

321 - The Runner's Knee with Clive Lathey

Steven Bruce

Well, a very good evening to you. And thank you for joining me, I've got a great 90 minutes lined up this evening. Tonight we're going to be looking at well I guess we're going to be looking at lower limb biomechanics really, we billed the show as runner's knee. But I know that my guest is going to be taking us down a lot more than just that. He's Clive Lacey is an osteopath and a sports injury specialist. He's been in the business since 1983. He's got a master's in sports medicine, and he's a real expert when it comes to rehab. evening. Good evening. Good to have you back on the show. It's been two years I think so for having me back. When you were very popular last time you're on the show. So I know we're gonna get some good stuff tonight. Am I right in saying we're gonna go beyond just runner's knee for this evening?

Clive Lathey

Well, yes, I mean, I, basically the knees, the slave to the hip and the ankle. And I wanted to rather than just stay focused on just the knee. I was looking at all the contributing factors. And it's hard to know where you draw the line, really. But yeah, I'm hoping to add some things maybe that people are not so much aware of.

Steven Bruce

Yeah. And I said, you know, you're a sports injury specialist. But it doesn't mean you only deal with athletes. I presume that a lot of this stuff could relate to any of the population could

Clive Lathey

absolutely. One of the reasons I put this talk together was because during lockdown, a lot of our patients were most of them seem to go out and buy shoes on Amazon, right? And they hadn't run for years and went out the front door. And we're dealing with all the injuries. So there was a big surge in running related injuries, which prompted me to put this talk together. But no, I treat a lot of recreational athletes and you get knee pain without being an athlete, just climbing stairs, just activities of daily living can give you some of the things we're going to talk about tonight.

Steven Bruce

I was I was very intrigued by one of the things that you mentioned when we were having our pre show discussion while you talked about gravitational pulse, which is something I hadn't heard of.

Clive Lathey

Yeah. And what's that all about? Well, Professor surge, Brock Evette, ski who I went, I had the privilege of getting to listen to a talk he did about 20 years ago. And he wrote a very interesting book called The spinal engine. And he proposed this theory that locomotion was mostly achieved by the pelvis and lumbar spine. And actually, he's, he's very knowledgeable. He's a nuclear physicist. He's a mathematician. And he proved mathematically that the pelvis and the spine were actually the drivers of locomotion and the legs work, you know, contributing. There's a bit of controversy, I think the, you know, the proponents of the leg. Part of it were didn't embrace it completely. But I think now we've reached sort of halfway point where we see the contribution of the pelvis and spine and the lower extremities as well.

Steven Bruce

So where's the pulse on this?

Clive Lathey

So the post yet, so gravity, gravity is obviously a an attraction and a force and when you're running your molecules, your mass is interacting with the earth and creating this, what you would call a ground ground reaction force GRF. That's the standard biomechanics word for it. Gretzky like to use the word pulse because you had you could visualise this impact energy working its way up through the body. And if you think about the massive loading, the gravitational pulse is moving at about 200 miles an hour. It's also creating an oscillation of vibration of 40 to 50 cycles per second. Sorry, that 200 miles an hour. So that's a pulse of reaction force of, of energy going through the bones and the soft tissue. Yes, that's kinetic energy, your impact with the ground. The problem with running is that it's a linear sport running in one direction is repeat loading. And if you hit the ground, when you're running, you're generating three times your body weight on the flat, if you go downhill, it can be as much as five, if you're a sprinter can be up to 10 times bodyweight. So if you're in a two kilogramme man, and Ryan going out for a run, you know, you're generating 240 kilogrammes per limb, which is an extraordinary amount of loading. And actually, if you do the physics on it, the bone tissues to crumble, you know, the soft tissue should suffer massive trauma. And our ability to cope with that loading is what is really quite fascinating. Yeah, surely, I mean, most of that load only happens if you would hit it hit the ground rigidly, which we don't do because of that stuff that goes on in the foot and the ankle. And even if you're walking, it's still times one bodyweight. And so if you're, if you're walking or even running, you're still generating an 80 kilogramme man is generating 80 kilogrammes for each for each limb, so that there is significant loading. And in evolutionary terms, we've evolved to be able to cope with this loading because 3 million years ago, we started to develop the ability to develop a lordosis, an extension of the lumbar spine, which allowed us to be upright, and that that was one of the first steps chimpanzees have a flexed spine and they can't stand up straight and they can't stand on one leg either because the pelvis is too narrow. When you got to about 2 million years, we started having other adaptations we, we started the pelvis widened, we calcaneal cuboid, bone, developed a little ridge, as did the first metatarsal and that gave us leverage and to get the foot locking. So we've evolved through time to harness this gravitational pulse or the ground reaction force. And actually, as John Allison says, we're the only mammal that can take a linear impact force and convert it into rotation is when as the gravitational force works as way up through the body through each joint level, the soft tissues, you get to the thoracic or lumbar area, and you'll notice that the trunk has started to rotate. So you've converted that kinetic energy into a rotation to propel yourself forward. And we're supremely adapted to that. And if you see on this diagram, this is blue, blue is showing the fascia. In fact, you can't really separate the muscles and fascia they're all

intertwine but fascia has the unique ability has contractile proteins like actin and myosin like muscle tissue does. And it's able to distribute the load throughout the whole body. And you'll see that it crosses over you've got different layers of fascia, and the fascia combined with the plantar fascia in the foot. And the flexor digitorum. Also in the foot is the first dampner you've got the subtalar joint which is like a torque converter, which is converting uneven force into a linear force. And the tailless being dome shaped is ideally arranged architecturally for driving that force up the through the extremities. And then as you go up through the body, all the soft tissues are absorbing all those tremendous forces of load. And we are supremely adapted to it. We're also adapted to it in a thermo regulatory way as well, because we have a very high number of sweat glands. And in fact, there's a very trivial pursuit question, you know, if you ever want, I don't know if you know, but if someone's hit by lightning, their shoes normally have blown off. And it's because there's so many sweat glands on our feet that the water vaporises and it blows the shoes off. So we aren't we have a high number of sweat glands, which allows us to cool very efficiently more so than other mammals. So we are, we are adapted for running.

Steven Bruce

So it's well known, I think that the pronation that occurs in the foot causes an internal rotation of the tibia, doesn't it? Yes. So that's that presumably is a good thing because it reduces the the ground reaction force through the rest of the body, but also it's putting a twisting stress on the knee.

Clive Lathey

Well, it pronation, we have to pronate because we're converting that linear force into that's the first rotation development. So as the tibia medially rotates, it's creating a sort of torsional internal rotation of the femur. And then that's sort of driving the pelvis forward as well. So yeah, pronation is a normal part of our locomotion, we have to have that. And I think it's a bit misleading for the public because sometimes they see shoe shoes saying anti pronation is that some sort of, you know, a bad thing and we shouldn't have it. We do need pronation is a question of how much and how long we pronate for if we've run out for too long, that can create extra stress forces, but it's also how rapidly we do I imagine as well, yeah, it's about the control of it. And in fact, I don't know if we've talked about orthotic later on, but orthotics at Don't stop your protonating they distribute the load better through the arch. So it's a misnomer to say that orthotics stop your pronating. They just distribute load. We're interesting.

Steven Bruce

I mean, you must see quite a bit of this. I've certainly seen some what I would regard as being very badly made orthotics. Generally, unfortunately, coming through the NHS, when they are pretty rigid. Yes, they're very massive and very difficult to fit in the shoes, but they're also completely rigid. So they are then trying to stop or they are stopping pronation. Well, the other problem is that they they're being incorrectly prescribed. So

Clive Lathey

you really, you should only be prescribing orthotics, technically, if someone's got a Pez plainness flatfoot not if they got a Pesquet was high arch. You don't you don't need to have an orthotic, you've already got an arch. So that really should be reserved for people who got very flat feet,

Steven Bruce

would you would you correct a flat foot in the absence of symptoms?

Clive Lathey

Probably not. You know, I think there's a lot of controversy about this. That's a whole sort of separate subject, we will the darkness working for us and in my clinic and partly in London, and he he cringes, really when when we're not when all the podiatrist knows or prescribing overprescribing, he doesn't think everyone should have orthotics should be selected. So there is a bit of uncertainty about you know, whether whether they're doing the job or intended but for most people, when they have got symptoms, they do think to help so.

Steven Bruce

So we're generally then does it all break down and let's focus for a second on runner's knee, someone who's going to your clinic they've got the symptoms of runner's knee, the signs of runner's knee, what's causing that? Is it generally an overuse? Or is there generally a malfunction going on somewhere?

Clive Lathey

Well, it's multifactorial essentially, is usually related to load. So if someone is over training and not having enough rest periods, or they're not cross training, if someone's not preparing for running, I think the problem is that the general public thinks you just put some shoes on and you don't need to be tutored for running. The fact is, you really do need to prepare for running because if you've had a sedentary job and you've been inactive and your muscles are decondition, then that's going to be a major contributing factor to developing a problem because you don't have the ability to absorb load. So quite often, it's it's overtraining, not enough rest periods, probably increasing distance too much. And, you know, maybe I mean, there's other factors like for example, footwear, inappropriate footwear, and then there's genetic predispositions. If you happen to have patellar, all to what you've told us, it's a little bit higher and you've got joint laxity, then, you know, that can be a predisposing factor. There are lots of biomechanical factors as well, particularly in in women with femoral anteversion, the angle of the femoral neck of the femur. If that's more than 10 to 15 degrees, that can be a problem as well. So there's biomechanical causes as well as, you know, training.

