

# Transcript

# Fixing the Hip – Ref 300

Steven Bruce 37:24

Good evening. Good evening. Great to have you with us. It's only a couple of weeks. And so I was talking to Carl told about the spinal pelvic hip complex. And here we are talking about the hip again, we know you can't get enough of a good thing and you and there's certainly plenty of hips coming through the clinic doors. So I'm expecting that tonight will be a very useful, very helpful show for you. My guest is Victoria Smith. She's a physio who specialises in the lower limb and in the hip in particular, we had her on the show almost exactly a year ago. 300 and something days ago, from six pages four days ago, talking then about femoral acetabular impingement syndrome. But like the shoulder, there's plenty of things that can go wrong with this kind of complicated joint. So this evening, we're going to be looking at gluteal tendinopathy, but Toya.

Victoria Smith 38:10 Welcome back. Thank you for having me, Steven,

Steven Bruce 38:12 what we've been doing the last 364 days

Victoria Smith 38:14 working hard seeing lots of hips.

Steven Bruce 38:16 Yeah. Yeah. Is it lower limb? Or is it just hips?

Victoria Smith 38:20 So in the NHS, I see hips and knees, and then privately I've tend to focus more on hips just because it's my special interest. And, yeah, that's generally what I tend to specialise in. So,

Steven Bruce 38:32 so why gluteal? tendinopathy? Well, it's a

Victoria Smith 38:35 condition that's very common. It's the most common lower limb tense tendinopathy presented to GPS. So it's seen a lot by

Steven Bruce 38:43

clarify, this is not just that's what GPS call it, like they call everything in the shoulders and shoulder or is it?

# Victoria Smith 38:49

No, yeah, so often, it actually GPS tend to call it chalk and toe bursitis. We still get referrals through with that on, and then it had an umbrella term of greater trochanteric pain syndrome, which we still hear. But gluteal tendinopathy is a bit more specific, to actually what we think is driving the symptoms. And what the sort of research shows is that 23.5% of women over 50 and obsessive 70 have this condition. So less than men, but 8.5% in men, so it's much more common in women, especially around sort of the parry and menopause.

# Steven Bruce 39:28

Yeah, I was gonna say there's, there's all sorts of things that seem to happen to women at that sort of age. They're worth being a woman over the age of 15. I

# Victoria Smith 39:34

know. I know. It's Yes. So there's definitely an impact with oestrogen levels, which we will sort of touch on as well as we as we get chatting, but yeah, it's a common condition that can be managed effectively. With Yeah, physio, chiropractor, osteopath. So it's something that I thought would be great to share my knowledge with the audience and hopefully people can pick up something

# Steven Bruce 39:58

and I'll bet that will I'll probably put a few myths to bed while we're about this, or at least clarify some diagnoses as well, because, well, I mean, you tell us how we're going to spot a gluteal tendinopathy.

# Victoria Smith 40:09

So there's quite a common sight of pain. So we're looking at pain this over the lateral hip, it can spread down the lateral thigh, some sometimes to the knee, because the ITB does get involved.

# Steven Bruce 40:22

So if you put that slide up with a picture on the screen,

# Victoria Smith 40:25

that would help with it. There we go. So, so generally, this is the sort of main site of pain over the greater trochanter, which will sort of look at more on a model later. And this is the kind of general area that we will we will see, you can get some buttock pain with it, obviously, the gluteal muscles sort of sit around there, and occasionally the groyne. But generally, when we say groyne, it's not actually that sort of see sign type pain that we see with an arthritic hip, for example, or that articular pathology,

# Steven Bruce 41:00

I think it might have been when you were on last time, we were talking about the the site of pain for the actual socket itself. And it's a lot deeper than most people think, isn't it? You're much more in towards the groyne.

Victoria Smith 41:12

Absolutely by Steven so it's much more medial. And it's IT people tend to point in their groyne, or do this kind of a C sign type arc, which is quite a good indicator to say actually, this is more likely to be driven by the hip joint. It's unusual, we get that kind of pain with this condition. If we are sort of seeing that we'll probably think well, actually, we need to have a look at the hip joint in more detail. And there are certain tests we can do to have a look at that. But yeah, this is the common site of pain that people would present in clinic with. And it can go down to the knee, but doesn't go past the knee.

#### Steven Bruce 41:49

Right? Where you preempted me to a certain extent because I'm obviously I saw your slides before we started the show. And I looked at that little pink oval there that ellipse and thought, Well, surely that's going to be missed misdiagnosed as TfL. Or it's going to be misdiagnosed as truck enteric bursitis. So how, how often are you seeing Miss diagnoses like that? And how common Do you think it is that practitioners like ourselves that learn GPS will miss diagnose it

#### Victoria Smith 42:16

very common? So talk enteric bursitis is the traditional term for this condition. But we we know now that actually there's only about eight to 20% of cases of gluteal tendinopathy that present with what we now call bursal distension. So we've kind of moved away from the bursitis. Because actually, the current way of thinking is that actually isn't an inflammatory driven process. So you tend to find that the bursal distension occurs with gluteal tendinopathy, not as a standalone condition. Right? So, but very often, it's diagnosis gluteal

#### Steven Bruce 42:52

muscles as you say that because I can remember, vaguely remember, I think we did a show like this long before you first came on the show. And some of you were saying that you took enteric bursitis is grossly over diagnosed, it's almost never the cause of pain in the head.

#### Victoria Smith 43:05

Absolutely, absolutely. So it's very rare. But it's a standalone cause because there's a reason why the bursa has become swollen, or distended. And it's usually due to compression, which we will talk in detail about as we go on ITB pain, yes. So that can be linked in with this as well, which is why people get the pain down the thigh. So you can also get ITB faster apathy. So you can get, you know, irritation of those fibres, too. So the two are LinkedIn. And the ITB has got a lot of good bliss pie and nerve endings. So yeah, it can be a potent driver of symptoms, too. So generally, it's treated, you can kind of manage both together by applying similar principles.

# Steven Bruce 43:55

So when a patient comes in, and they say they've got pain in that little red ellipse area that we saw in it ago, what is it that's going to start you thinking along the lines that this could be gluteal tendinopathy? What are their sort of predisposing factors?

## Victoria Smith 44:07

Yeah, so very much. So this like when when you ask them to pinpoint their symptoms, they would come up in a minute, generally, point to that spot over the greater trochanter is their main source of pain, and then they've got a spread down the leg. But often, they will sort of describe pain when they're loading their gluteal tendon. So walking uphill is a big one. Stepping down, going for a walk

on uneven ground, lying on that side. So we've got with that compression as well. So just move that. Move that on.

# Steven Bruce 44:49

Hold it down, it'll buzz and then it should start to work. We go.

#### Victoria Smith 44:52

There we go. There we go. So yeah, so activities that involve standing on one leg. So obviously we don't just tend to stand around on one leg, but walking, hopping if there were an athlete maybe sitting in a low chair. So there's a reason why all of these are aggravating factors, which we will cover in a minute. But generally, it's down to either compression of the tendon. And that increased tensile load, which has a negative effect on attendance.

