek system is we measure everyone to see to what degree they have this or don't have it. Now, what drives that in Janda's philosophy is short, tight pecs, in particular pec minor, which protract the shoulder, long, weak rhomboids and middle trapezius which allow the shoulder to protract, short, tight sternocleidomastoid, upper trapezius and levator and suboccipitals, which pull the head forwards, and then long, weak or inhibited deep-cervical flexors and supra- and infrahyoid group muscles. So slightly different to some manual therapy philosophies. Janda's concept is that these muscles draw the joints into a certain position, essentially, in this case, a hyperkyphosis 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 facilitated, and the ones that are long and weak, 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 leaning over a desk or driving a car, we tend to roll into that upper crossed 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

Well, there is that as well.

Steven Bruce

They do, don't they? They're a mirror muscle.

Matt Wallden

Yeah, exactly. And actually, the abs, the rectus abdominus, also compounds this, because it pulls that first rib down, so it pulls the sternum down, and compounds this sort of rounded upper crossed pattern. So that's the upper crossed, but you've also got the lower crossed. And the reason they're called crossed 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 of the cross, they are the weak or inhibited muscles. And then on this arm of the cross, you've got the tight pecs, tight trapezius, tight suboccipitals, levator. And they are, as I say, short and tight. So the cross represents how the muscles react to faulty loading or to pain etc.

Steven Bruce

I see dear old Leon Chaitow's name against that and 1998, was he the first person to put a name to this?

Matt Wallden

No, so Janda is the guy that coined it. 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 to write 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've had our first question come in. We better get this one out of the way, I suppose. Do you know Robin Moody?

Matt Wallden

I know of Robin moody.

Steven Bruce

Every time he takes part in the show, he manages to barefoot walking and running into it, and his question is, have you got your barefoot shoes on?

Matt Wallden

Do I need to put them up to the camera?

Steven Bruce

Of course, your connection with barefoot goes back to, you actually were one of the champions of barefoot shoes in the early days, weren't you?

Matt Wallden

Yes.

Steven Bruce

Was it FiveFingers that you did?

Matt Wallden

So these are the FiveFingers and that's what we distributed. Vibram FiveFingers 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 barefoot.

Matt Wallden

Excellent. So the idea of the crossed syndromes essentially talks about the pelvic girdle and the pectoral girdle. So it either rotates the pectoral girdle forwards, which is the most common way for it to go, with the pelvic girdle, you can go forwards, which is a lower crossed syndrome, or backwards into a posterior tilt, which is a layer 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 those syndromes which were described by Janda, fairly well established in the literature, there's always some controversies over these things and people say they're not real, and I think, we could explore that later if there's questions around that. But the process of facilitation, which is fairly well described this idea that each time a nerve impulse traverses a given set of neurons to the exclusion of others, resistance to that impulse will become smaller. 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. 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 laterality patterns, then what that means is that we facilitate certain musculature that runs between the girdles. And so Janda's concept was all about, essentially sagittal plane movements at the girdles, what I was talking about was transverse plane movement between the girdles. And so if we look at the slide on the slings, I think this really helps describe it. So, we've got this idea of the anterior and posterior oblique slings. So closest to you, posterior oblique sling. Which is fairly well described now and understood. So you've got the glutes on one side, passing through the thoracolumbar 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. So the thoracolumbar fascia has multiple different layers and lamina, if I remember it's the superficial lamina of the posterior layer of the thoracolumbar fascia that those two muscles are on. So when one contracts it pulls into the other one. And this is again, it's not particularly new, I think way back in the early 1900s there was descriptions of this. And it's also known as the smart spring of Margaria. But the idea is that with each step you take, you get a certain amount of elastic energy stored, and then you get the recoil on the next step.

Steven Bruce

This bloke's got a hell of a scowl going on. Not happy at all.

Matt Wallden

That's it. He must have had a tough day. So then the one that's not so well known is the anterior oblique sling, and that ties in a bit more with the middle crossed syndrome, although they both work synergistically as you can imagine, because, as one arm goes forwards, the opposite leg goes forwards. And so what that means is that 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 recoil, and then you get the stretch in the other anterior 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, 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 a 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 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 slings, it's going to create a torsion in the pelvis. 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 coming back.

Steven Bruce

That's going to be tough to do. isn't it? Your average tennis player let's say he's a pro or semi pro tennis player, or she, of course, they're sort of late 20s, 30s. They've been doing this all that time. How successful are you going to be at balancing those muscles and slings up?

Matt Wallden

Yeah, well, I think I think it's always gonna be a challenge when you've got someone, like you say, that is 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 MOD, and he was saying, I don't think it's a good idea. 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.

Steven Bruce

Really?