Steven Bruce

So then you talked about just a moment ago about preparation for running and you did say training for running and as you say, most people would think well, running is running, you can do that. It's just walking, but a bit faster. Yes. I've been simplifying a little bit here. Who do you send people to? A recreational athlete, not a high level sportsman? Who do you send them to, to teach them how to run properly?

Clive Lathey

Well, in my own clinic, my podiatrist happens to be a running coach as well. So I'm fortunate in that respect, if, if they don't want to go and see our person than I usually get them to try and track down someone who I recommend someone if I if I can find someone in their area. So I think,

Steven Bruce

all running clubs good at this, or they just generally have like minded people,

Clive Lathey

I think the problem with running clubs is they tend to be just that they there's no because I do talk to running clubs. And I'm amazed at how little they know about, you know, the preparation and injury prevention. Because actually, if you're cross training, you're getting people stronger than you are

improving performance. So it's not just preventing injury. So if I had someone who was told me, they want to take up one, and they haven't done it, since they're at school, and they're in their 40s, for example, I'm gonna get them to go on a bike first of all, or elliptical trainer, I get them to have some non weight bearing or low weight bearing, strengthening first, I'd probably give them very specific exercises, you know, to try and build up more pelvic strength, try to get them conditioned. And then you introduce them to running in a sort of more progressive way. You get them to do a walk, run kind of programme. And they're you know, there are ways you can introduce people into running and educate them so they can avoid injury.

Speaker 1

I'm, I'm tempted here to prompt a little bit of controversy because only a few weeks ago, we had a Letterman on the show, and Ailes, his message is the only training for what you want to do is doing what you want to do. He would argue probably there's limited or no crossover between a bike and running.

Clive Lathey

Yeah, I I've been to Ailes talks and I've read his books and I've actually had a conversation with him about that subject because he has a slightly more sort of cerebral approach. So if you're if you're playing tennis, he would get you to hold a tennis racquet and practice is all about one neural pathways, which I think is you know, he's absolutely right. There are lots of different if you look in the literature, there's lots of different ideas and yeah, I think you're gonna find different people with different opinions. But I think that if you look at the research literature, strength training does help reduce injuries, I did a talk for fee for once on the prevention of soccer injuries, using pelvic, basically focusing on the pelvis and spine as a method of preventing soccer injuries. And I did a lot of research, using a lot of stuff from Scandinavia on this. And they've there's a lot of evidence that if you can build up pelvic strength, you reduce loading through that through, particularly through the knee joint, which is very vulnerable.

Steven Bruce

I wonder if that's slightly different to what I was saying, because I think his argument is that you can't increase you wouldn't improve running performance by doing cycling training. No, no, I agree. I mean, you might, you might perhaps prevent somebody or minimise what you're using, you're using

Clive Lathey

as a means to learn or using the cycling as a way to get people back into exercising, because you can't really send them straight out when they've done nothing for 30 years and say, go go and do a couple of mile run. So if you if you get them on a bike, non weight bearing, at least you're priming the muscles, yeah, it's not perfect. But it's a linear exercise on the bike, you do need to try and get them exercising and all planes of motion. But as a starting point, I wouldn't pretend that cycling is any way of preparation for running. I'm talking about people who are starting off from from zero, you've got to get them doesn't have to be cycling, you could get them doing Pilates Reformer for six weeks or something. But you need to get them doing something. And but if it's cardiovascular as well, it helps them you know, in that sense, so that that, like, why would pick cypraea

Steven Bruce

I've just seen a question coming in asking what you think of the couch to 5k programme?

Clive Lathey

Yeah, that's, that's another interesting. You know, like, that was quite popular and locked down wasn't? Yeah, why it was popular before locked down, I

Steven Bruce

think as well, wasn't it? Yeah.

Clive Lathey

I mean, I have to be, to be honest, I'm not fully informed of that. I know people are doing it, though. But, but I think you know, any of those sort of step by step. Processes are good. I mean, if you,

Steven Bruce

I might be wrong, but I think the main aim of the couch to 5k was to get people off their asses, wasn't it? So another, as you said, it's bringing them back to a level of doing some exercise rather than saying you got to raise 5k It was just get there gradually, but do some exercise. Yeah,

Clive Lathey

no. And I think I think it was very important. The problem with that locked down is that you had kind of, I don't want to generalise but you had people that just ended up on the sofa watching lots of Netflix, and then yeah, the others that psychologically couldn't get to their gym. So they needed their endorphin release. So they got the shoes, dusted them off and went straight out the door. So

Steven Bruce

there's people watching Netflix, were probably watching Netflix before as well. And quite possibly, yeah. Jrg says, can you explain the difference between a flexible flat foot as opposed to piers plans?

Clive Lathey

Plan is when you've got the high arch is a fairly rigid foot. And actually, sorry, paraplaners high arch sorry, pesky Davis. Yeah, he's this is plumbers are flexible. flatfoot. Well, flexible. flatfoot is one that, you know, it's hyper mobile in some respects, but it doesn't have necessarily a good enough muscle turn to act like a sort of shock absorber. So, so if if someone's got symptoms, I mean, you wouldn't you wouldn't put orthotics and everyone who's got his blindness, but if they've got symptoms, then it's worth trying to prop the arch up. And because it's sometimes very difficult to start building up the transit muscles in the foot.

Steven Bruce

Yeah. And there are some some feet where you can't physically create an arch out there and no, absolutely be that will be rigid rather than Yeah. Okay, so we're getting gradually migrating towards the knee. Yeah. So runner's knee and my pressure, you better get to the simple basics. First of all, what is it and

Clive Lathey

well, I mean that there are lots of lower extremity injuries and I've picked them runner's knee because essentially, that's that accounts about 30% of lower extremity injuries

Steven Bruce

in sports people in all your patient,

Clive Lathey

I think we've got a slide talking about the the incidence rate, but in which will be in the handout that we'll send out after Yeah, so it's about 18% in the runners in patella, retro patellar pain and elliptical bands about 12%. But in the general population, sort of femoral pain can be anything in the order of about 12-15%. So you do have people with retro patella pain, who are not actually runners not necessarily doing sport, okay. So then the definition of runner's knee is what? Well, if you look up the definition runner's knee, the two things they focus on is iliotibial band syndrome and red patella pain. That that's that's given us the title runner's knee. Those those two syndromes. Right on there's a lot of overlap between those two syndrome. as well, right, so retro patellar pain but not patellofemoral ligament. No, but a retro patellar pain is actually the cartilage on the surface underneath the patella. There was thinking in the early days that a lot of it was due to patella tracking that the VMO vastus medialis, oblique muscle was weak and the tracking was the problem. We now know from functional MRIs and research that actually it's not the patella tracking, it's more to do with the femur over rotating, right? Because of a lack of control further up the chain. Yeah.

Steven Bruce

So the whole business of building up VMO in order to correct reseller tracking is misplaced and potentially

Clive Lathey

well not not misplaced in the sense that you would probably do that in addition, but but if you think about the muscle mass you've got you know, if you look at the trunk and the pelvis, that's two thirds of your muscle mass and a much bigger muscle groups up there, they're gonna have more influence on your biomechanics than a very small muscle. It's not to say that muscle isn't important because it's very much involved in patella control. So you would do that as well as the other muscle groups.

Steven Bruce

That move annoyed Fiona apparently because Fiona says that she disagrees about, quote, most running clubs, you think that that's a gross misconception? Sorry. Well, this presupposes therefore that Fiona knows about most running clubs, doesn't it? So?

Clive Lathey

Well, I'm not a bit unfair to say that. But what I mean is that the running clubs, the ones I've spoken to anyway, they don't necessarily do I think the probably, you know, the education levels are rising, I think they probably are doing more cross training. But maybe I'm talking about a few years ago, where it seemed to be people were split into groups of ability of running. And that's what they did.

Steven Bruce

I didn't have a great experience of running close. But the one that I have encountered locally here is certainly of that nature. There was very little coaching, it was split into groups, based on speed and distance. Yeah, I mean, they go off and do your thing. There's lots of different types of programmes as well.

Clive Lathey

I mean, we have players running, which is, you know, which is a particular type of running by invented by a man called Nicholas Romanov, and that sort of landing and mid stance, mid foot running and keeping and short stride length. And you know that that doesn't suit everybody. You know, it's interesting, there's, there's a conflict and controversy about should you land on your heels? Should you learn the mid foot? Actually, if you look at the heel, it's very interesting, because

the calcaneum has thin cortical bone, which is highly vascularized. And a great deal of fat tissue in sort of pockets. And actually, on testing, it has twice the shock of this good elastic properties and shock absorbing absorber thing, right. So actually, the heel is actually quite a good shock absorber, in fact, and it distorts to about 30%. When you're when you're when you're running, if you've got running shoes on then that combined the sugars about 40% absorption of shot. If you're barefoot running, then you're putting, you're getting about 6% distortion. So if you're barefoot runner, running out here, you can end up damaging the hill ultimately, and the

Steven Bruce

fat. Okay, so since we're on that subject, we'll get back to the knee eventually, in terms of in terms of barefoot running, I think I can probably say that the consensus in the past on the show with people talking about that is that barefoot running suits, some people, it doesn't suit others, and it's not something you should go into straightaway. You should get yourself in gradually. Are you a fan of barefoot running?