#### Steven Bruce 45:20

This is about the stage in every broadcast when I have to say to the audience that I will share the slides as a handout. And yeah, so we don't need to frantically write all this stuff down, it will get sent out in an email tomorrow. So yeah,

#### Victoria Smith 45:30

these are kind of general activities that the patient with with this condition will will often say, yeah, it's worse when I do this, when I walk fast, it makes it worse. Standing still is another big one. And that's often because of the position they're standing in. So we've got is how you standing exactly. And that's usually some blossoming, we'll go through tonight as well.

#### Steven Bruce 45:54

Sitting in low chairs, especially with knees together. Well, I mean, would you consider Do you count these as low.

# Victoria Smith 45:59

So I think where you've got your knee higher than your hip would be considered a low chair. So it depends on height. So if you if you're tall, then a chair would be this child maybe would be low. But sitting so with this condition, what we're looking for is to talk compressive load through the gluteal tendons. So if you're sitting with the knees together, and if you're also sitting over there, lumbar flexion, we've also got the thoracolumbar fascia, which also is sort of feeds into the ITB. It's all kind of connected. So you're getting that increased passive tension through the ITB. Which is therefore compressing the tendon. I will go into that in more detail

# Steven Bruce 46:40

as we go. Also, dare I say it, modesty dictates that most women more women, yeah, knees together, men tend to slouch with legs akimbo.

#### Victoria Smith 46:49

Absolutely. So yeah, it's that knee in from the hip, which increases that compressive load through the gluteal tendon. So all of these have that, that common denominator of compression or increasing tensile load. But yeah, so.

Steven Bruce 47:08

Okay, so there's a lot of this is sort of first thing you see on the patient when they walk into your treatment room, isn't it? I mean, how do they stand? And what do you get out of the history of what they've? Absolutely, so

#### Victoria Smith 47:19

it's great to observe them as we all do when when they're walking down the corridor or getting up from a chair? Or how are they sat in the chair when they're waiting, and you're not watching them. So that's a great way to sort of spot their normal way of sitting and standing, they'll often try and hide that for you, or some of my best behaviour

# Steven Bruce 47:36

was sort of sideline at night as being a risk factor for wrestling joints. But yeah, I can see why it would be effective.

#### Victoria Smith 47:43

Yeah. So if we look at sideline, so here's your greater trochanter. And if you're lying on your side, you're compressing. So you've got your ITB over the top, you've got your gluteal tendon, got bursa as well. So actually, it's that compressive load, you can also get pain lying on the opposite side, because it's if you're dropping that hip into adduction, then again, you're putting compression through here. So it's that compressive load, throw the tendon

#### Steven Bruce 48:10

while you've got that there. This is one of those things which I could never get my head around when I was doing a&p As a student oversee the tendon runs a different cause depending on the degree of flexion of the hip. Yep. So

#### Victoria Smith 48:22

when is it most stretch? When is it at most risk? So in adduction? Yes. So reduction with flexed hip or adduction with flexion? Is that position where you're going to get most compression through? Yep. So also, in flexion, if you're in external rotation, as well, because the gluteal, minimus and Medius in flexion are both internal rotators. So if you have them in end of range, axial rotation, then you're going to have more compression as well. So yeah, but the, the tendons insert onto the greater trochanter. You've got it, you probably can't see, but you have facets on the greater trochanter. So they insert in different areas. So you've got gluteus medius for the front by the anterior fibres, insert on the lateral facet, and then you've got minimis and certain anterior to that. And then the deep fibres are the posterior fibres insert on this superior posterior aspect of the facet. So you can actually sometimes through palpation think oh, okay, well, it's more likely to be that, you know, that muscle part of the tender but it doesn't, it doesn't really matter. We're going to treat it the same. But yeah, it's just interesting to to note that these are in different areas.

#### Steven Bruce 49:38

I saw on one of your slides that going on holidays a risk factor for this. Yeah, we're kind of a bit counterintuitive.

# Victoria Smith 49:44

Yes. It's quite a common theme that especially if you're going to cruise, so for example, a lady who's maybe in her sort of 50s 60s, maybe it has a sedentary job, doesn't put a lot of load through it. her tender normally goes on a cruise and has a lot of stairs to climb and thinks, oh, you know what I'm

going to get active on this holiday, I'm going to go up and down the stairs every time I go down for food or, you know, so they're increasing that load through their tendons, but their tendon isn't used to that. Yeah, and react negatively to that. So that's quite a common one all, you know, they're on holiday, they're going for lots of walks, that they're not used to, or they're in a hilly area. So they're going to Bournemouth, which is really hilly, and they've they've gone out for lots and lots of walks, and they're tending the capacity of attendant just isn't there to actually cope with that increase in load. So there's a negative effect on the tendon, which then can cause this problem to start to become apparent. Right. So yeah,

# Steven Bruce 50:46

any other weird ones? We should know about? Sort of provoking factors?

# Victoria Smith 50:51

Um, get health kicks. So you know, right? I'm gonna get fit. January thing is it? January thing? Yep. So I'm going to start to get my steps in. So outcomes the step count, and away we go. And the tendons just not ready for that not not if the load hasn't built, been built up gradually. Yeah, exactly. So health kicks can be detrimental to this condition as well. And

# Steven Bruce 51:18

all those background factors, I guess there will aggravating factors as well. Yeah, absolutely. You got it.

# Victoria Smith 51:24

Yeah, exactly. So and also, you know, if you if you're going through sort of perimenopause, menopause, and your oestrogen levels are going, you know, reducing, that has an effect on tendon turnover, the collagen turnover. So if you've if you've got risk factors as well, so there's a sort of a jigsaw puzzle of risk factors, the more risk factors you have, the more potential you have to develop this, this kind of

# Steven Bruce 51:51

took us through a bit about women's health fair, because we only we get quite a lot of interest in women's health, because it is a major sort of problem area, I suppose. But menopause causes all sorts of changes. You've just outlined something there, does normal HR T offset those

# Victoria Smith 52:07

problems. So there's a piece of research that shows HRT can really help with this problem, but only if the person's BMI is not considered to be high. In that population, it didn't have any impact. But yeah, HRT can definitely have an impact on the tendon health by restoring that balance. So yeah, if that is a definite risk factor, if you know your patient has got issues with with menopause, then it's well worth having a chat with the GP to see if that could help. And often it does. So yeah. If it's the right right treatment for that person, then it can have a real positive impact on on tendon pain.

# Steven Bruce 52:52

You probably see this more than most, is it an actual thing that women and sort of perimenopause or will present with problems like this? And you might suggest to them, now's the time to go and get some hormonal rebalancing?

Victoria Smith 53:03

Definitely. Yeah, it's definitely time to suggest they go and check in the GP and maybe get some blood tests. And then the GP obviously can sort of action

# Steven Bruce 53:12

action that what's the GP going to look for in the blood test?

# Victoria Smith 53:15

So not my area of expertise, but certainly looking at levels of oestrogen which is, so the it's the oestrogen that will have an impact on tendon health. So there can be you know oestrogen pessaries. And various but yeah, not my I wouldn't like to say this is my area, but it's definitely something you could you could direct so you could sign posts, so Okay, well, let's maybe try this as an option to try and help restore your tendon health.