Matt Wallden

Yeah. So that was a shame. But these guys, they're PhDs, post doctorates, and they're working in the equivalent of the premiership in Iran, 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 sling systems, which is exactly what you'd expect, and what I've observed through my work with footballers, and the public at large. And then what they did was an intervention, an exercise intervention. And they found that following that the players improved their speed, they improved their stride length, they improved their kicking distance. They got taller, which is quite funny.

Steven Bruce

But I suspect that's the kyphosis?

Matt Wallden

Exactly, exactly. The only thing that didn't change was their stride width. I'm not sure whether it's a good thing or a bad thing. I would think that the wider the width of the stride, the more problematic it is. But there was no change to that anyway, after the programme. So it does seem that there's a kind of performance element, 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 crossed syndrome, but I don't know the language, maybe Arabic or something. I'm not sure.

Steven Bruce

I was gonna say, again, we talked about symptoms earlier on, I presume that like everything in medicine and in therapy, not everybody who presents with what you might think of as an upper crossed syndrome or other will have problems. And somebody's echoed this here, saying, are 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 be forcing our patients into.

Matt Wallden

Well, I was gonna say it relates exactly to that whole posture discussion, doesn't it? And there's a number of different ways of thinking about that. And one way is that the "better" your posture is, in inverted commas, just like the "better" your ergonomics are, in inverted commas, the less stress that puts on your system. But the reality is that human body moves and so there isn't really, this is like the neutral spine. We talked about the neutral spine before, didn't we?

Steven Bruce

You brought your sophisticated stick in so we could practice that.

Matt Wallden

That's right, yeah. 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 when I say symmetrically, I'm really talking about the middle crossed syndrome. With the upper crossed and the lower crossed, it's that if you've got someone with, say, an upper crossed syndrome, well, it puts more stress on to the AC joint and the SC joint. Does that mean they're gonna get osteoarthritis of those joints? They're more likely to, I would think, 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've got protracted shoulders, it forces the sternum downwards, so it holds you in exhalation. So there's lots of different elements to the upper crossed or lower crossed or layer 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. But yeah, it's one of those debates that you could have.

Steven Bruce

I have wondered in the past, whether, typically for many people in the gym, if they're on a 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, they'll set the weights to the same on both legs. I've often wondered whether we ought to be more concerned about improving the weaker side, to try to get them more balanced.

Matt Wallden

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

Steven Bruce

Might be getting off the topic here, or maybe we're not, but 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 with stretching is that we've for too long sort of looked at stretching as a bit like stretching out a piece of plasticine. 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. I use the hamstring as is an example because, I've studied them a lot, but the hamstrings will increase their tone, for example, when you're constipated, there's plenty of research into that. They will increase their tone when the sacroiliac joint is unstable or is painful. And we all know that that just with low back pain, in general, they tend to tighten up. When there's ACL issues, it's quite likely you're gonna get increased hamstring tone. because the hamstring, biceps femoris in particular, is a dynamic agonist to the ACL. So the point is that you could stretch out that hamstring, and if the person doesn't have SIJ issues, constipation, or ACL, then 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, 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, we really have to 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 its head, isn't it, because we're taught in college if someone's got a problem with the pelvis, do your muscle testing and this one's tight, therefore,

we must stretch it and that'll fix your pelvis. When, actually, if it's not the muscle that's causing the pelvis, or whatever it might be, it's the other way around, then we need a different approach, don't we?

Matt Wallden

Yeah. And that's what we want to aim to do, to track it back to its source. So even with the middle-crossed 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, we're talking about the anatomy, which muscles might be overactive or underactive, there's still the underlying reality that there could be viscerosomatic 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.

Steven Bruce

Couple of questions about exercises. First of all, someone who I'm being told is called Birdie, either by themselves or by 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, couldn't it?

Matt Wallden

Yeah. Well, 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

Maybe we can ask Birdie to come back and explain what was meant. Because it might be, do we mean going into gyms or do we just mean doing exercises at home, or whatever else.

Matt Wallden

I mean, most of the stuff you can do at home, it's always helpful to have a little bit of equipment. But you can do it without equipment, we can show you some exercises that you can just do on the floor or 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 going back to one thing you were saying, Steven, about the using weight machines, where 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 using machines, per se, but rather than putting a specific intervention in for these people that they identified with middle crossed syndrome, they just gave them a generic core stability programme. Which was not 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 hip, like a weakness in that sling. Then what I would do is I would give my patient 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 a bit of a low brow way to do it, I would say.

Steven Bruce

But it worked.

Matt Wallden

Well, it improved them. But I wonder how much more they could have improved them by actually addressing the imbalance that was present.