Clive Lathey

Well, I think it's horses for courses, like you say, I mean, you if you're going to do that kind of running, you've got to have a particular type of biomechanics and foot type. And you're not going to do that as a novice, because most novice runners do land on the heel. And, you know, as a whole, you need to be sort of re educated to how to run barefoot. So going back to the knee,

Steven Bruce

unless you want to start with the car, the car is called disasters. A question about that. Okay, well, I've

Clive Lathey

got to say that the Achilles actually was quite an interesting shock absorber, where it sits in the calcaneum. It does a sort of 90 degree turn. And it gives it kind of like a spring like property and the tender Achilles absorbs about 30% of the ground reaction force or is grok effects who says the gravitational pulse Yeah, so if you add all these different structures up, as you say, was absorbed by the calcaneus. It's about 30%, as well. So so if you add the calcaneum, and the and all the other structures, the fascial system, you can see that we're actually very well adapted to load the problem, and we will get back to the knee in a minute. The problem is that you've got to stay in the Goldilocks zone under the bell curve. If you do if you don't do enough, and you're deconditioned then you're gonna get patellofemoral pain, you'll get other syndromes in the other end of the scale and you're doing Ultra distance, then you're much obviously much more injury prone. I've actually seen more athletes doing Ultra distance, and I saw someone read Recently he does the arch to arc, which is Marble Arch to Dover Road, tunnels, women cycle to Paris. So these sorts of events are pushing, they're causing real stress reactions, actually. And there's an interesting study done in Holland, where they took 20,000 people and they follow them in their in their life. I've got my mommy, here's the study 1976. And actually, the people that ran between 10 and 20 miles a week, live six years longer on average than the ones that did 30 plus miles a week. So you know, it's illustrating the there is a stress reaction if you go too much download the belco. Yeah.

Steven Bruce

Just quickly, before we do move on, you talked about gradually building up stressors as an outward to what extent as the cocaine lum adapt to those stresses, how much of those fat pockets change? Or?

Clive Lathey

I don't know the exact answer that I just know that they are vulnerable to damage, and that if you're a barefoot runner, and you're landing very heavily on the heel without having a shock absorbing shoe, if you run too many miles a day, more than 30 miles a week, then you can suffer damage to those factors, which I don't think fully recovered, I think it becomes, you know, divert sort of pathology effectively and loses a lot of its shock absorbing quality.

Steven Bruce

I imagine you must have seen quite a few stress fractures in your time

Clive Lathey

I have it and yeah, and stress fractures, that there's a vulnerable group, if you've got young women who you know, dysmenorrhea and they are underweight, that you know, that you will have to bear that in mind, particularly with femoral neck and, and lower tibial stress syndrome, so we do stress fractures as well. You know, I

Steven Bruce

was thinking of the calcaneus or calcaneus.

Clive Lathey

I've seen many of those more in the metatarsal on the second metatarsal and and lower to fibula and stress fractures occasionally, but a number of hip related ones. Right. Okay.

Steven Bruce

corbs his question was, can you could you tell him how to cure old man's cough? I don't know what old man's cough is. I probably should I think, but

Clive Lathey

I'm yeah, I'm not quite sure what he's referring to. I mean, you mean someone who gets recurrent calf strains. If you're talking about someone who who keeps getting injured, then the quality of the rehabilitation is really important. And one of the things that people don't do enough for, and I'm talking about calf rehabilitation, specifically, is work on the soleus muscle. Because very few gyms have a machine I once belonged to a gym that actually did have a machine for Celeste. You sat in it and you put the weight on and you actually just lifted the heels off the floor. And that was very tough, very much targeted Celeste. So you can do that sort of exercise in the gym with putting weights on your, on your on your lap on your knees. But very often the Celeste is undercooked people do a lot of straight leg raise or straight calf raises with with or without looking at the soleus muscle.

Steven Bruce

What about stretching of gastroc and soleus? Do you think that's important?

Clive Lathey

Yeah, I mean, again, stretching is a another controversial subject. I think generally, if you look at the literature, they recommend ballistic stretching before you go out and do a run. And they recommend the more gradual myofascial type stretching after you've done the run so so the kind of sort of thing you do before you went for a run would be sort of running on the spot, maybe doing

squats and lunges and just do something dynamic. So basically warming up. Yeah, essentially warm up, but you're also stretching the tendons and ligaments, your proprioceptive firing them up as well, which is a good thing. I once made a big mistake. I worked on the PGA circuit on golf. I don't want to get onto different subject but I did a big stretching session on him before he teed off and I did the exact opposite of what you need to do. I relaxed everything off. So by the time he hit the ball on the first day was sort of floppy and had lost all the viscoelastic properties that I never did that one again. But what you're saying is he didn't do well. And he blamed you. Well, yeah, I don't think he knew I was the cause. But right now Me neither. Yeah. So with with iliotibial band syndrome, very often it's part of what you call trick and Tarek syndrome. So you quite often see the classic trial of glute medius, turning up the sometimes trick and take besides us, and then the the iliotibial band syndrome itself, which is the irritation of the Kaplan's fat pad, as the tendon goes in and attaches to the lateral part of the of the tubercle. The the the iliotibial band comes down it splits into two parts of the part that attaches into the upper part of the tibia acts like a ligament, and the other part attaches, acts onto the femoral condyle acts like a tendon attachment. And if you've got strength depth to tire up, and when you're landing your knees rolling into valgus, then it's putting extra tension through the iliotibial band, the iliotibial band is supposed to be taught, I mean, you know, people obsessively roll away on it trying to loosen it up, which by the way, doesn't work if you roll on the fascial. But you have to do it up here on the muscular part. But also, it's meant to be taught if we didn't have the editable bandwidth, the it's got the constitution of Kevlar, by the way, is almost bulletproof. If you didn't have it, when every time you hit the ground, your femur would literally buckle and snap. So there's like a kind of spring. So it's meant to be taught, it's just that if you have faulty biomechanics becomes overly taught. And so then you start getting these problems where it attaches into the, into the lateral part of the knee. That's probably

Steven Bruce

one useful lesson already there isn't there because, as you say, people with rollers or whatever, are very fond of working on the bit of the ITB. Which may be hurts a bit more than the rest, I don't know. But yeah, we've had several people on the show and fascia specific fascia experts, so you can't stretch this stuff. No

Clive Lathey

one when I worked at the Olympics, with with a whole group of physios, we were talking about how in gyms, you will see people rolling away on the lower part. And actually, if you're going to have any influence on the fast, you've got to you've got to loosen up the muscles that attach into it. So glute medius, glute Maximus, lateral part of the of the quadricep. You and even the hamstrings, but you're not going to achieve anything by what rolling away on the band itself.

Steven Bruce

Should we talk about symptomatology and things like that for ITB syndrome? Generally,

Clive Lathey

I mean, normally, it's a sort of insidious pain, it starts off as a sort of dull, aching pain. It it, it very often happens whilst you're running, particularly towards the end of a run. And it's often if you've changed a distance, we've been doing hills, you've done something different, and you haven't really prepared yourself. So you start getting a sort of dull, aching pain, it gets progressively worse and it's come it starts earlier and earlier, each time you having a run. And then you start to notice it in activities of daily living, start noticing it go downstairs and you know, as a thorough, horrible sort of burning pain. My patients love it, because I've had most of the symptoms, I've actually been having

exactly that on this right knee. So it's a very unpleasant burning pain. And the differentiation of it is to make sure you haven't got any sort of lateral meniscus or lateral collateral ligament pain. So yeah, I mean, the differential diagnosis is done with through clinical testing. You can image it, obviously you can, if it's not resolving, then you would do MRIs and so forth. And, and you can pick it up then. But in terms of orthopaedic interventions, it's controversial whether you inject the captain's fat pad lighter cortisone, because what you don't want is to shrink it. Because if you shrink it, then you're damaging its whole function. So the sports doctors, I do a lot of work with a very reluctant to do that. Unless, of course, you were an Olympic runner, and you had a 1500 metre race and you're, you know, it was a life or death, though you'd inject it in certain circumstances.

Steven Bruce

When you see that, clearly, if you are a sports doctor working on an Olympic athletes, you know, your stuff. Yeah. Are you suggesting that there are people out there who are not so well informed? Who will inject these things too readily?

Clive Lathey

No, I think I think people are quite cautious of hydrocortisone. Generally, nowadays, and, you know, I can't speak for every country. But but you know, I'm getting more patients sent for dry things like shockwave first, rather than necessarily hydrocortisone, don't get me wrong, it has its place. And I've had both shoulders and one ankle injected, and it was really helpful. But I think you have to be mindful of the fact Well, first of all, it's got a law of diminishing return, you can't do it more than a couple of times in any extended period of time. So you wouldn't necessarily do it as your first choice. But But if someone's not responding, they've got a big event, then you may be, you may have to do that. Yeah.

Steven Bruce

I've had a question from Claire, who says, What's your opinion on stretching? And, uh, you did touch on that earlier on? Because you said it was

Clive Lathey

controversial? No, I do think stretching is important. And I think if you look at the animal world, you'll see the animal animals all are always stretching. So I think shortened tightened muscles are physiologically less efficient. So I think the point is, whether you do the stretching before you do activity, or whether you do it afterwards. And the general consensus, if you look in the literature is mostly do dynamic stuff at the big when you're pre exercise. And you can stretch for long periods of time after exercise. And I do think if you're going to target fascia, then you have to hold stretches for much longer than you do just for muscle tissue. So I'm a big fan of doing stretching post event post exercise, I'm not against it at all. I just think it can affect you. If you think about the viscoelastic properties if you stretch too much before you do an event. And it can happen with running particularly in rotational sports like golf and tennis. You You can actually damage the some of the, you know the energy return systems. In fact, you're storing up energy in the myofascial tissue. And if you stretch it out, you're losing some of that, that that rapid shortening.