# Steven Bruce 53:42

So let's first questions for you already. Great. One of them from Sara. Can we cast your mind back 364 days because she wants to know where the pain from camel pincer problem arises? Is that a deep hip pain or is it more lateral? Of course, you've covered that before but

# Victoria Smith 53:57

yeah, absolutely. But no. So so if somebody who has a an impingement, so pincer, or cam, they genuinely have pain, either their the point to their groyne, or they do with a C sign type, sort of grip of their hip, because the pain is coming into particularly so it's coming from within that hip joint. And that's generally where they feel it, they can feel a little bit going down the front of the thigh as well sometimes, but it's a different location to to this Russian

# Steven Bruce 54:27

Su wants to know where the tight jeans can cause this problem.

# Victoria Smith 54:31

So type G is going to have an impact on the lateral cutaneous nerve, and it can cause pain or symptoms through that but I guess it could affect gait. So, you know, if they're very tight, then it could maybe stop you from bringing your hip thrown a normal pattern and maybe increase more of a waddle so if they're extremely tight then I'd probably have a look at them with the jeans on and with the jeans off and see that did affect their gait patterning because he could but the eye the compression of of a of the sort of fabric of Egina, I wouldn't imagine would be enough to cause this condition but it'd be looking at Yeah, if it affected different things.

# Steven Bruce 55:14

One of our viewers who's decided to remain anonymous is what sort of bed reduces the pressure and symptoms when they're sideline?

# Victoria Smith 55:20

Yeah, it's a great question, actually. So, eggs, egg crate mattress toppers. So if you've ever heard of an egg crate mattress, yeah, so that's right. So they look like an egg, an egg crate, they have kind of the best at reducing compression when your sideline because of the sort of design memory foam don't tend to work the same because you sink into it. So you're still getting that compression through the side of the hip. So it's yeah, the crate

#### Steven Bruce 55:51

annoying field advising people about buying expensive bits of nighttime it

## Victoria Smith 55:55

is that the you're right, but the egg crate toppers are generally about 60 pounds. So they're not that you know, they're not ridiculous. It's not like hundreds and hundreds. So it's I Yeah, you're right with with saying that I think I often say this potentially may help at night. You know, research kind of shows this is the best topper to get an A hard mattress, obviously, you've got that increased compression. So what I tend to do is look at other ways we can accommodate sideline sleeping, and then maybe suggest that if nothing's working, because, you know, we will come on to I just going to pop that one on there, which will be sort of had a chat about earlier. Um, but yeah, it's sleeping is a real big part of this condition. So it is part A big part of

Steven Bruce 56:44 our morals and maintaining factor.

#### Victoria Smith 56:47

Probably a bit of both, to be honest. Yeah. Because if you're if you're a side liar, and there are a bony condition, bony sort of anatomy that can also make you more predisposed to develop this condition. So that the compression through the hip there yeah, definitely could. Could be a Yeah, part a reason why a couple

#### Steven Bruce 57:10

more questions before we move on with what you intended to do. Questions. Questions are great. This this next viewer has decided not to be anonymous. They reveal themselves as guests 1793. And they say they have a patient who they think has this problem, suggested it's to the GP and suggested they go for an MRI. The GP has come back and says it's the low back probably arthritis. Interesting. So how do we as osteopath convinced the GP to look elsewhere to get the right diagnosis? That was two parts. There's not there were lots of answers and how do you talk to GPS to make them do what you want to do, but is it reasonable for GP to misdiagnose? This for low back

# Victoria Smith 57:49

arthritis is commonly Yeah, a common a common misdiagnosis is low back. Yeah. Because of the because of the referral pattern. So if it is coming from a lower back, it's not specifically tender over the greater to Qantas

# Steven Bruce 58:03

different qualities were referred pain isn't there? Yeah, definitely. Definitely. So

# Victoria Smith 58:07

you might, you might have more pins and needles, numbness, your distribution is probably different. So it's possibly coming more from the sort of spine si j into the buttock and then down the leg. Also different things would aggravate the pain. So you'd have your do your lumbar spine assessment, does flexion extension, you know, affect the pain through some provocative tests and things? Definitely. So I think this is one of the key factors in is ensuring your diagnosis is is correct. And you're happy with. Okay, yeah, I think this is definitely the driver. The other thing is, imaging is is useful if you haven't made any progress with treatment. So it's making sure that yes, you've got the right diagnosis. You're modifying compression and load, you're working on the right management programme to increase the strength of the of the muscles, and then the load capacity of the tendon. So if you're thinking about imaging, it's because all that hasn't worked. So you don't need imaging to, you know, to start treatment. It's something that you would do down the line if things had failed. So

# Steven Bruce 59:20

I would say twosome, would you go for ultrasound who

# Victoria Smith 59:23

so MRI is the gold standard for diagnosing this because it looks at the whole area. So it would look at ultrasound. Yes, you can get a diagnosis of gluteal tendinopathy. It's cheaper and it's easier to obtain often, but the the gold standard is is MRI, because you can look at the quality of the the tendon and the muscles and the bursa in just in more detail and it tends to give you more information and often you can look at the quality of the muscles as well. So, in often studies have shown that people with this condition they tend to have have sort of fatty atrophy within the glute min and glute Meade, so you can't see that on an MRI. So MRI just gives you that whole picture. But it's, yeah, we don't jump straight to that it's working through, you know, good rehab. Compressive strategies. So

# Steven Bruce 1:00:20

getting to the other part of that question, which is how do you convince the GP? How do you prove you're in a slightly different position to the osteopaths and chiropractors? Because you're in? You're an insider? And obviously, you're, you're known as an expert in this. Yeah. For the rest of the world for the rest of us. What, what do we say? I mean, do we do we list a whole series of tests that we've done, which all indicate this, which the GP will know nothing about? Because it's not what they do?

# Victoria Smith 1:00:47

Yeah, I would say, the clinical picture points strongly to gluteal tendinopathy. So

Steven Bruce 1:00:54 and we'll look at the tests, and we'll

# Victoria Smith 1:00:56

absolutely which is really important. Looking at the test is Yeah, is a real key factor to diagnosis. But, you know, your clinical picture, the subjective history, all point to this as a condition. I guess, you kind of question what you're getting out of imaging. So is it going to change your management of this condition? Changing your management would mean really looking? Is it a surgical candidate? surgical candidates really are some of the options for surgery? Have they got an underlying gluteal tear that needs addressing? Possibly some surgeons remove the bursa? If that's an issue? It's not that common anymore, because we know that there's other factors driving it usually

Steven Bruce 1:01:47 seems kind of like removing a symptom row.

# Victoria Smith 1:01:50

And it generally will come back so yeah, it's not common, but that happens anymore. years ago, that was a will. Okay, we'll remove the bursar, I will lengthen the ITB. That was a real kind of just bog standard surgical approach for it, but it things have changed since then. So is anyone still doing that? Yeah, yeah, I know surgeons who still do that. So

## Steven Bruce 1:02:11

in terms of lengthening the ITB, what, how does that affect stability?

## Victoria Smith 1:02:16

Yeah, usually. So again, what we used to think was this was caused by a tight ITB. Hence why our management was lightly stretching stretching it Bay, which we now know is an aggravating factor, so that will actually make symptoms worse. So, what we find now is that the ITB is actually lengthened because of the positions that the person with this condition generally gets themselves in, which we will look at in with the module. So it's, it's usually a lengthened ITB. So actually, yeah, so surgically, lengthening the ITB actually, doesn't usually help. Because it's not usually the

#### Steven Bruce 1:02:57

the time was amused by ITBS because it's sort of how do you know the ITB is tight? Well, if you poke it, so why don't you poke anybody's ITV source everybody's got.