Steven Bruce

It does raise a question, which is apparently the cause of some discussion among 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? You said these Tehran researchers identified a middle crossed syndrome and so therefore they intervened.

Matt Wallden

Yeah, 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 worked at Chelsea, not a heated argument, but a discussion. And his view, like is being discussed is that asymmetry is a normal part of being a footballer, normal part of being a human, and maybe these players are great because they're asymmetrical, so maybe we shouldn't try to challenge that. My view is that gravity acts on you symmetrically. 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 your body asymmetrically, it's 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 than if you can maintain symmetry,

Steven Bruce

Unless your body is adapting all the time to this, which it 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 it also breaks down, because if it was adapted perfectly, then we wouldn't have any patients. And so 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 as something that's particularly important, is because there's many other factors that contribute like nutrition and sleep and hydration, and other factors that will predispose the individual to increased 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, 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 training them to be less asymmetrical, performance improved, which I'd have thought had been of considerable interest to Chelsea Football Club.

Matt Wallden

Well, yeah, you'd think so. But then there are many other factors involved in professional sports, and people working in professional sports. So, but one of the points I was gonna make about a football is that the idea that someone 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. 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 don't need to be, but it's beneficial to be symmetrical. It's kind of a similar discussion to with a boxer. You want a boxer to be able to round into this upper crossed syndrome to protect themselves in the ring, but you don't want them to 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.

Steven Bruce

But actually, in terms of middle crossed syndrome, boxing must be a real challenge, because it's very one sided. A bit like golf and cricket.

Matt Wallden

Exactly. 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 in the birthing process, the child actually twists, so they can get the cranium through the birth canal, or the pelvic outlet. And if you had perfect symmetry, and you used your body symmetrically in the legs pushing against the diaphragm of the mother, then you'd just push straight and you wouldn't get the twist. So you actually need to have some laterality for the birthing process so 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 a complete lack of it, they do still have preferences. And even Desert Orchid won 27 races around an anticlockwise track and only one round a clockwise track.

Steven Bruce

I didn't know they were any clockwise tracks. I thought they were all anticlockwise.

Matt Wallden

So this was just something I picked up on. And I thought, well, that ties in with the whole laterality discussion. But yeah, so 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. Of course, you can treat those things locally. But if you can look more 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?

Steven Bruce

Yeah? Good. Well, that's a simple answer to that one.

Matt Wallden

Yes. That's the quickest response I can give.

Steven Bruce

And Bob has said, going back to stretching, are you aware of the theory that we don't physically lengthen muscles when we stretch them, we just accommodate the nervous system, so it's becomes more tolerant to increased tension? Is there an agreed opinion on this?

Matt Wallden

Yeah, I think that's the consensus opinion at the moment.

Steven Bruce

So all that stuff about us tearing the muscle fibres, micro tears in the muscle fibres, in order to lengthen the muscle, which certainly gives you pain after you've been doing stretching and exercise and so on, that doesn't have a part to play in lengthening the muscle?

Matt Wallden

I'm not sure. I haven't looked into the 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 relationship, as we know.

Steven Bruce

I wonder if, in terms of outcomes, it really matters why it happens. It's more a question of that it happens, isn't it?

Matt Wallden

I think part of what's relevant to that is that if the hamstrings are, or 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 crossed syndrome here.

Matt Wallden

Yeah, absolutely. We've talked about this before, one of the models I like to use to understand human function is Punjabi's model, which is this neural active passive triad. And so of course, you've got the active components, the muscles, which we're talking about acting on the joints and the bones, which is

the passive. So that's the scoliosis that's happening over here. But what's controlling the muscles is the nervous system. 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, it's 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 gravity, again. Gravity is 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, orthotics for foot. But the point being that it would have to be a big priority for you, if you wanted to achieve that. But it is achievable. Because we know about Wolff's law, but that's essentially the SAID principle, which is specific adaptation to imposed 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, don't we? So before we do that, a couple things here. Lucy sent something in about horses, and I'm sure, Claire will be delighted. Apparently, there's some research that shows that the handedness of a horse is due to its position in utero. I don't know if that has any impact on which way round the racecourse they run. But Mike has said, this is a good question, actually, in relation to patients in pain, a lot of what you've said sounds quite complicated. Is it easy to explain to patients so that they understand what it is you're trying to do with them?

Matt Wallden

Yeah, I think 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, 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 help to redress the balance. But this ties in with all kinds of elements of biomechanical function from things like force and form closure at the sacroiliac joints to medial rotational instability through the lower limb and pronation patterns.

Steven Bruce

That force and form closure in the sacroiliacs, 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 it's very easy to get those expressions the wrong way round. Maybe we won't go into that here. 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 what I've picked up from looking at, I've got a textbook on laterality and in that textbook, they talk about how ambidextrous people still have a dominance.