Steven Bruce

Dawn has asked if you could explain a bit more about the faulty femoral rotation in runner's knee and the associated muscle imbalances that we might see.

Clive Lathey

So if you, if you're looking at how a runner lands, and they go into pronation, further up the kinetic chain, the internal rotation of the femur is being controlled essentially by the gluteus medius muscle. Now the gluteus medius, and the maximus muscle, obviously, external rotators. But they play a role in in breaking an E centric way controlling the internal rotation if you've got weakness, and this happens a lot in in recreational runs, if they've got a day job or they spend, you know, 40 5060 hours a week sitting all day, then there's a very good probability that if you test them, that the glute medius muscle is weaker. And that may not have ramifications for just walking around with you start loading the body. And don't forget running as a one legged sport effectively, if you're landing on one leg, and then the other and you don't have that control at the perfect level, then you will get extra internal rotation and that that's what triggers off all the soft tissue problems. That affects the patella tracking because the femur is rolling in too much. It also affects the elliptical banks under compression, right? And it's it's a compression syndrome rather than a friction syndrome.

Steven Bruce

So what's the cause of that? gluteal weakness generally? Well, if you're a runner, you'd expect well it's going to be acting, it's going to be controlling that internal rotation.

Clive Lathey

To a certain extent, yes, but but but if you if you work out, how many hours are you sitting at a desk and computer? How many? How are you doing a run? You know, there's a there's an imbalance. And in my experience, most people, you know, if they have gotten a glute weakness, it tends to be minimised on Medius because they control in a lateral plane transverse plane was most people are using the glute Maximus on a daily living because it's sagittal. And you go up and down stairs and things that tends not to be as weak as the other two. However, again, if you're if you're talking about loading and going for a long run, then you probably won't necessarily have the strength unless you've done some work on it. I mean, not everybody has to do with cross training. Some people, you know, are lucky and don't get injured, but there was outliers, you know? Yeah, and everything.

Steven Bruce

Good. Linda has asked what test you would suggest to a causative pain from Goody's tubercle.

Clive Lathey

Well, there's the noble test where you're basically you get the pain at 30 degrees of knee flexion. So you need to get them standing and doing a sort of knee flexion position and you feel over the goodies. tubercle remind me where the tubercle is. It's underneath the iliotibial band where it attaches on the lateral femoral condyle. Right. We'll do that on the other knee so the cameras can see Yeah, it's on the outside here. I've got actually got a picture of if I quickly try and locate it. And trying to get through the slides is the tricky bit. Okay, yeah, it'll warm up in a sec. Yeah, it's warmed up getting there. So if we go to the actual specific picture, which is coming up, yeah, there we go. So you can see the captain's fat pad, that yellow structure sitting on here. And here's the the attachment. And this band ends up getting this because the muscle higher up has got so tight, the little wheel band is now very, very tight. Yes, every time your knee gets into 30 degrees of flexion. At squashing the captain's fat pad, this fat pad is full of pacinian corpuscles. So it's very tissue neurologically innovative that's very sensitive. That's what gives you that kind of burning pain. So in order to reduce that loading through that area, you've got to look further at the kinetic chain and start identifying where you've got weakness. So it's also is a bottom up and top down. So you're looking at what's above how that's affected, but you're also looking at the foot. And if someone is not controlling pronation, and they're and they've got excessive pronation, then you need to do

some work on the foot as well, quite often it's a bit of both. So it's either a top down or bottom bottom up

Steven Bruce

urgency is it generally both I'm not suggesting you work to a set protocol for someone who comes in with a with a knee problem.

Clive Lathey

Now it quite often is both and similarly, not only do you have the fat pad issue quite often you find people have got glute medius tendinopathy because that muscle because it's weak, it's under mechanical stress. So the tendon attachment becomes inflamed. So I very rarely see people with ITB syndrome that don't have glute medius tendinopathy and I usually am lucky enough to get them scanned or they have an ultrasound scan because I've got one in the clinic and one of the physios does that till you can see it or or you can do it on MRI. So and sometimes you see the trek and tear it bursitis as well. So you get that kind of drug enteric syndrome, plus this

Steven Bruce

one of my earlier speakers So that glute medius tendinopathy is one of those very much under diagnosed problems.

Clive Lathey

I agree. Yeah, I mean, it's because of the of where it's located. And because it's quite deep, it can quite often get mistaken for back pain. But there's another issue because we quite often have back pain with it as well. Because if the glute medius muscle is weak, there tends to be more loading on the lumbar sacral joint and there are four or five facet joints so they can become a part of the syndrome as well. So I very often if I see this, I quite often find restrictions in the low back so I'll work on that. So I mean, that's, that's a great thing about, you know, hands on therapists, whether you're an osteopath Cairo physiotherapist, we can be body mechanics, we can we can not just focus on the on the problem be and be reductionist. We can look at all the things that are a causative, we can work on prevention, and also we can improve performance. So you know, you've got three things, by by not just focusing on the knee by looking at, you know how this has come about. And so it just to add to that, very often you see people who've had it ligament injuries and their ankle if the head inversion strains. We don't know if there's that mechanism, but that often causes over activity of perineal muscle that seems to have an inhibitory effect on the glute medius. So you do see people who've got a history of ankle problems, and they ended up getting anterior knee pain, I led to a band or patellofemoral retro patella problems, right.

Steven Bruce

And I know we very shortly we're going to do some practical stuff here plans already asked, Do you have any favourite glute strengthening exercises?

Clive Lathey

There are very many, I always get people starting off on the very basic ones, which are the typical sort of Clan ones plan with bands. I mean, the problem is a lot of people stop at that point. And there's no way that that's enough to to deal with the loading that you've experienced when you run. So in answer to that, I get them doing all sorts of my favourite is using cable systems, because you're standing on one leg, which means you're kind of essentially working in one site to stand out while you're actively working on the other and then I switch legs around and make them always make

them do both sides, not just the symptomatic side. So you can do very good cable exercises, quite lightweight, just going for control, you can do glute minimis medius, 45 degrees, glute Maximus, and then you can add all sorts of more dynamic exercises and you've progressed through weight training and resistance training to lunges, lunges with weight, you know, there's a whole plethora of exercises, and then there's, there's a lot out there.

Steven Bruce

I suspect you have to set your aspirations a little bit lower when you're dealing with the average member of the public as opposed to a dedicated sportsman. He just doesn't want to go to use a cable.

Clive Lathey

Of course, you have to you have to make the exercises doable, I know give people more than four. Because otherwise the compliance rate plummets, you know, and you don't get them doing them every day strength training, you just I usually say three times a week, day off in between, and you give them minimal amounts, obviously it depends what they want to achieve if they're someone who just does 5k Every now and then you're not going to get them doing in a programme of an elite runner, but I do see a spread you know, I'm seeing you know, I used to look after Christy Wellington, the world champion triathlon. So I've got people have a very high level and but I equally enjoy treating people who just want to keep fit, and you have to modify your, your rehabilitation programme accordingly. We used to send them out in video format, because that really helps as well. You use rehab my patient I think don't Yeah, we do have this Tim. Tim anodized I know very well. And that's a good programme. I think people people struggle bits of paper and little stickman I think I think if you've got video exercises as much

Steven Bruce

Yeah, I think in this day and age people expect that quality of media don't

Clive Lathey

interesting the NHS still handing out bits of paper. So I I imagine that's going to change, maybe not all at all. I don't want to get in trouble because I don't want to say that all NHS locations do that. But the ones I come across, give up bits of paper. So I think that is better.

Steven Bruce

Well, I think we're itching to go and do some some practical stuff. But before we do a completely unrelated question to runner's knee is coming from someone who's been given a PVC long and alphanumeric name. It says At what age would you start to support or correct PES? Planus. I'm thinking of my very flat footed eight year old daughter whose very little toe off due to hallux valgus. bilaterally. hallux valgus in an eight year old, that's surely very rare, isn't it?

Clive Lathey

Was probably Yeah, it's probably a genetic well, it will be a genetic cause. I think the trouble with that question is that I've asked that exact question to a number of podiatrist might have different answers. So I think I think if you've got someone young, you probably be inclined to try and give them exercises, you know, things to build up to Join breakfast and do lots of toe curling exercise, I think you wouldn't want to shuffle on straighten orthotics. That's what I'm talking about the diet that works with me very, very conservative with orthotics is

Steven Bruce

quite caught for suddenly embracing, isn't it? If you give a child that age and orthotic, then you're perhaps denying the body the opportunity to develop the strength that it needs in supporting structures? I don't know.

Clive Lathey

Well, I think I think when you Yeah, exactly. I think when you've got someone who's quite young and resilient, they've got the capability to try and do exercises first. I mean, you've got you're in a win win, because if the muscles don't work, then you can give them the orthotic perhaps, but I would, personally, I don't, I don't sort of have a hard age line. It depends on each person. But I'd be very uncomfortable suggesting someone goes on. I thought he's on stage, but 12. But you know, I may be wrong. I mean, but somebody might not agree with me.