# Victoria Smith 1:03:06

So oba's test will potentially highlight, won't it? But yeah, it's a sauce structure to touch, isn't it? I mean, you touch mine, and I'll be thrown through the roof. So it's, it's looking clinically Is there is there actual stiffness and shortness to the ITB before before you lengthen it, and sometimes that's more likely with a snapping hip. So we'd see some cases where a person's got a, you know, a short ITB. And I saw recently, there was a 16 year old girl presented in clinic with in a wheelchair. She couldn't walk because her ITB was so shortened and lengthening that she's like a different person. She's now got her life back. So there is a place for that. But often with this condition, it doesn't usually change symptoms,

# Steven Bruce 1:03:55

tempted to ask what caused it to shorten to that extent, but we won't go down that rabbit hole and get these three questions out of the way, because then we can move on to what you came here. So it's fine. I'm happy to answer questions. Helen says Hi, Victoria. I don't know if she knows you. But she says thanks for a really interesting topic. She's wondering how relevant you find the ankle and foot instability as predisposing factors. She finds it commonly with gluteus medius problems as it's such a stabiliser on the hip in one legged standing. Yeah, no,

# Victoria Smith 1:04:23

absolutely. So foot and ankle problems is a definite other factor that we should be looking at in our objective assessment. So if they have a rigid foot, or if they have a foot that isn't stable, it will affect gait and it will affect the low transference up through that through the leg and can definitely have an impact. So it is also Yeah, looking at other factors that we need to address and can address. So yeah, I agree. Definitely.

#### Steven Bruce 1:04:54

Okay. Again, this is not your area of expertise. You've already explained that so don't worry too. About this question, but Lawrence has asked whether you've heard instead of HRT for stabilising hormones, whether you've heard of magnesium supplements along with B vitamins. He's had one young lady who told me about it when him inverted when she stopped taking the pill and the Mirena coil caused her pain. Oh, okay.

Victoria Smith 1:05:17

So yeah, not not an area I sort of have invested too much time in, in reading. So I wouldn't really like to sort of Yeah, comment on that.

# Steven Bruce 1:05:26

And he says, Do you recommend using orthopaedic knee sleeper pillows to reduce hip pain compression when sleeping on your side? Are they useful? Yes, it's a difference in that

# Victoria Smith 1:05:35

many ordinary pillow. So it's, it's, I have one myself, actually. So I do actually really, really, I should have brought it with you shouldn't admission, I did actually think that last night. But all I could take this and then I forgot. So they're usually in about like a heart shape. And they're moulded so that your, it fits in between your thighs. So it's, it's less cumbersome than a pillow. And also, it's a little bit thicker and a bit a bit more firm. Um, you can put one underneath here as well. So you genuinely have it here. And, yeah, I'm a big fan of those, I think they work really, really well. And you can get them fairly cheaply for about 20 pounds. So yeah, definitely worth try, definitely worth a try. It just keeps the leg the top leg from going down into that hip adduction position. So ya know, I would say, well worth 20 pounds for someone who

# Steven Bruce 1:06:26

every practitioner I know is very fond of saying to people with sleep with a pillow between your knees just to prevent that adduction. Again, in my experience, largely because we're solving problems, but I'm sure that others are doing it for this reason as well.

# Victoria Smith 1:06:36

Yeah, absolutely. So it's just all about managing compression, managing that compressive load through the tendon, which has a can have a huge impact on on symptom settling. So yeah, it's a big, big player in terms of management. So

# Steven Bruce 1:06:51

So anyway, where did we get to in your slides when I'm working factors when you're talking?

# Victoria Smith 1:06:56

To us? Yeah, so I think we've covered most that the only thing we didn't cover was sort of a fall onto the side.

Steven Bruce 1:07:03 Just everything that slide back up again, please.

# Victoria Smith 1:07:05

So you might find someone says, oh, I fell quite common one and landed on onto that, that side, that's painful. Also, someone slipped down the stairs or has a sort of, you know, where you trip and then you land heavily on your foot. So causing a big contraction of the of the gluteal muscles, that can also cause be a sort of preceding factor. And then I think we've pretty much recovered from it injury or illness. That's just where you've maybe been inactive, and more sedentary than normal. Fitness. Say more. Yeah, it's just the opposite way round. Yeah. So you're thinking, I'm going to get back to normal. So with load, you can have a tendon that's not used to increase load, and you start to try to do more, or you can have where you're, you've sort of been ill and haven't been putting

your normal load through it. And they tried to get back to normal. And the capacity of that tendon to withstand that tensile load isn't there. So it both ways can can have an impact

## Steven Bruce 1:08:04

on world car accidents. I asked this because I had a car accident the other day, and entirely my fault. And I had to slam on the brakes really, really hard. And two days later, I was astonished at the amount of hip pain I was getting. It went away very quickly. But I just wonder whether another provoking. Oh, great.

#### Victoria Smith 1:08:20

Yeah. So sort of slamming into that into the clutch or the Yeah, or the brake, or even if you have an impact from the side and the door hits your hip. Again, yeah, that could be an aggravating factor as well. So yeah, definitely.

#### Steven Bruce 1:08:36

Okay, so you got to talk to us about a physiologic so yeah, I just

#### Victoria Smith 1:08:39

sort of thought that if we understand basic sort of tendon pathology, tendon structure, it helps understand why this condition can occur, and why we're doing the things we were doing to try to calm it down. So this is a kind of a basic tendon. You've got the the tenocytes within it. And the extracellular matrix, that's what the ECM stands for. The tenocytes produce the extracellular matrix, and they also produce signalling molecule. So they're kind of in charge they send signalling about, you know about, which helps with the homeostasis of the homeostasis of the of the tendon. We've also got the collagen fibres, they run in a longitudinal, the fibres and longitudinally they're all blue, that they're all blue, and the two sets of all pink. It's yeah, it's a very pastoral cola tendon, isn't it? Yep. So the collagen fibres allow for that transmission of low that sort of load between the muscle and the bone where the tendon attaches. So really important that they're, they're nicely structured. Then we have the gap junction. So this is where the Tina sites sort of chat if you like, and the messages are passed between them detailing you know, how the tendons structured and the capacity of followed in the tendon. And then we've got the proteoglycans, that they assemble the collagen fibres, and they maintain the form. And they act as a lubricant between those collagen fibres. They're really important in tendon health because they can move on to the next slide. Actually, if that's enough, time spent looking at that, it's just a kind of snapshot of what a tendon looks like, it's in the notes as well. So here we go. So you have small proteoglycans and large ones, you find small ones in a different zone of the tendon to the large one. So if we think about the three zones in the tendons, a tensile zone, then the transition zone and then the compressive zone, so the tensile zone is fought further away from the bony attachment, and the compressive zone is close to is the boat where the tendon attaches to the bone. So they've they're slightly different in the makeup. So the tensile zone is more collagen fibres, collagen tissue, and that's designed to withstand tensile load, so that longitudinal load. So the small proteoglycans, they assemble the pieces of collagen. And they they're they're working hard to try to ensure perfect alignment. So that tendon has that optimal strength. And they're a bit like a nursery. So they provide that the sort of nursery the niche for the new tendon cells to grow. So we find them away from the compressive zone. This is relevant when we talk about load mechanical load through a tendon. Then we have the large proteoglycans. So they actually attract water molecules, they bind the water molecules together. The reason for that is this is a sort of defence against compression. Yes. So if you've got a highly compressive area, then increasing the proteoglycans will absorb that that compression and

make the tendon was able to withstand that compressive load. But what that means is it's actually the less suited to that tensile load. So the longitudinal load through the tendon, so they can attract to they can swell, and that's what you see if we use the Achilles Achilles tendon as an example, when you see that swollen tendon, that's often a response to load. So it's the large project lichens are becoming more dominant, and they're swelling to try and protect the tendon. Okay. Okay.