Steven Bruce

Are ambidextrous people, also ambifooted?

Matt Wallden

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 be able to kick as well with either foot or does it go together?

Matt Wallden

It can do, but 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 can imagine someone shooting a gun, they tend to shoot...

Steven Bruce

I can just about imagine that.

Matt Wallden

I expect you can. You're probably going, what's he doing with his hands? But so you would line up like that for most people, but some people will do it like this.

Steven Bruce

I'm one of them. The rifle's fine, because it's a one eye exercise. But with a shotgun, I'm looking across it the wrong way, because of that eye dominance.

Matt Wallden

But all of these dominances can affect, 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 a more profound effect than the average person.

Steven Bruce

Let's get back to football. Shall we go and see our model?

Matt Wallden

Let's go and see Jack, yes.

Steven Bruce

I've just got to take my iPad with me so I can answer questions when we go along. So Matt, this is Jack.

Matt Wallden

Hi, Jack. How you doing?

Steven Bruce

Jack is a footballer we've learned earlier on this evening.

Matt Wallden

Excellent. Okay, good. 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 they're not actually cheating, but they can compensate more easily. So it's better to have the arms across the chest, if you just put them across. 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 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. Because what you want to do is first of all get a sense for what's going on. But also you want to see what happens as they fatigue a little bit.

Steven Bruce

Are you watching for the umbilicus moving itself or for the body rotating?

Matt Wallden

Well, they're almost one and the same thing, really. 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. Now, of course, the minute you say that... But it's difficult to control. But is more obvious that Jack's got better control as he picks up his left leg and a little bit more movement on the right leg. But actually, overall, he's got pretty good control there. I would say, in Jack's case, it's perhaps somewhere up to a centimetre of movement, perhaps 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 camera. Can we just run through that very briefly again, so we can make sure everybody can see it?

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, Jack, if you just come back down and rest. I'll put my finger here. And you just do that again. Okay, and then just switch sides. That makes it a bit more obvious, I think. I'm trying not to cheat here by moving my finger. But 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 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 or whatever. He's come to you for what reason?

Matt Wallden

Well, he may come to me with low back pain. Yeah, that's 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 hip helps to stabilise the right hip 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 side, because that sling isn't doing what it's supposed to do. So that pelvis can go into an anterior tilt. Now we were just talking about force and form closure. This is part of the force closure mechanism. When it contracts, it posteriorly rotates the pelvis and as it posteriorly 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. But it's the muscles pulling it backwards, that is the force closure. So this is part of the force 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 a sling 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 the pain?

Matt Wallden

There is that possibility, yeah, there's always that possibility.

Steven Bruce

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

Matt Wallden

That's well, that's the ideal, isn't it? And that's what should be happening, particularly in professional sports. But so then, this is where it becomes, I think, even more profound is that with that anterior oblique sling, if that one is inhibited or weak, then that right side of the pelvis can rotate forwards and that means that as the pelvis goes into an anterior tilt, the right leg will roll into medial rotational instability. Now, did you say your left footed? Yeah. 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'd be stronger through this sling. What hand do you throw with? Right hand? Okay. So you throw right handed. Yeah. So that's possibly why, if you were left-handed and left footed, then I think we probably would see that sling imbalance the other way around. But so another part of what we want to discuss is, 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 oblique pulling too hard and therefore creating this deviation in that direction, or whether it's the external oblique and the external intercostals, which, of course, are one and the same thing, that are inhibited and weak.

Steven Bruce

Sorry, I'm just gonna be really boring and say, can we just do that demo once more? And we'll get the PTZ camera on it so we can show everybody exactly what's happening? Just very briefly.

Matt Wallden

Yeah, shall I do my finger again? Okay. So let's just pick up that right leg?

Steven Bruce

Rock steady.

Matt Wallden

Pretty good, and then pick up the left leg. So that one, staying more central. And then right leg, there's more movement.

Steven Bruce

Okay. Thank you.

Matt Wallden

So that's one way to test it. Very simple one, 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 that, but one question has come in from Scott. He says, are you familiar with Beevor's sign to test for inequality of abdominal muscles?

Matt Wallden

Beavers? No.

Steven Bruce

B, double E, V, O, R it's spelt on my questions.

Matt Wallden

No, I've not heard of that.

Steven Bruce

Well, okay. Right then, in which case, Scott, we need you to send us in something about Beevor's sign so that we can talk about that. Okay, Swiss ball it is.

Matt Wallden

Okay. Excellent. 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. So your shoulders are taking the weight and your head's 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. 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 his shoulder down. Now let's have you move back. And we'll go the other way. So now it's more

loading this anterior oblique slings. 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 too...