Steven Bruce

Certainly with an eight year old worth snorting the water to curling exercise is definitely

Clive Lathey

worth trying the X rehabilitation because it's not going to make it worse. So yeah.

Steven Bruce

Now before we get up and move, you brought your little blue toy with you today. So you, you better tell us what this little blue toy is all about before we go from

Clive Lathey

Yeah, and this is struggling to remember the name of the company with active force, active force, right? I think they'll kill me if I've got it wrong, well, we'll we'll find out, we'll send that out. So this is a thing called a handheld dynamometer. And you can Bluetooth it with your phone. And you can use it for measuring muscle resistance. So you get some data. But it also does range of movement on joints. So you can put on a joint and move it. So it gives you objective data. And it's it's very easy to use, it's not expensive. There are I think this is about 400 pounds, right? Which considering its capabilities is actually quite good. And I can give you give the details of where to get it from Sure. But the thing about this is, it's really great when you've got runners, particularly when they infuse Yeah, stick club runners, and you've got some baseline data, because you can, you can also do this preseason. I mean, quite often I just test people, irrespective of any symptoms, they come for a checkup, and I do testing, so we've got a base level. And then if they've got any injuries, we've got some data. So it's quite useful. And it's very versatile. I used to work in a clinic years ago where we had these big King Kong, fixed machines. And the one we used was called a cyber 340. Grace client. Yeah, the problem with those is they're very fixed range of movements. And the beauty of this is you've you've got adaptability, you can do mid range and range. So

Steven Bruce

if you were going to test your hip flexors with that, that's just makeup and something you might want to do. There's what there's a bit that presses on the leg,

Clive Lathey

and you'd be basically hold on to that, and you're only pushing this against and you're you're getting the patient will run it push against you, for however long you want five seconds or so 10 seconds.

And then you can you can do in the case of the hip flexor, you could do it full range, or mid range or n range. And probably not on the end of the table.

Steven Bruce

I do like things like this, because they give you a much more objective answer then sort of rather random muscle testing that we do just by and if you can't

Clive Lathey

remember what you did last time, you know, and you know, get all that feels better than last time you've got no idea and the patient I suspect the patient's more satisfied that they've got a patience love it because they know that you've got objective data they and you can say oh look, your strength has improved by 10% this and this these are figures and because you blew to fit to your phone, you can then print it off you can and and that's really useful for patients. So it's great.

Steven Bruce

Yeah. Should we go and have a look at our long suffering patient James zoom once again with yet another problem.

Clive Lathey

Hi, Jack. Right. So you you told me you run? Five, how many k a week roughly. Okay, so you're you play football as well? Yeah. Okay, can I get your standing, let me get you to turn and face me. So I'd start off. If you stand with your feet, that's perfect, actually.

So what you're doing here you're getting, you're looking at the ground level first. So we can pick up the stand slightly externally rotated his left foot. So you've probably got a little bit of tightness in his left gluteal muscles. But we'll see that a bit later. He's got a little bit of a slight hallux valgus. It's got good arch maintain, maintain arches, you could do a little measurement on what on the navicular. And that gives you a little bit of data. You can measure the height, and then you're looking at the knees, see whether he's got genu valgum, or verum is pretty externally rotated on the left one you're looking at where the patella sits sits between the first and second which is great. This one sits slightly lateral medial to the big toe so that there is a slight difference and again, I think is the way you're standing. Also, when you're looking at you further up the kinetic chain. There's a slight tendency for the shoulders sit a little bit high but very subtle and you're right handed. Doesn't feel that right shoulders over it forward. So what I'm going to do is get you to turn on face the other way, let's have a look at you this way. And we can see from the back, we can see that left foot slightly more externally rotated. Makes it a little bit of a, probably a mild curvature, mild scoliosis there. So what I would do is, first of all, select a foot level, I'm just going to get you to bend your knees for me, because I'm now looking at see how tight your calf muscles are, and come up again. Okay,

Steven Bruce

um, so hang on, you want me to bend his knees, but you're going to bend him to the extreme range. So let's see how far he can do that.

Clive Lathey

I was gonna do that in a minute. I just want you to try and do a little squat for me to squat down as far as this comfortable. Okay. Can you go any deeper than that? Okay, so it says that you're really struggling to try and be upright. So if Trump should be a lot more upright, you're pulling into flexion and you've got a lot of tension down the side and go up again. Okay,

Steven Bruce

he's got his he's resting his hands on his thigh. Yeah. So

Clive Lathey

we're cheating a little bit there. But yeah, okay, I'm just gonna get you to lean down to your left side for me as far as you can. Okay, and then down to the right. And you're going to tell me you haven't any history of any back pain. That looks good. Okay, so and lean back attached towards me. Good, gets a little bit stiff down here and then roll down towards your toes just as far as you can. Okay, and come up again. So we're just assessing general lumbar mobility, I'm gonna get you to hold, put your arms out in front of you. And I want you just to twist around as far as you can to the left. Okay, so we're looking at the thoracic or lumbar area. Okay, and then round to the right. Okay, so you're quite stiff through there. So if you were a regular runner, with that, with that degree of stiffness, and not getting as much rotation as possible, you'd end up probably using more calf efforts to drive you forward. And you quite often see a correlation between stiffness here. And overactivity of the calf, as you're trying to make up for the for the lack of rotation.

Steven Bruce

While you're on this bit of Jack's back here, we had a question from Trev, who says, What are your thoughts on si je misalignment causing a muscle contraction or tension reaction through the lower limbs as well as causing each leg to function differently? He says he had to stop running due to a very painful left calf, when he eventually sought out the SRJ he felt a warmth and it will disappear.

Clive Lathey

Yes, I mean, I think whether it's sacroiliac, or lumbar sacral is another contentious issue because the as we get older, obviously the sacroiliac joint loses a lot of its mobility. But I do think that working on the sacroiliac joint, if you look at the work of Andre Leeming, you know, he does believe that that is an area that causes symptoms. So, I mean, I would, you know, when I'm working, when I'm a soldier on, I would do a lot of mobilising of the of the sacroiliac joint as well, because very hard to split the two because obviously, they're connected by the lumbar ligament anyway. Okay. Let me get you to turn on face. Mm hmm. So what I'm gonna do now is just to see how you're off balance. So if you stand on your right leg for me, okay, and then pull up, bring the knee up, that's good. Okay, just hold it there. You've got you do that. We're not gonna do it now. But you try and hold it for at least 20 seconds. Okay, and then we switch legs round. And what we're looking at here is your ability to keep the pelvis level and whether you're compensating by bringing your knee across which you are a little bit there. Okay? And then down. Okay, and then we'll do that again. But this time, we're going to do it with your arms above your head. Okay, so bring that and you can move your arms around and make it a little bit more challenging. Just checking the proprioceptive activity going on in the foot. Okay, and then switch legs around. Okay, we can see a bit more activity in this right ankle. And I think, am I right in saying you've injured that ankle? What did you do to? Okay, and did you do a lot of rehabilitation afterwards? Did you do much balance work? Okay, but there's still some subtle difference. And there's also a lot more tension on that left side where you were on crutches for a while? Yeah, yeah. So probably you're walking around putting a lot of extra weight through that left side, which could explain why there's a lot of glute tension on that left, left, left side, if you take a step or two, if you if you I'm gonna get you to do a sort of lunge movement, because I want to see what happens when you do a lunge. Okay, let's go back. Just do that once more with the left one. And you can bring your arms above your head when you do just go back. Because what you're looking at here is a bit more dynamic. You're just looking to see how much the knee drifts in again,