#### Steven Bruce 1:12:23

So, actually, is that an overreaction on their part? Or is it a helpful reaction? Or both?

#### Victoria Smith 1:12:29

It's it's kind of it's both. Yeah. So so the tendon, so the Tina sites are expressing that we need to have, we're being compressed, we need to protect we to swell to give us that protection against the compression. So it is a reaction that can be helpful, but left unchecked, it can get out of control, and then that affects the tendon structure. So we have that that that negative impact.

#### Steven Bruce 1:12:59

You know, it was several years ago that we stopped saying tendinitis, wasn't it? Yeah, absolutely. It's not an inflammatory X to date with what you're saying. It's water being osmotically dragged into it? Yeah. So

# Victoria Smith 1:13:11

you're right. We don't say it's an inflammatory model anymore. We say it's more of a compressive load continuum model. So there's a lot of work by Cooke and Purdon, that have looked into tendinopathy. And that's the model that they they largely use. So there isn't actually inflammation generally, isn't there. So yeah, we don't use that as a description of tendinopathy anymore. So the large post your glycans, they are generally found in that compressive zone where the tendon attaches to the bone. And it's their normal, they're part of the tendon structure. But if the tendons are getting more compressed, you will find more of them, which has a negative impact on on tendon health. So what we'll find is the fibrous tissue is sort of changes into more of a fibrocartilage. And as we get closer to the bone, we'll find that it changes more into that sort of calcified cartilage. And that's where you can start to see bony spurs where the tendons changing its structure.

Steven Bruce 1:14:16 Up to what point is that reversible,

# Victoria Smith 1:14:19

so within the model of tendinopathy, so there's the three stages reactive tendinopathy is the first stage and then we've got disrepair. And then we've got degenerative tendon. So within the first stage, so reactive tendinopathy, very reversible with modified load, so modify the load, strengthen the gluteal muscles that are controlling that. And we can Germany, get it to disappear. In the second stage, the disrepair, it's still reversible, but it's harder to do that. And then in the final stage, the degenerative stage, it's it's not reversible. Okay. Okay, so Finding spotting early is, is key. So getting that diagnosis right is important. And yeah, just sort of identifying the compressive nature of what could be aggravating it. So it's important, we sort of understand that I don't need to go into too much detail about it. But just understanding what's happening within that tendon why it's becoming swollen, because if you have got an increase in, in the large protocol proteoglycans, the tendon becomes fuller and thicker, actually, you're gonna get more compression through the ITB. So, it will then develop what because you've got that compressive impact load, you're going to get more of these and more. So it's important we stopped that swelling. Not not No, not in the gluteal tendon, but it is obviously in the Achilles. So it's, it's the similar sort of thing will be happening in the gluteal tendon. You can see that often on imaging, so an MRI or ultrasound would say thicken, which was you

# Steven Bruce 1:16:00

mentioned imaging. So the question came in from Kim a little while ago. She's said, Doesn't the radiologist read the MRI? In which case? Is it possible to see the scan? So her question is, can you actually see the scan? Well, of course, the patient can always get hold of that scan and can produce it for you. And as long as you've got the software to read an MRI on your computer, then you can look at it. But presumably, if you've if you personally have referred someone for an MRI, you will direct the radiologist to look for Yes, ethics or just general histology.

#### Victoria Smith 1:16:30

Yeah, so if I'm referring for an MRI, if I'm requesting an MRI, I will write down the clinical findings and my, my kind of, could it be gluteal tendinopathy? Is a gluteal? Tear. So yeah, you would always direct to if you're requesting imaging, what you're kind of theory, your date, your your differential diagnosis is, which would be if your if your question hip MRI, they will MRI, the whole hip and they will look at the joint and they will look at that, you know, the tendon and the whole thing. So, but yeah, direction, often when we request an ultrasound, they want an exact K, which area? Are we looking at here? And what are we what are we expecting to find? Just to direct their imaging?

#### Steven Bruce 1:17:12

So again, back and back to Kim's question? I mean, do you actually look at the MRIs yourself? I mean, do you ever find things that the radiologist has missed? Perhaps?

# Victoria Smith 1:17:19

Yeah, unlikely with MRI, because it's such a specialised image that obviously they've, they've got a lot of training. But you know, occasionally with probably Yeah, you can sometimes go Oh, actually, is that a little bit of high signal there, you know, within that tendon, but it's unusual, generally, that they're very good at their job. So but you know, every now and then you might notice some fatty atrophy within the muscle that maybe hadn't been reported on. So yeah, that you could you could certainly spot that.

# Steven Bruce 1:17:49

Yeah. Okay. I've got a few more questions. And you've got another slide on physiology here that you wanted to cover as well.

# Victoria Smith 1:17:56

So yeah, but yeah, so within within the tendon, maintaining this homeostasis is really important. So this is what happens in it in a well functioning tendon. So we have on the left, the negative and on the right, the positive, but it's all imbalanced. So we have enzymes called mmm MMPs matrix metalloproteinases, they did, they are destructive to the extracellular matrix, so they will start to destroy that. Then we have on the other side, the tissue inhibitors of the MMP asses. So they, they basically stop that happening. So we've got this nice balance of it's normal within tendons to have that turnover. So if you are trying to increase your strength, or your capacity, if your tendon, then you will have some, you know, cell death, and then you'll have it built back up again. And that's how you increase that load capacity. And then you've got the cytokines which can be poke catabolic, so

destruct destructive, or pro anabolic building up. So this is happening all the time. And it's normal. And this maintains a nice, healthy tendon that can increase in capacity and isn't paying for it and can absorb the load that you're, you're putting it under. So this is just important that the balance is is there. Otherwise, that's when we can start to run into into problems. So just did you want to ask the question, I want me to finish that. So regular positive loading is is really where we're at. So there's a window of Optimal Loading and this is influenced by loads of different factors. So genetics, age, sex, lifetime loading history, prior injury, scar tissue diabetes,

Steven Bruce 1:19:49 this is a window in rehabilitation here. Yeah. So

#### Victoria Smith 1:19:53

yeah, exactly. So on window of ensuring that the tendon is how With that load going through it so it could get. So if you went for a walk up a hill, your tendon is capable of doing that. But if you had diabetes, and you had blood sugars that were not being maintained, that would have a negative impact on that balance. So diabetes isn't being well controlled, does increase the expression of those MMPs is, so that can have a negative. So if all this

#### Steven Bruce 1:20:26

astonishing how much diabetes is involved? Absolutely, absolutely. It's a growing problem to