Steven Bruce

Are we still testing or is this a remedial exercise?

Matt Wallden

We're still testing because we want to see how well he maintains that umbilicus as he goes side to side, but also this tests 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 glute and his left lat. Okay, so he's maintaining pretty good control of the umbilicus in that direction.

Steven Bruce

He's gradually rotating, is that...?

Matt Wallden

Yeah, he's getting much more shear in this direction, okay, so that's again 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 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, possibly there was a bit as he went off to this side. But essentially, what you're looking for is that umbilicus and 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 Jack it was as he went across to his left side. And because his left shoulder is off the ball, what's happening, if you mentioned the ball's directly behind me, if I move off to the left, then gravity's trying to drop me back that way. So I have to activate this sling to stay aligned. So both of those tests are consistent with each other, that there's something that needs working on in that left shoulder, right hip, anterior oblique sling.

Steven Bruce

And how are you going to do that?

Matt Wallden

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, because he hasn't got someone watching what he's doing, and he might not be aware of what's happening on the ball.

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 so they've 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, but you can just see the foam roller and you can see if

it's deviating forwards or backwards. So 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, that's my job, isn't it? I told the camera crew it would all go to rats when we had to do it for real.

Matt Wallden

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 your heels are 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, let's just bring that back down, 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 come this side and demonstrate things like that.

Matt Wallden

So on this side there and back down and see how his umbilicus there is actually... So I'll do the, I don't know if we can get the overhead shot again, but just try picking up the right leg. See the way that's way better controlled 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 biasing it to the right side. So you get getting more conditioning through this sling. So that's one way that we can 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 Jack, if you pick up your right hand and your left knee. So not even very high. Just pop 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's now loading the posterior oblique sling here, although not too much, but it's really loading 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 in all of this?

Matt Wallden

Well, what you really want to do is you want to have again a dowel rod on here and actually I know you're very kindly almost promoting my neutralizer device. But actually a dowel rod is better for this. The neutralizer will sit on the spine. You can relax now for a moment. You're starting to sweat.

Steven Bruce

Make him work, make him work!

Matt Wallden

I may come back to that in a second, but the thing with the neutralizer because it's flat, it will stay on the back as the person lifts, even 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

Can I 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 casts doubt on these upper/lower crossed syndromes. Most research is their view not necessarily mine.

Matt Wallden

Yeah, do you want to talk about that here?

Steven Bruce

Maybe we should come back to it when we're back over there, because you clearly think there is evidence behind it.

Matt Wallden

Well, it's a little bit like say, standing there with one shoulder up and saying, is there evidence that my right shoulder is up? It's like, well, if you look at it, it's there. But you can argue for how relevant that is and I think that's more the case. What I've seen is 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 Janda 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. And that essentially, is what drives an upper crossed and lower crossed 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 Janda found, because he was working in a hospital setting. And in the ambulatory population, you get way more layer syndrome, which is this kind of pink panther type posture, as opposed to the Donald Duck, lower crossed, which is what you tend to get in hospitalised patients.

Steven Bruce

I like your terminology.

Matt Wallden

It's 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 the point is that then Janda made these observations, put them into tables and said the psoas is a tonic muscle and the rectus femoris is a tonic muscle and the hamstrings are phasic. And then you get people arguing, well, actually, the hamstrings have tonic fibres, and the psoas has phasic fibres. And it's kinda like, well, what Janda 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 phasically. But it's how you use them that determines how they end up behaving and how the fibres within the muscles migrate towards more tonic or more phasic. So you can make those kinds of arguments, which I've seen quite a lot. I've seen also people talking about how someone with a lower crossed syndrome, which is where the glutes, in theory are weak, can still have strong glutes. As if that proves that there's no such thing as a lower crossed 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

I hope that satisfied the question.

Matt Wallden

I mean, it's something I could dive into in some depth.

Steven Bruce

Okay, are we gonna do some more with Jack?

Matt Wallden

Maybe, Jack, 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 sliding the piece of paper under this hand and under that knee. 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. So that's the good side. Or the side that we didn't see a deficit in, so then we switch sides. Yeah, that's it.

Steven Bruce

It's tricky, isn't it?

Matt Wallden

It is tricky. And do you find a difference between the two?

Jack

Slightly, yeah.

Matt Wallden

Which one do you find more challenging?

Jack

The other one.

Matt Wallden

The other one? Yeah. So again, it's not what what you'd expect. Can't get the patients these days can you?

Steven Bruce

We should emphasise he didn't come in here with a problem. Jack is just a model.

Matt Wallden

So what you can do 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 on this side, there's more rotation, there's more transverse plane through through the pelvis, less scoliosis, less frontal plane.