and then we'll do the same on the other one. Okay. Yeah, you can see on that right side bigger, quite a lot of quite a valgus drift and probably what's happened there is because of the ankle injury, it's had a kind of kinetic chain effect and you've probably got some weakness and lack of control up on the on the pelvis there. Okay. You can you can do that. You can do all these sort of other tests, like drop tests when you have a little low step. Do you make it a bit more dynamic, and it's actually quite good to film, people's you can use things like dark fish and some of these other apps on there, you can slow it down and show the patient. Okay? Right coming alive onto your back for me. So I'm just gonna do a bit more of a joint assessment, before we start looking at how tight muscles are to bring both knees up, I don't normally worry too much about leg length in the non running population, but because a leg length difference in a runner can be magnified the force that I do have a quick look at that. So just bring the bottom off the table and drop down. And again, we're not worried unless it's significant. Or what's significant to are probably more than five millimetres. And that is probably, I'm not measuring it. If you if you it's probably a couple of millimetres. If you want to be really specific about it, you take a tape measure from the ASIS and down to the lateral malleolus. And take proper measurement and do both sides. It's it's controversial whether trying to and to make everything equal and, and look nice. Again, in Iran, or if they if everything else is not work, then it might be worth with doing that. So now I'm just going to assess the sacroiliac joint. So I'm doing some springing on that, see how tight that is. And it's pretty tight on this left side. And while I'm here, I will do a testing on the hip. So I'll do the for dear tests or femoral internal rotation. I'm just trying different position positions to see if there's any any sort of catching. Okay, on the assembly all the way to the favourite test. Okay, I think see that's quite tight through there. But also, as we're looking at the iliotibial band, we would do the noble tests, and we would basically take the knee into flexion. And at 30 degrees. If there were some irritation of the Kaplan's pad, we'd probably feel soreness and maybe a little bit of catching but a thickening, what do you palpating while you're doing doing over the attachment point, could you do that on the other leg so the camera can see? Yeah. So basically, I'm finally at the point in here. And then you're just extending the knee and then going up to about 30 degrees, and you're just basically feeling if there's any catching or pain. Is it saw on there? Is that okay? Yeah, you haven't actually got it, we wouldn't expect. But that's, that's the noble test. And you can in this position also you can, for retro patellar pain, you can actually start doing some apprehension tests on the clock tests where you're basically seeing how much glide there is. And again, with retro patellar pain, you'd expect that to be very tightly bound. And you're looking at how much blind there is, when you see retro patella pain quite often. You can barely move it. Yeah. And so So I would do the joint assessment, and then we'll look at how tight you are. So retro patella pain, and you find that doing that Clark's test, you can barely move the patella, but it's all about it. Well, then you start doing all the soft tissue work and working out because actually one of the biggest predictors of retro patella pain is actually tightness in the in the quadricep and the rectus femoris. So working on that muscle quite often releases a lot of the patella tightness. So, yeah, so basically, in this position, we'll start off with just do a little assessment of different muscle groups. See how tight things are. So if you lift this leg off the table, try and get the knee as straight as possible, you should at least get up to about 80 degrees. Okay, so that's good. And then down. Measure that was probably about 60 Wasn't and then do the same on the other one. Okay, so there's quite a lot of difference there isn't. So there's this tension down this left side, which again, I think, as I said, I think it might be related to when you're hopping around on one leg. Okay, so I'm gonna get you lying on your tummy. And we'll look at, see how tight your quadricep muscle is. So what we're doing here, just bringing the knee up the foot up towards the buttock. Okay, so quite, I mean, most people can't get the buttock on the the heel on the buttock, but it should be less than about five inches. So those do you do much stretching on your quadricep you can see, okay, and then switch legs around. And that one is even tighter, so you can see a huge difference. So you're

quite a long way for that. So there's a lot of tension in your anterior compartment. You haven't got any symptoms at the moment. But I would recommend that you do some stretching on that because there's things that you need to get right. Which which will help you prevent injury. I know you're not doing a lot of running, but cumulatively this difference could end up being a problem. So while you're in this position, you can also do a little glute activation. So I'm going to get you to lift the leg off the table straight. We're not just yet. So one thing here is the glute and the hamstring. So what should happen is the gluteal muscles should tense first of all about the hamstring. So if you lift that off, okay, and down, and then we compare it with the other side. Okay, so it's a bit subjective this test, but I can tell you that this feels this tightens up much more quickly than than that side. So that's sort of reinforcing this, this tension down this this side, which I think, as I said, I think it's probably come about from having put a lot of extra weight through this side. So we got a proprioceptive problem on this side. And we can see that from the balance that is wobbling around a bit, because probably, you need to do a lot more exercise than you think to get all the proprioception back. And it takes a long time, it can take up to 12 months, quite often. Okay, so if you can lie on your left side to face me, again, that's a useful thing to tell the patients, isn't it, because yes, they will expect to be fixed in a few treatments, and they want it done in treatment, it's not in their own work, they're quite often symptomatically. And functionally, you know, good enough to get around the place. But if you're talking about loading and running, and being able to take all that weight, you've got to have that proprioception firing optimally, because if things aren't, then then you're gonna get problems. So I'm just going to do a little test on a physical the over test. So this is testing the glute medius tension, so I'm gonna get you to bend that knee writer. And what I'm looking at here is how tight is there. So we're actually doing on the less tight side. So I'm just holding on to this, and I'm going to let that knee drop down towards the table, you're actually quite good. I see people when it's right up here, you let go of the knee and you let it sink down. And that will give you an idea. Let's

Steven Bruce

look, is this over or modified over? There's two variations of it on

Clive Lathey

that that was pretty modified. Yeah, can you learn in a second, let's just do it on the other side, just to see whether it's gonna bring this leg up. Just like that relaxed there. Yeah, I mean, that's there's a lot more tension down this side. So we've got tightness in the left hamstring tightness in the left gluteal muscle. So we, you know, we're building a picture up of how how much muscle tension there is. Okay, let's do another test, I'm going to get you to come and sit on the table, we're gonna do what's called the modified Thomas test. So if I lift the table up a little bit, this test is looking at how tight your hip flexor is, you can look at three things where the rectus femoris, the iliotibial band and the hip flexor. So I'm going to get into a bit more on the edge, Jackson almost falling off, and then lie back and bring your right knee up towards your chest, or the wall. That's it. Okay, so what we're looking at here is, is the is the hip flexor on this side sitting flat, which it is, it's not deviating so there's not too much tension on the iliotibial band, but the rectus femoris muscle here is very tight, the knee should be really about 90 degrees. So again, there's there's this tension down this left side. Okay, it's not as bad. I was expecting it to be a little bit more deviated like that given so the whole upper leg laterally deviated? Yeah, because if the iliotibial band is tight, or it'll cause that sort of drift,

Steven Bruce

can we do it on the other leg so the camera can see? Yeah.

Clive Lathey

So if we're doing that we're looking at, we're looking at how much this deviates out. So if the if there's a lot of tension, the little wheel band, and there's potentially, overactivity shortening and tightening of the glute muscle, you'll see it doing that. And if it's the hip flexor, you'll see it sitting up like that, on this side, the rectus femoris thigh muscles not as tight as it have on this site, because his knee is pretty much hanging down. Whereas on the other side, it's doing quite flat critical

Steven Bruce

is the angle of the the untested leg.

Clive Lathey

Well, this isn't too bad, actually. I mean, where do you hold this leg to make sure it's not influencing what happens the other side? When you hold this leg? Yeah. Well, I tend to just hold it up, just keep it at 90 degrees in the hip. Flexion. Yeah, yeah, exactly. You can, but when the other thing is, you can turn this into a treatment. So you know, if we say hypothetically, the hip flexor was very tight up here, you can then turn it into a muscle energy technique where you you're getting the most of the push against you. And you're stretching this out. And then you can also do it with you've been the knee and you can stretch out right for more, you can turn the test into a into a treatment effectively. Okay, and come up again and sit. Right and we get to shuffle up the table a little bit. What we had on there, so a little bit more. So if we're talking about so we're looking at we've we've looked at your life, let us say like that, actually. So we looked at what is actually tense. So if we if we're if we want to do the testing, now we'll use the handheld dynamometer. Thank you very much. So in this position, we could test the hip flexor either like this or we could do it with you sitting up as you're in this position. We do it like that. So I get I get to shuffle up the table a little bit more. The great thing with this is you can try and lots of different positions. So bend that knee up. And actually, we'll put that one down, get that out of the way. And then I put this on on here. And we can do a couple of tests one, so I get you to push against me, and we'd hold for 510 seconds, whatever you want to try. And then we do it three times take the best of three.

Steven Bruce

So when you're doing this, you are presumably pushing to the extent that he can hold that position as hard as you can. Yes. This is a question from Fiona, who says, What if your own hand strength has been affected by something? Well, actually, what matters is whether this is moving not whether your hand is yeah,

Clive Lathey

you might you were you could always wear a splint, you can actually, I haven't got it here, but you can actually fasten this on, you know, you can lessen the stress on your own body. And as you're in this position, we can also test the quadriceps. So I put it on here, and I get you to push your knee up towards the ceiling. Okay, so we could

Steven Bruce

do that's gonna matter where you put that because the leverage will be different. Yeah, well, you can

Clive Lathey

try different, you can also try different ranges. So you could try, you know, shortened range here, you can try a mid range. And you can try it up there if you wanted to get really into sort of trying

different ranges. Okay. And then if you get you lying onto your tummy, I get actually almost falling off, we're going to try and do the glute one, if you come down the end here from the jack, right down the end, that's it. Good. So we're going to do the the glute Maximus, we're going to basically I'm going to get you to push your foot up towards the ceiling. So I put this on here. And again, I get you to push. So we're testing glute Maximus, okay. And hold on, then we'd repeat the other side,

Steven Bruce

when you use this. Obviously, it's firing stuff to your mobile phone. Because every time you do one of these says you've got to write down what your phone says, or does it store them in order? Yeah, you just have to remember what order you did

Clive Lathey

them in? Yeah, well, you can put it I haven't got into that part of it. But you can actually have a chronological order as well. And as you're in this position, we again, we could do the hamstrings we push against me, we could try that. And we could try that, again, in different positions, if you want to try mid range and range full range. Okay. And then if you come and lie on your left side,

Steven Bruce

and presumably what you're really looking for, there is a difference between the legs rather than Yeah, exactly value for muscle strength.