#### Victoria Smith 1:20:32

definitely. So there's, there's just kind of showing that there's, there's lots of factors towards having good tendon health. And it's worth knowing about other factors that can definitely be helping having an impact. So if you're not getting anywhere with what you think, Okay, this is this is I'm doing a good treatment here, managing the compression, we've got a nice loaded programme, that's that's relevant to that person. But we're still struggling, is it something else that's having an impact that we're not getting that window of Optimal Loading, which is which is important. So looking at the influence of mechanical loading, so mechanical load is a big driver on the biological processes within the tendon. And it's really important with how much capacity the tendon has with load, and also the structure of the tendon. So it's, it's really a big player. So there's different two different types of stress that certainly affect the gluteal tendons. So compressive stress being one. So where we've got that stress as adjacent to the tendon, which is what's happening within the ITB. So you've got with gluteal tendon inserting here, ITB sitting over it, and it's that compressive load through there. So when you have that either regularly or with a maybe a large impact, like a fall, or that it's usually that buildup of continual low level compressive stress, that's what we usually say. And what happens there is you get an increased amount of those large proteoglycans building up in that tendon, increased MMP SS, so you've got that destructive element going on. And then that will change the the makeup of those tendon cells. So you can then develop that those Bernie spurs, and it reduces the ability of the tendon to absorb that tensile force. So you're going for a walk, which maybe you think I would be able to cope with. But the tendon is hasn't got that capacity to, to do that. So you can start to see a negative influence on the tendon. So that just looking at a bony spur. So we've got a bony spur going on here. So where that compressive load has been affected quite a lot going on within that 10 that greater trochanter see a little bit on the other side as well. Yeah, and if you go lower down,

Steven Bruce 1:23:01 it's not nearly as not nearly the same.

# Victoria Smith 1:23:03

You can also start to see, you can start to see little bony spurs up here as well, why the muscle is so you get in that pool. You can see a little bit of one on the top. Yeah. Yeah, absolutely. And here, so you can just, you can often see bony changes on X ray. It's not, you wouldn't use that to diagnose, but it certainly would help inform your sort of differential diagnosis. So yeah. So I

#### Steven Bruce 1:23:33

guess rather like Mr. Wang, somebody spot you, you probably see a lot of these where you've got all those changes, but they were on there are no symptoms.

#### Victoria Smith 1:23:39

Absolutely, absolutely. So you can certainly have changes on imaging, but no symptoms, in which case, we don't do anything about it because it's not not symptomatic. So just looking at adaptation to compression. So this is kind of a very crude, childlike diagram, if you like, of what we have in that area. So we have the greater trochanter. We have then the sub gluteus medial bursa over the top, gluteus medius tendon, and the truck and toilet bursa and then the ITB tendon. There's quite a lot of layering going on here. If we think if the ITB tendon is being if you have that passive tension through it, then what can happen is you do you get that compressed compression all the way down through here. So you you often then end up with ITB thickening, and then burst or distension, which you would have probably called bursitis. In the past, you then get disruption of these nice longitudinal fibres and because you've got that increase in proteoglycans, and you've got the MMPs is being expressed more so you don't have that lovely, nice longitudinal fibres. It's it's more chaotic. So that that's then all of that together means you've got reduction in that capacity. pretending to absorb the load.

# Steven Bruce 1:25:01

I'm assuming that you say that is more chaotic, more Lovely. Nice smart fibre. That's all being shown on what kind of accent the study is. Oh,

# Victoria Smith 1:25:08

yeah, yeah, absolutely. So kind of extra days imaging. Yeah, absolutely. And you can get focal areas of change doesn't actually have to happen throughout the whole tender. And so you can get some very focal areas of where that disruption is happening.

# Steven Bruce 1:25:25

This is all fascinating loads of questions coming in about it. We need to get off our asses and syntactical stuff we do. I'll give you a couple more questions. And we're gonna go over the treatment table and do some some proper stuff. Alex wants to know how long it takes to go from reactive to the next stages.

#### Victoria Smith 1:25:41

There's no set timescale, right? It could be it could be a quick progression, or it could be over months, if not years, depending on load. So it's all based on on that loading. And whether you're identifying that removing that negative load, or Yeah.

#### Steven Bruce 1:25:57

Kim says Would a GP director radiologists to the same degree as you might

Victoria Smith 1:26:05 be should possibly not.

Steven Bruce 1:26:08 But the radiologist will know what they're looking at.

Victoria Smith 1:26:10

Exactly. So if you say lateral hip pain could be even if they put gluteal Chaka toe bursitis the way that they would know what to look for.

Steven Bruce 1:26:19

Yeah. Okay. And final one before we move on to the other side. Beck says although it's not thought to be inflammatory, is ice still helpful for vessel constriction, and reducing the swelling of the tendon?

Victoria Smith 1:26:30 Definitely. So no harm in trying ice or heat? Yeah, it's,

Steven Bruce 1:26:36

I've not come up with any point I've never met anybody who's got definitive evidence for ice or for or for the amount of time you should apply them. They just need to work.

Victoria Smith 1:26:44

It seems to work and some people prefer I prefer hate don't know. So I would say if it works, yeah, try it and see what happens. So yeah, definitely. And, you know, if it helps relieve symptoms, then it's a it's a winner, isn't it? So?

Steven Bruce 1:26:59 Should we give me some model? Yes,

Victoria Smith 1:27:01 definitely. Perfect.

Steven Bruce 1:27:11 Right, what's the first observations and

Victoria Smith 1:27:13

so this is a classic. So what we're, you can start normally if you want to now, but what we're what we're what we want to sort of identify are reasons why you would develop this, this condition. And compression, as we've spoke about is a large one. So if you go back into that position, so what we're seeing here is hip adduction. So when the hip is adopted, we've got passive tension running through the ITB. So we've got compression going through the gluteal tendon that sits just underneath it, which is a real big player in terms of developing symptoms. So this is a real common classic position that people with this problem will stand in.

Steven Bruce 1:27:55

You actually said when we first got you into the studio, so you actually do quite commonly use them like that.

# Victoria Smith 1:27:59

Yeah, absolutely. The other classic is if you want to move into the other one we discussed earlier, so So Hip, hip, hip hanging. So hip hanging is a real common posture. But again, we've got that passive load going through the ITB, which is which is compressing. Also, if we look at when we're standing like this, if we think about the abductor muscles, so they took abductor synergy, there's two levels of that. So we have to the abdomen abductor muscles, yep. So, we have the superficial muscles, and we have the deep muscles. The deep muscles are the gluteus medius and minimus. And they directly attach on to the greater trochanter. As we know, the superficial muscles of this synergy are your upper part of the gluteus maximus or upper glute max TfL, which sits here and vastus lateralis, which sits on the outside of the thigh. So, the upper glute max, which is here, we should

# Steven Bruce 1:28:59

do that thing should we should have something you should paint this onto the model will be good.

#### Victoria Smith 1:29:03

So, upper glute max and TfL both insert onto the ITB. The vastus lateralis sits underneath it. It acts like an amplifier so it doesn't actually have a direct attachment to the ITB. But it it sort of increases the tendon it pumps up underneath it. So what happens is standing in this position, because we're passively tensioning the ITB we're actually giving a bit more of a a help to the superficial or the ITB tension as we call them to do most of the stabilising when we're on one leg. So that will then increase the active tension through the ITB. And it will also reduce the deep gluteal muscles from doing their job which is actually they control the pelvis better. So if the ITB tensioners are in charge of this pelvic control, you will tend to get that increased compression Should. So yeah, standing like this. And like this is really important, we identify that really quickly,

# Steven Bruce 1:30:07

very hard to talk people out to those well ingrained habits. So isn't it, I sit with my legs crossed all the time, and I don't want to do but I just do.