Steven Bruce

Jack, you shouldn't be worried about being told you've got scoliosis, it's just curving in the spine as you move it.

Matt Wallden

Yes, that's a very good point. Yeah, it's not a problem, scoliosis is normal. Okay, and come back. So the point is by watching how they stabilise during those movements, you can then start to either make the movement more challenging, or make it less challenging. So in that case, without any other kind of feedback, like a dowel rod, that's not going to help.

Steven Bruce

Let's turn to your dowel rod. There's no way on earth, we're gonna bounce a dowel rod on his back at the moment, is there? 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. So we're gonna have to coach him into a more neutral spinal position, as well as a sort of slightly head forward position?

Matt Wallden

So you want me to do that, or you want to do that? 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 a watch, keeping your chin tucked focused on that. I want you a little bit further forwards, as in with your hands, so your thighs are more vertical. That's it. 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. Let's try that in that new position. Let's just try picking up left hand, right knee. Okay. Good. And that's definitely better. Let's just go the other way. And that's better as well. There you go, Steven, I'll give you a job.

Steven Bruce

Someone's gonna ask how many times should he 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 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 and the left leg, which is going to work that sling, might do that for 20 seconds, and then when we do this one we'd do it for 10 seconds. Then we do this one for 20 seconds, this one for 10 seconds. So now we've got a minute's worth of work time and time under tension for the whole exercise, but only 40 seconds for this sling and 20 seconds for that sling. So we really want to do another rep of that and that takes us 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 30 second rest, it can't be more than a minute. If you go beyond a minute, the type one fibres, the postural fibres, completely recover and you don't really get a training stimulus. There's got to be about a 30 second rest, and you do the same thing again.

Steven Bruce

And this is much what you discussed in previous sessions, in terms of sets and repetitions, isn't it?

Matt Wallden

Yeah, exactly. So the point being that 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 and more conditioned. And so 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

And we talk about this with so many speakers, this whole business, particularly Claire Minshull, 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 weight on both sides. It's not really being very bespoke to what you need, is it? And we did talk about this before, I can't remember which of the broadcasts, was it the one we did which was the math of core stability?

Matt Wallden

Yes.

Steven Bruce

Which was the response to Eyal Lederman's paper, The Myth of Core Stability. And that will be a good one for people to go and look at if they want some more on this.

Matt Wallden

Yeah, exactly. It would be a good one, because 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 either specific studies or or meta analyses which show that it's somewhat ineffective or it's 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 viscerosomatic reflexes. They're not even assessing whether or not the person needed the core stability in the first instance. So this was something Diane Lee spoke about on my

podcast when I interviewed her. So she's the physio from Canada whose written loads of textbooks and helps run the World Congress on Low Back Pain and she 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 to see if they needed core stability? And they said, no, they just had low back pain. And she's like, well, 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 random set of exercises. And this is part of the issue at the moment is that there's this sort of debate and infighting about it all.

Steven Bruce

So are we going to do more with Jack or can we release him into the wild now?

Matt Wallden

I think for now we can release him, but I think you were saying you had a meniscal injury? Now that was on the left side, was it?

Jack

On my left side, yeah.

Matt Wallden

So again, doesn't fit with this middle-crossed 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 Jack would be more predisposed to injuries on his right leg. Okay. Now, we haven't looked at him walk, we haven't looked at him run, him jump his lunge, or any other movement patterns. And if we did that we might change our mind and maybe think that it'd be the left leg that's more vulnerable.

Steven Bruce

So if people wanted to take away stuff that you're talking about this evening and use it in clinic, do they need to look up something else so that they can do all these other tests or is what you've shown them here a good marker?

Matt Wallden

I think these two tests are a great way to identify which sling systems are compromised, the exercise is a good way to start to address those sling systems. And then really, it's just clinical application. I think you can apply your own clinical reasoning and knowledge and anatomical knowledge, and have a play around with it yourself. You can get your iPhone set up and do these tests on yourself and see what your umbilicus does, and then see if that 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. So you do have to reassess. So I wouldn't just say, in your parlance, send them out into the world. I would say, okay, so we send them out for X number of sessions or X number of weeks, and then obviously, reassess.

Steven Bruce

Interesting that, on the one hand you've got patients who won't do your exercises, and then there'll be the others who will say, well, I'm gonna overcompensate by doing much, much more. Especially athletes, you know what they're like. Thank you, Jack, that's very kind of you. Do you want to know about Beevor's sign?

Matt Wallden

Yes. Yes. Tell me about Beevor's sign.

Steven Bruce

Scott says, Beevor's sign is done with a patient supine, slowly, flexing the abs with the neck and head coming up about 20 centimetres. The inequality of the muscles is easily shown 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 he's saying there.