Clive Lathey

Yeah, you're looking at how one side compares to the other essentially. So in this position, better, do a testing of glute medius. Now, you've got anterior and posterior fibres. So we're going to keep that bottom knee bent up like that. And then I'm going to get you to hold the leg like so. And we're doing an anterior, so I'm going to get you to lift your leg up towards the ceiling. And again, I would hold the problem with and that's it good, and then relax. The problem with quite often with glute medius, is that being an A muscle often works eccentric ly, sometimes you won't pick up things unless it's fatigued. So this is what I was saying earlier about putting people on a treadmill, after they'd been for a run and then videoing them, we didn't look at that on there do we

Steven Bruce

know, we might still have time, but we aren't inclusionary. Okay. And then

Clive Lathey

and then we do the posterior. So we bring the leg back to here. And we've got the leg out there. And I would test it in a different position. So again, pushing, holding, and then you could you can play around with that and trying different different positions. Okay, if you want to come along to bat for me, if you want to specifically test the iliotibial tensor fascia Lata, then you need to if I'm testing this side as that side easy for the camera that probably isn't this. So I bring the leg up to that six degrees of 60 degrees of flexion. Then I abduct 25 degrees and turn the foot in. And then I get your strong push against me out that way. It's quite a difficult one. So now I'm sort of targeting the tensor fascia Lata moving that you can. And this position, you could also in this position, test the hip flexor, by again, going at 60 degrees, but keeping it neutral with external rotation, and then I get you to push against me neutral meaning in the midline. Yeah, exactly. And then again, I'll get you to push against me. Okay, you can try in different positions, whatever feels comfortable for the patient. So that's, that's isolating earlier sauce. But I prefer to do that with either than sitting on the table on the edge of the table pushing, or, as we did just now pushing in that direction.

Steven Bruce

Okay. And then we're working on the lower limb at the moment, and this show is about the lower limb. But we have had a question from Simon about whether there's any problem using this if someone's fitted with a pacemaker. I can't see why there would be anything

Clive Lathey

there is but I'd have to ask the manufacturer didn't say anything about that. Well, I mean, the

Steven Bruce

only electrical output is a Bluetooth output around whether or not you're doing this testing isn't

Clive Lathey

exactly so we could also test piriformis so if you wanted to test that way, in this position, we'd get you to basically try and externally push against me. That's it. Okay. And relax. So you're getting sort of targeted, quite specifically, I tend not to test that one, I tend to be more preoccupied with the bigger muscle group. And given that there will

Steven Bruce

be people watching who say, Well, I'm not gonna spend 400 quid on a machine like this, because it always is too complicated. And I imagine that you for years have done this just by feel. Yeah, and you're gonna good enough, when you get a good enough answer for just feeling what's going on,

Clive Lathey

I think adds a lot of value to your treatment and people appreciate people love data nowadays. Yes, you know, and if you're dealing with with runners, and they're quite obsessive, they'll spend money on fancy shoes and all the kit. Yeah, they much prefer that you've got something objective, because then they've got something to work on. And then they've got you know, they know what the difference is, then you've given them a programme, then you retest them. And I think psychologically, it makes a big difference,

Steven Bruce

when there's a lot of testing going on so far, and we're nowhere near finished with treating this patient. How long are your appointment? Well, I

Clive Lathey

would 45 minutes. I mean, I would I would do this well, much faster. But I would do that in the probably you can probably do all the testing in 15 minutes, and still is your half an hour to do treatment. Okay. So you, you know, and it depends really how long you want to spend with a patient. But I think 45 minutes is enough to do testing and treatment personally.

Steven Bruce

Okay. Yep. Good. Okay. Have you done on testing with with Jack? No, because

Clive Lathey

I think so. Yeah, I we probably have left something out. But, but but it's on the

Steven Bruce

we've had some questions about rehab. And Jim said, What's your rehab protocol for glute, medial tendinopathy, media seminoff tendinopathy?

Clive Lathey

Well, you've got first we've got to get rid of the symptoms. So you can't really you, you could do low loading, which is not necessarily going to inflame it, but you've got to treat it first. Obviously, you need a different modality so that you shockwave use shortwave ultrasound, dry needling. If that fails, then I'm not averse to sending them to someone that consults with you injecting. But but you know, usually you get you do between five and six shockwave treatments first and see where there's made a difference. We're getting quite a

good your first treatment of choice as it were before before ultrasound or before I needles. I quite often do both. Probably, then you don't know which ones help. But he doesn't care. No, no, no. But But yeah, I

would probably if it's if it's been diagnosed as a tendinopathy. And it's been imaged and that's you know, that's the pathology, then you've got a choice. You could do Dr. Leaving, you could do ultrasound, or you could do shortwave, you know, your preference?

Steven Bruce

And when you do dry needling or you needling trigger points, or are you looking at sort of acupuncture meridians and acupuncture

Clive Lathey

trigger points, yeah. And I wouldn't necessarily stick them right in where it's really sore, I try and release the muscle tension further down to take some of the loading of the attachment point, because I have seen people with like a porcupine with or sticking in where it's actually saw. So I think in answer to the person's question is you get rid of the pain and the symptoms. And then you'd have a progressive loading rehabilitation programme. And you'd start off very low with things like clams, and then you build it up to resistance training. And then you can do functional stuff, you know, with a lot more resistance and more dynamic ballistic type stuff.

Steven Bruce

So is there anything more that you want to demonstrate on Jack before we go back to our seats?

Clive Lathey

I don't think so. Yeah, I probably have a setup probably have left something out. But I can't think

Steven Bruce

when people ask us questions, I'm sure. Yeah, thank you, Jack. Thank you very much again, for coming in. And let's get back over here for what

Clive Lathey

what I didn't do was the standing test where you where you basically get the person to flex the knee at 20. I tested at the noble test doing like there's a run a test, which is the same thing, except with weight bearing.

Steven Bruce

Right. Um, would you do them both?

Clive Lathey

Probably. Yeah. I mean, I could have done it when he was standing up. But you know,

Steven Bruce

I guess somebody might want to know, do you know the sensitivity specificity of the noble test? Is it good?

Clive Lathey

I was I was reading Carl Todd's excellent book, and I think it's got something like 80% specific specificity. Yeah, his book is actually very detailed. And it tells you that the six that sort of that rate, and when I say the word again, yeah, for each test,

Steven Bruce

okay. Let's look at the the questions that have come in while we've been over there. Jason says what are your thoughts on the common compensatory pattern and its effect?

Clive Lathey

Common compensatory pattern for for general injury or doesn't

Steven Bruce

illuminate any further than that? I'm afraid so. Jason, maybe if you can come back in and that is precisely what you mean by that.

Clive Lathey

Well, there's going to I mean, there's an answer the question there's always going to be a compensatory we could just say on Jack. You know, the effect of being on one leg with with his broken foot has already altered the kinetic chain on On the left side, and he stands on an externally rotated hip, and he's got a lot of hip tension. So there's always going to be I mean, the brains aim in life is to keep you moving get you from A to B. So it's going to Up, Up regulate other muscles and switch all the muscles off. So he's just going to, and the classic thing with, for example, with ankle injuries is how you get more neural drive to the hip flexor to try and lift the leg up because you can't push off with a calf. Yeah.

Steven Bruce

We've, we've had a question from the barefoot running off road cycling tree hitter, otherwise known as Robin, who is currently on the beach, apparently, indulging in Africa too. And he says, if it's relevant, he'd like to know if there's a link between moving to barefoot shoes and the development of sural nerve pain? Or was he just unlucky? He lasted about three weeks and happened after a year in barefoot shoes is gone now, but his feet are so much better overall. Yeah,

Clive Lathey

I think many of you if you look at the research literature on barefoot that does it don't you do get a multitude of different injuries, because you don't have the same shock absorbing, I think the good thing about barefoot is it does encourage you to run midfoot, which for some people, not everybody is as much there's less loading, because the dome of the tailless is designed to distribute load. So, I mean, the problem with is everyone, there is no obvious way of running, you know, an efficient

running is basically getting your centre of mass through from A to B with as much efficiency as possible. So, you know, there is no one way of running and everyone's different shapes and sizes. And you know, and but generally speaking, I think slower runners heel strike, the more elite runners tend to do mid foot forefoot, and there's their injury concerns with both if you do Yeah, excessive amounts. So, you know, again, it comes back to loading, how much loading you're doing. Okay, and are you cross training?

Steven Bruce

You keep coming back to cross training. So it's doing stuff other than just running?

Clive Lathey

Yeah, well, I, I sell it to my all the patients who like to run as a way of improving their performance and preventing injury. And you know, and there's no question that if you can fit nice, it's difficult if you're doing something like triathlon, because you're trying to do three sports as it is and trying to find time to do something else is, is very difficult.

Steven Bruce

But isn't that cross training anyway, if you do those three sports, it is

Clive Lathey

but if you think about it, the bike is sagittal, the running sagittal. And the swimming is social as well. And swimming is non weight bearing so as the cycling, so you're not really addressing any areas of weakness, specifically, the great thing about doing cross training is you can identify which muscles are weak, and you can do very specific work on them. So I think, basically, if someone is really reluctant to I get them to at least do it once a week, you know, as a as an ongoing maintenance. Your trouble is people you know, they'll do it because they think they have to do it for rehabilitation, but to try and impress upon them the fact that if you keep that going, it's actually going to help them keep away from injury. So there's a lot of value in doing that.

Steven Bruce

How would you answer this has to come from someone who is either calling themselves fix my run or they're referring to fix my run.co.uk. But they say that clams aren't really functional for runners and you mentioned climb exercises over there. We only recommend functional strength work for rehab or runners strength. Yeah,

Clive Lathey

I mean, I did say that, that acclaim exercise is not rep doesn't, doesn't do enough for you to be able to cope with the loading. But if someone is recovering from an injury, you've got to start somewhere. And yeah, so if someone's had glute medius tendinopathy, or they've had you know, ITB or retro Tiller pain, you would start them off. You know, it's like climbing a mountain, you starting off base camp. And you do very simple exercises. As you know, going back to Joe Elphinstone. She said, You know, you can't fire a cannon from a canoe is one of her catchphrase, which I use quite often.