# Victoria Smith 1:30:14

I think it's you can stand nominator, or whatever is normal for you. Yeah, I think really, it's about not putting people into fear of going oh, you could never sit like that, again, I would say if you're symptomatic, then it's something we need to address. But if you haven't got symptoms, it's probably it's not ideal to sort of make people stand in this position. But if you're starting to develop, or you start to notice a little bit of tweak around that that area, then it's something to identify, but it giving cues is helpful. So you know, feel the weight in both feet the same. So obviously, yeah, bringing it into that position. And just making sure you can feel weight from the heel into the into the toes. Sometimes using a wall to lean into, actually having hands support can help any, any kind of thing you can you can give to try to minimise that that return where people will return back to it. So sometimes having a little thing on the phone saying check your posture can be helpful, just any kind of cue you can have to to get out of this compressive loading, which will then help reduce symptoms. So I think if people were in pain that they'd be more likely to get on board with it as well.

Steven Bruce 1:31:29

So we kind of leapt ahead of ourselves there a little bit, didn't we? What's your first statement, we presumably we've now gone through the case histories. And now you're you're looking to prove your supposition that this is?

#### Victoria Smith 1:31:40

Absolutely so your objective assessment is a real key factor. So looking at static postures, looking at how you functionally move, so when you sit down sit to stand, are you you know, going into that adduct adult position, looking at single leg tasks. So

# Steven Bruce 1:32:00

people who do that that will be a clue that this could be tendinopathy.

#### Victoria Smith 1:32:03

Absolutely, absolutely. If that reproduces pain. So if if doing this position, that movement, reproduces their symptoms. And yeah, we've got another clue. It's another part of the puzzle ticked off. Also looking at single leg tasks. So maybe going upstairs as well, are the hours they stand up onto a step, are they dropping into that hip adduction and stepping down as well. So maybe an athlete looking at hopping as they landed, they landing in this position. So just you probably need to tell your objective assessment with functional tests, to what their activity level is.

# Steven Bruce 1:32:37

So when you do that, just to clarify this, and you might need to face a camera to pick that one up. When somebody does that, dropping into that hip as they go upstairs, you're saying that that is a provocative factor that might have caused it. It's not something they're doing in response to a problem on the opposite

# Victoria Smith 1:32:51

side? No, it's usually a provocative factor. Yes. So yeah, absolutely. So looking at anything, all functional movements are set to stand. Yeah, going upstairs. Walking is another big one. So how are they walking? Are they walking with their feet sort of coming right into midline? Are they running like that as well? Again, if they've got, if they've not got symptoms, I don't touch people's running technique. But if they have got symptoms, exploring, okay, let's try just running within that parameter of your normal hip width. Or even just taking it out of reducing reduce exactly reduce the adduction. And that crossover, long strides as well tends to put more compression. So if you're striding out when you're walking or running, you tend to end up in that kind of pelvic tilt position. So looking at looking at walking, have they got a good push off from their toe? A bit like somebody asked about the question about foot and ankle react, it's really important. Have they got that stability in the foot? Is their foot rigid? So they're actually coming into more of that abduction position. So they're going into that Uber pro metres?

Steven Bruce 1:33:59 Absolutely.

Victoria Smith 1:34:01 So over pronating,

Steven Bruce 1:34:02 supinator, oronasal, pronator, oh, you've got hallux rigidus, unlimited

#### Victoria Smith 1:34:07

weight, calf strength as well. So, you know, looking at Katherine is a big player with hip hip function. So there's a nice piece of research that shows when you push off, if you haven't got that ability to push off, then what you'll tend to do is use your hip flexors to bring the hip through, rather than push the hip through. So if we think about what TfL does, that's a hip flexor. So, you know, it's just it's just looking at the sort of general strength but yeah, foot and ankle, and also pelvic control, you know, are they sort of a little bit more Rotated one way than the other. So therefore, when they're walking, that's going to affect their gait and thoracic rotation. So, just looking at all of that within within the

#### Steven Bruce 1:34:52

anterior hip on the left will give you a left tendinopathy

#### Victoria Smith 1:34:56

not not that No, it won't give you that. It's just it might be a factor within looking at how their gait is changed yes or no, no, I don't Yeah, standing like that, you know, rotate with a slightly less rotated pelvis when you're stepping through, it won't give you tendinopathy. But it might be a factor in terms of why your gait patterning isn't optimal. Yeah. Right. So

# Steven Bruce 1:35:18

take us through some more of your assessment here.

#### Victoria Smith 1:35:21

So, in terms of objective assessment, you also want to have a look at you, we want to make sure our diagnosis is right. So looking at some some tests that will prove us, right, so there isn't one specific test? No, there's no one specific test. So it's using a cluster of tests, which is, which will give us that sort of green light to think, yeah, I think we're on the right lines here. So you're putting a subjective together, you're looking at objective posture, how you're standing, you're looking at strength as well, which we'll come on to. But specifically trying to get that diagnosis, right. There's a few few tests that we use that are kind of proven within the research to be the best if you like. So why we're standing we'll go through, we'll use Steven as a wall, if that's okay. So sustain standing on one leg. So if you put your backs at your fingertip on Stevens back, and then we're going to lift this leg, so you're standing on one leg, you're lifting this leg off the floor. So this is the test, this is the hip that we're testing. It's the sustained stance test. So some quite often in a in a hit, that's painful, this will bring the pain the symptoms on straightaway. And you'll say, where are you feeling it, and it's usually here, if you're not getting anything straightaway, then you can wait 30 seconds and see if that reproduces the, the person's pain. And what you'll often see is that lateral shift, if you go into Yep, you'll often see this we've got again, we've got that compression and often dropping down into adduction, as well. So this is a a test that so you can pop that leg back down again. So it's ruining the conditioning. Okay. So if it's positive, it's likely that they've, it could be likely they've got gluteal,

# Steven Bruce 1:37:13

reproducing the more or less the exact pain that they absolutely, yes,

# Victoria Smith 1:37:17

that's my pain. So if it's reproducing pain in their back, but their concern is here, then it's negative, it's got to be a reproduction of their exact pain. So so this is a, this is a test that we would use within

our battery of tests to try and hone in on that diagnosis is quite easy to do. And it's it's functional. So it's yeah, it's a nice test to look at. But on its own, it's not going to give you that definitive diagnosis. So the other tests that we tend to use within this battery are lying down. So if we get you lying down. So if you're lying aside, first of all, so on this side. So for us to have a depth of this is the side, we suspect this is the side, we suspect Yes. So in order to one of the cardinal signs of Gruta tendinopathy is pain over the greater trochanter. Okay, so if you to find the greater trochanter, it's obviously it's, it's that sort of normally part of of the of the femur, but if you start in the iliac crest, and just run your hand over and down the mid thigh, you'll come across that, that sort of area that that sticks out. So that's when we're out that's where the greater trochanter is. So palpation, and tenderness of that has to be positive for us to have a positive diagnosis of gluteal tendinopathy. So this has to be positive, along with one or two of the other tests that we're doing.