Matt Wallden

There's lots of talk of umbilical movement in motor control in general. So 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 one side's more inhibited. So then the question is, is it inhibited by pain? So if you've got sacroiliac joint pain on the left, that is going to inhibit transverse abdominus on the left, more likely than transverse on the right. But similarly, if you've got constipation in your descending colon, then that's likely 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 with a liver on the right, that's more likely to affect the musculature on the right side of the abdominal wall. So we want to always think about the gut health and the other joint health as well as what we're actually seeing with the muscles.

Steven Bruce

And what about postpartum ladies? Jolly Local, who's also known as Kim says, do you find women who've had difficult childbirths are more likely to have a problem due to uncorrected uterine prolapse?

Matt Wallden

I don't think I can speak from experience specifically to that point. I mean, clearly, there are issues with motor control following complicated births. Diane Lee actually, again, has got a great book on this that she's put together. I think she released it 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, diastasis recti and 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 the response.

Steven Bruce

We might follow up on that actually ourselves because we've been asked by several people to talk about diastasis recti.

Matt Wallden

Diane's a brilliant speaker. She's in Canada, but you might be able to arrange it, the timing could work.

Steven Bruce

We'll see what we can do. 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 reading it out very well.

Matt Wallden

Yeah, I think I get the gist of it. I think it is important in preventative work after someone's had an injury to stop it recurring, that's for sure. One of the things that piqued my interest in this as well, 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 strike a football. So you would 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 don't know how much weaker they would be, but if these muscles are slightly weaker, and as I understand it, I don't know how they work this out, but a lot of the injuries occur not through the use of the muscle as an agonist, but as it slows the leg down. And therefore, you're putting this sudden force through the quadriceps, let's say, and then it's the hamstring, which tries to slow the leg down, so you don't snap your knee, but it's slightly weaker than the other side. And the other side is not doing that anyway, because 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 what I described with the hamstring syndrome.

Steven Bruce

I knew I'd read it somewhere.

Matt Wallden

Yeah. Because the hamstrings are the rate limiting factor in terms of how fast you can accelerate the knee. Because if you can't decelerate the knee as fast as you accelerate it, then essentially you crash into your cruciates and you damage the cruciates and the knee joint capsule itself. So, but in terms of in terms of injuries, I think there's there's an argument for why the kicking leg's more likely to get injured, because kicking is not normal physiological thing to do, whereas standing or jumping is. We didn't evolve to kick, but we did evolve to run and jump 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, say, meniscal tear because of the rotational forces?

Matt Wallden

I think it was overall injuries across the season in the Premiership, if I recall the paper or the presentation I got that from. But I suppose, in terms of thinking about the middle-crossed syndrome, 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 there are other sort of discussions as to 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 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 combination of those clinical observations, the physiological rationale for how the body activates those muscles and this kind of process of facilitation that conditions those muscles, and then this figure that you're getting more injuries through that leg, because you can't control it as well, because essentially, you've lost the core function that stabilises that leg. So then you end up with more of a medial rotational instability pattern on this right leg. So essentially, a pronation pattern. And of course, the traditional pronation discussion is related to 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 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. 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

I don't know, this might not be relevant to what we're discussing this evening, it'll be interesting to hear. Stu's asked how you would manage a frozen shoulder? It obviously affects the sling, doesn't it?

Matt Wallden

Yeah, and this is the thing is that because the slings connect the pelvic girdle to the pectoral girdle, then any issue at the shoulder is going to affect the sling, and affect 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 arm. So this is where when we're looking more holistically at the body, if you've got an 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, they're 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 if they're using dumbbells or kettlebells, or whatever it might be. And that's just a sort of hypothetical, on the moment, example. But because this is what connects the two limb girdles, and power always starts from the ground upwards, it's always generated from the ground upwards. We push off the ground to generate the power, and it transfers up through the leg into the pelvis into the arms, it's normally expressed out 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. 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 being expressed out of the arms. Which kind of ties back into Gracovetsky'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 the 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 are being thrown up or anything like that. Does it affect your management of conditions like that?

Matt Wallden

So if 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 that 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 yeah, I would be looking at the way the whole body functions. Because 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 this but we've run a lot of courses with Simeon Niel-Asher about frozen shoulder. And of course, he made quite a name for himself in treating frozen shoulder and 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.

Matt Wallden

Yeah.

Steven Bruce

And it may just be the similarity of the joint, but there is a definite connection there, isn't it?