Steven Bruce

So eventually went on the show a couple of times, I know it's well worth looking at her. When the recordings go up on the website, it'll be well worth looking at her shows again, because she's, she's not initially lovely, which is

Clive Lathey

I've watched her before and I've been to talk to you guys. But she would agree with me that when you're starting off rehabilitation, you start very simple and basic. No one's pretending that a claim is a good exercise for a runner. It isn't. But you have to start low and work your way up. You know, what you actually get to which is representative of running is when you're doing dynamic lunges, and you're doing side lunges, and you're doing resistance training. Because as we said at the beginning of the programme, the loads are enormous, you know, it's incredible. The body can cope with those loads. Yeah. I don't want to diverge but One of the one of the ways I get patients to think about how these things happen is I, I like Stephen, the late Stephen Hawking's definition of a human being. I don't know if you know what he said. He said, we're all temporary custodians of charged particles. Yes, I have no, I hadn't heard it. But yeah, which is, which is brilliant. And I say to patients, well imagine, you've got all those charged particles and you're hitting the ground. If all those forces are not being funnelled up correctly, and they're focusing on one area, then you start getting these particles breaking up. And that's what's happening at a cellular level, obviously, because running is micro trauma over time, you know, and it's accumulation of micro traumas that any strength training you can do is going to help and you're not just strengthening, as we said, you know, manual therapists, we're looking at improving the biomechanics. We want all the joints to be distributing load, but also not just as being load foot prevent injury, but if you've got an area that's very stiff, then you're developing torque, you're losing that gravitational pulse is is basically going laterally. It's it's diluting your ability to harness that gravitational or ground reaction force. Right.

Steven Bruce

Okay. Kim was asked what you would do about a posterior knee pain after Hill running?

Clive Lathey

Well, again, it depends on it's a difficult one, because the examining patient, I mean, you know, if the swelling around the knee, I think it's, it depends on the history, what you find when you do a clinical examination. Do you image them? Do you know? So is it that's a difficult one, if it's Hill running, and then there's a possibility that it could be a capsular strain, because you might not be used to, particularly the downhill but of Hill running is the problem more than the up? Because it's the downhill is a lot of eccentric loading, which is higher than going up. Yeah. So I don't really know how to answer that. Except that if I was seeing a patient like that, why would we do all the normal standard testing and if I thought it needed imaging, and it could be ranged, then I mean, you can do ultrasound sounds quite cheap, which is good news and those sort of things quite superficial. So you quite often do use ultrasound? Because obviously MRI is more expensive, although they're coming down in price as well. In the

Steven Bruce

bit of a diversion here from the back, backdoor team, we have apparently Facebook's auto captions misquoted your Stephen Hawking thing. They said we're all temporary aliens, apparently. Oh, you can't trust you can't trust AI, especially Facebook. No, he

Clive Lathey

definitely said we're all temporary custodians of charged particles, not aliens. No, no, I

Steven Bruce

love that description of human beings. Jim has almost what shockwave machine you use. And I imagined he means radial or focused.

Clive Lathey

We've got the road at one of the cheaper one. Yeah, I'm saving up for the focus one, although I don't know. I've got varying opinions talking to different physiotherapist about whether the focus is better. I think in theory, it probably is. Certainly the one that football clubs have. They can afford to get this big price difference.

Steven Bruce

There is indeed, we had a show about Shockwave. Not that very long ago when we talked about that. I think the the focus was in the 10s or 20s of 1000s. Yeah, it was the radio was about 5000.

Clive Lathey

Well, the one we've got was 12, I think. But when I looked at the focus one, it was started about 2025. Yeah, yeah, I thought we'd start off with that one first.

Steven Bruce

But about shockwave does have a good press doesn't have a specific condition. Certainly. Well, it can be effective.

Clive Lathey

Yeah. I mean, the interesting thing is that a lot of the insurance companies now pay for it as a separate treatment. And they'd only do that if the evidence base was strong enough, is not good for everything. I mean, you know, I it horrifies me when I go on on the internet and look at what people or I see what other clinics are using for all sorts of things, which is very doubtful that it's going to work but for tendon injury, soft tissue stuff, I think it's, it's really good. I like it for particularly, glute medius tendinopathy. And, you know, I've used it for ITB problems, not retro patella, because that's sort of under

Steven Bruce

on the subject of retro patellar Ernesta said, Have you come across a painful Baker's cyst? And did you find a cause or a useful treatment for dealing with that

Clive Lathey

I see Baker's cysts quite frequently and bake it I'm in a Baker's cyst is, is really just representative of swelling and you don't know what the pathology is. All you know is that the swelling can't go forward because of all the bony structures that has to go back into the capsule. So yeah, I mean, Baker's cyst is usually because of something you know, it's usually in a degenerative knee and it might be anything from osteochondritis dissecans A loose body or it could be a little tag tear in a medial or lateral meniscus, you know, there's a whole range of things. Again, if it doesn't respond to conservative treatment, ice packs and manual therapy, I do use old centre I'm not entirely sure it does a lot but if it doesn't settle down, then I usually end up writing to GPO. Yeah, they don't like taking the fluid out by the way. aspirating it has a risk of introducing bacteria and if you end up with septic arthritis is way worse and worse than Becker says that most of them settle down eventually. And actually quite a fair proportion. That is the automatic The only thing they can't do is bend the knee properly.

Steven Bruce

Yes. Fix my run has come back in just been quite quickly because we got a few minutes only, and says, Do you watch people running to see what strain forces they're creating when they run?

Clive Lathey

I love watching people running. One of the places that I want my French Bulldog, it doesn't go as far as my previous Labrador. But I like watching the Wimbledon windmill runners, because you it's very interesting watching how people adapt. I mean, that's why there is no one way of running. Because everyone has different adaptations. And it's very interesting watching our movements. For example, it's a shame we didn't get chance to you happy

Steven Bruce

for me to share that video after you can tell me what it is that you would have identified? Yeah, so maybe I'll movements. I'll just

Clive Lathey

describe it briefly on the video, because we sent the runner on a run for about five miles around the river then put around the arm, which is important to tie them out. So they're not Yeah, because they can join them. So this is the problem when you when you're losing a treadmill, if they're not fatigued, then you might not see anything. So if you're gonna get a Trendelenburg, dropped hip, you've got to, you've got to fatigue the muscle. And in that video, you see her left hip dropping down, and she's throwing her right arm out to keep her centre of gravity effectively. So you can, you can deduce quite a lot from watching people's arms movements, but you're not just looking at they're looking at knees, you're looking at hips. I mean, you're you're looking at foot movements,

Steven Bruce

do you use camera work? Because it's quite hard to identify subtle movements of the phone at high speed cameras? Yeah,

Clive Lathey

Podarcis got a set up with cameras on the treadmill in our clinic. So he does that. I don't personally but I send them to him. And he does the videos. I mean, people quite we sometimes I do if we've got quite a long corridor I need but use the patient's phone, because then there's all the GDPR stuff. So the patient is quite like if you video them. And you can, as I say there's dark fish and other ones you can slow down. And that is very visual. You can see what they can see what you're talking about, essentially.

Steven Bruce

Yeah, I'm a I'm a bit of a cynic about GDPR I think we worry about it far too much of a patient wants you to fix them and they want you to film them, then it's not really an issue. As long as they close. There's not really any privacy issue if it's seen by someone else accidentally. I'm just my view. We won't get into GDPR yeah, I've yet to hear of any practitioner ever being caught hold held to account over any GDPR is another bit of bureaucracy don't really need as know where it is. I understand where it came in. last observation here. Chubs has said Please can we get details later of the handheld dynamometer. And as I said, I'm gonna get the full details from you. We'll share those in my email that will go out tomorrow. And hopefully it'll be of use to some people to what I've learned about this evening climate I mean, it's ain't about the knee. It's it's starts probably beyond but we've started lumbar spine, you've worked by the way down. So yeah, structures are the foot, which is just

makes it sound incredibly daunting for anybody you get some problem, but it's basically the opposite the chiropractor

Clive Lathey

is and it's quite interesting. I did this talk to a group of knee consultants and and they were actually quite fascinated or Lisa said they were I don't know who they were, but because they are very reductionist, of course, you know, they tend to look at the knee. And that's it. And I think, you know, you've got to try and understand as best you can, and we can't always work out why things happen. But, you know, something like the knee and these these two syndromes, of course, there are many other lower extremity centres, which we haven't covered. But there's always biomechanical reasons behind it. You know, it's multifactorial, we didn't talk about the psychology of particularly patellofemoral pain because that has a habit of taking a long time and B hasn't hadn't been recurrent. So there is the kind of psychosocial you know, central sensitization issue, which we didn't

Steven Bruce

know and we don't have time to do it. But, you know, we've had well over 400 people watching we had no login issues and considering that a lot of people are still on holiday, not least Robin was Africa to down on the beach. You know, I think that's a very good number for this evening's show. I'm sure they've got a huge amount of value from it.

Clive Lathey

I'd be happy to come back with something different.

Steven Bruce

Yeah, I like that like because we'll have you back.

Clive Lathey

I like mixing up you know, all the years of different learning from different people. Yes, you know, but I do think your hands on therapist, you can do a lot of good for run as well not just run as well. But yeah.

Steven Bruce

Thank you. There you go. Hope you've enjoyed that as much as I did