Matt Wallden

Yeah, it makes perfect sense, doesn't it? Because they have very, very similar patterns. And obviously, if you think of it from an evolutionary perspective, then you know they're pretty much the same set up and when you're in that four-point position, like we just saw with Jack, that's when the shoulder and the hips are in their close packed position. So anyone with shoulder instabilities or motor control issues at the hip or the shoulder, in that four point position, that's where the joint, again it's in its close packed position and the reason it's in a close packed position is because we evolved as quadrupeds. So actually the acetabulum is most pronounced in the posterior aspects. The shoulder, when it's in that position, you've actually got the scapular reaching around 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 an upright position, it's pretty much hanging out of the joint itself. There's a lot of, what do they call it? It's not a homology, it's analogy. They're very analogous.

Steven Bruce

Probably the final question, from Stu, 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 prior to DNS becoming a thing, I'd learned a bit about Vojta's approach. And of course, Vojta was Kolar's mentor. But we talked about Janda right at the beginning and Lewit. They were all part of this group at Prague and Vojta was the guy that worked with all the infant development stuff. And they worked very closely together, developed their thinking around how tonic and phasic fibres differentiate, how that leads into muscle imbalance syndromes and so on. And Kolar, who developed DNS, is the protege of Vojta. So, I don't know exactly how it correlates, because I've not really done the DNS training to any great depth.

Steven Bruce

Do you see an overlap?

Matt Wallden

I mean, there's bound to be an overlap. I don't know what those guys say about laterality patterns. I'm aware of them using these reflex locomotion points and infant development understanding to help rehabilitate, which I'm totally on side with, I think that's really good. But I don't know what they say about laterality, I didn't get to that part of their training.

Steven Bruce

I've said this before, when you've been on the show, Matt, I'm absolutely overawed by most of the people who come in here, because 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've had 521 people watching this evening, which is a pretty good number, I think.

Matt Wallden

That's amazing, yeah.

Steven Bruce

I should urge them all not to watch your podcast because I don't want to drive my own business in your direction, but when you are you starting 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 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 relaunch, 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 hear it.

Steven Bruce

I'm not quite sure how much success I wish you in that, because we're direct competitors.

Matt Wallden

It's not gonna be the same as this, obviously, not as professional as this.

Steven Bruce

No, I'm sure it will be. And just to remind people, your website's mattwalden.com, which is where they're gonna find all this information, isn't it? Are you running any courses in the near future?

Matt Wallden

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

Steven Bruce

And will that be an online course?

Matt Wallden

That will probably be an in-person course, we might be able to do it so we can combine it, if people can't get there, they can watch. But I think it's much better to feel this stuff and to see it.

Steven Bruce

Well, I know where you can get lots of cameras to film this and stream it online.

Matt Wallden

Maybe we could do that.

Steven Bruce

Yeah, that'd be great. Yeah. Nikki P's just said that was the quickest hour and a half. Brilliant talk. Thanks. Just an example of one of the thanks coming in. Nikki, thank you, for that. Matt, thank you for that. It's been great. What did I tell you? He's just brilliant, isn't he? And I'm sure you've got loads to take away for your own clinical use from this evening's show. As always, quick look ahead. Tomorrow, we've got a case based discussion at lunchtime and I think we've got a possible frozen shoulder case in the pipeline. So that follows on from this evening as well. We'll find out at ten past one tomorrow afternoon, and that'll be 45 minutes of CPD as usual and, of course, being a case-based discussion, as well as being great learning, it ticks the objective activity checkbox on the GOsC's list there. Next Tuesday the 14th, the evening again, I've got Robin Lansman with me. Now Robin is very well known for his expertise in Functional Active Release, and I'm sure we'll touch on that, but we'll be concentrating on multidisciplinary approaches, as well as looking at a very bespoke approach to the bridge exercise, which intrigues me and I just know it's gonna be a great show. We've had Robin on the show before he was very well received, and it'll be brilliant next week as well. On Thursday the 16th, two days after that, another name that we've talked about a lot this evening, I've got a lunchtime show with Simeon Niel-Asher and Professor

Bob Gerwin, they're going to be talking about Myogenic Thoracic Outlet Syndrome. So there we are. Still got one last place available on the Laurie Hartman course for his weekend masterclass on the first and second of April. The man is an absolute genius. If you want that last place, again, just contact Ellie. Her email address is elaine@apmcpd.co.uk. And I think we still have places remaining on the dry needling course, the intramuscular stimulation course on the 19th to the 21st of May. Again, that's with Bob Gerwin and Simeon Noel-Asher, and I've said this on several broadcasts it is a truly brilliant, brilliant course. It's far, far better than any other dry needling course I've seen. You can do it as a novice, you can do it if you've done needling elsewhere, you will learn an immense amount in the hands of these two world experts. But that's it for today. Enjoy the rest of your evening. I'll see you tomorrow, I hope. Bye for now.