# Steven Bruce 1:38:42

And at the moment, hips are more or less in neutral.

#### Victoria Smith 1:38:46

Yeah, it doesn't really matter so much. How the lying I mean, yeah, you probably, if we're being picky with Paul the hips back a little bit, but it's more about palpation and making sure that that spot is tender. If it's not, it's not going to be gluteal tendinopathy. So that's when you maybe think, okay, maybe it's coming from the spine, or is it the hip joint that's involved more? But yeah, that's got to be positive.

#### Steven Bruce 1:39:08

So Why might it be tender there and not be gluteal tendinopathy? What could it be?

# Victoria Smith 1:39:12

So it could be the spine. So you could have a referral pattern coming down from the spine, it could be the hip joint, so we just need to explore those in more detail. But yeah, that if you're getting all the other tests, but that's not positive, then it's not likely to be good to tendinopathy. So this will rule it out. So if it's not tender, it's not gluteal tendinopathy. So, if we get you on your back now. So, the the sort of the literature shows that tests that have a compressive force and also a tensile increased tensile load. So where the muscles active, they are the most likely to reproduce a positive okay, because they're they doing the increased tensile load and the compression together. So one test that we use I'm going to use this leg is the fader. So you can do fader and fader plus our so that's with resistance. Okay, so we're going to take the hip into flexion into adduction. And then external rotation. Okay, so we're really compressing the gluteal tendon here against the greater trochanter. And we've got that adduction and flexion. So we've got the ITB in that lengthen positions, we've got passive tension going through it. Okay, so this is the fader test,

# Steven Bruce 1:40:34

just out of curiosity, how much force you're going to put into that you're just taking it into.

# Victoria Smith 1:40:37

So I'm just Yeah, I'm just taking it into that position. So I'm not I've not got any force going through there. At the moment, the next step is to add some forcing. So what I'm going to say is, I want you to bring your foot back to neutral. So I want you to bring your foot back this way, okay. And I want to try to resist me. So I'm going to just put you back into that position. That's it. And now I want you to resist that says so. So by adding that, that tensile load with compression, they often go yep, that's

exactly the pain. Again, we're looking for reproduction of their symptoms. Yep. So that's, that's a nice test to do. And then if we get you on your side again. So we've got adduction. So inside lying, we're going to go down into passive adduction. So want the hip to be and in relative neutral, so it's not flexed, not extended. And often that again, we've got that passive tension through ITB that will reproduce symptoms, but we can also add that tensile load. So if you try to, I'm gonna try and resist you push you down, you try and take your leg back up to the ceiling. Okay? So just adding that resistance in, while the hippies in adduction will often reproduce the pain here. So they're the kind of main tests that we use. If you're on your back, Faber's isn't shown to be massively helpful. But it can be quite good to help with diagnostics. So if you move into that Faber's position, sometimes it might reproduce their pain. It's not one we would we would sort of use as a routine, but it can be quite helpful to work out if you're not sure where the pain is coming from. If it reproduces hip pain, or it brings pain on in the back, you might think, oh, okay, maybe it's maybe we need to look more along those lines. So it can be helpful to sort of a diagnosis. So they're the, they're the tests that we would definitely use to try and

Steven Bruce 1:42:42 what are you gonna do about it? Great question.

#### Victoria Smith 1:42:44

So what we need to do here is look at, first of all, are there any underlying health issues that could be having an impact on this, okay, so things like statins can potentially have a negative impact on tendon health, they, they can increase the expression of those MMPs, as we said, that can have a destructive impact on tendon health.

## Steven Bruce 1:43:07

I've seen a bit of research recently, where I'm guessing the pharmacological producers of these things have said, Oh, no, these are the supposedly muscle pain and muscular skeletal brains produced by these drugs. It's not really true. And yet people like yourself, and Malcolm Kendrick say, well, actually, there's a lot of potential risk there. Ultimately, we believe, isn't it? Yeah, definitely. producing these studies to say no, no settings are perfectly safe and harmless.

# Victoria Smith 1:43:32

I think I think that if if their pain came on, you know, within that time scale of them starting the statins, it would be something to definitely explore. There's a certain group of antibiotics, fluoroquinolones, that they can also have a negative impact on tendon health. So again, if they're taking those and the symptoms started around the same time, it's definitely worth exploring that as an option. So they're all on the slides that will be that will be sent out. And then blood sugars as well, do they have diabetes? are they managing their blood glucose levels, if they're not is that again, having an impact on on their tendon health, and that will be really important to address at the beginning. So a good subjective history, we're gonna have a key factor to just, you know, go through, I've written there on the slide, so people can still use that to help. But just to identify those factors that maybe you're missing, and maybe a key reason why you're not getting any sort of benefit. So all those factors kind of looked into, then what we would start to look at is how we manage the pain. So reducing that compressive load is really really important. So looking at positions, nighttime, really important, because that's often when they have a lot of their their pain, so sidelining if you move into sideline for me. So, trying to if you can try and to avoid Lying on the side where we have the most pain is important, people will say, but I can't because I wake up and I'm on that side. And that's just one of those things, but trying to reduce the amount of time spent in this position.

Steven Bruce 1:45:12 I suppose this is very rarely, if ever bilateral, it can

Victoria Smith 1:45:16

be bilateral, but I think if it is you probably want to be looking at the lumbar spine for us to say, okay, is that drivingly symptoms better,

Steven Bruce 1:45:25 or factors are likely to be predominantly one side? Yeah,

#### Victoria Smith 1:45:29

it's more common to be one sided. But yeah, you can get it bilaterally. But yeah, it's not as common. So we want to just try and minimise that compressive load in lying. So on your side, as we spoke about earlier, you can either have a pillow between the knees, some people prefer, if you bring this leg back, some people will actually prefer to have a pillow there. So if they sleep in that kind of position, then they will probably wouldn't find a pillow between the knees comfortable. So actually just increasing that height there by putting a pillow there can help. The pillow we spoke about earlier can can really help as well. So the sort of knee orthopaedic pillow can help. And also actually putting a pillow underneath the arm can help. Because if, if, if we're dropping down here actually can you see does have an impact on the hip. So it might be that you actually need to put something here to just take away that rotation through the thorax, which will have an impact here,

Steven Bruce 1:46:24 your commission from a pillow company

#### Victoria Smith 1:46:26

should be should I should say, by the way, what's my What's your percentage. So so the other thing is, ladies, you have wide hips, so there is a type anatomy, Cox of error, where you've got more prominent greater to Cantor's so that that potentially can can cause them to have more compression when the line down. But also ladies who are more have got very narrow waists. So a narrower waist will mean if if that waist is narrower, you tend to drop down into more relative hip adduction. So what you can use your I'm just gonna grab a towel. So what you can do is if you roll a small towel, and then just put it underneath their waist, so for you, that wouldn't work because you're not it wouldn't change anything. But if you've got that really narrow waist and wider hips, then that can just offset and it can just reduce that load through here, and also through here as well. So that's often a nice tip to sort of employ, it's going to be difficult to keep in place. It can be I mean, I would, I would Yeah, try try, you can only start like that. And if you have a rest asleep, then you're probably going to move but and the other thing is before you go to sleep, so if you go on your back. So often people will say, when I'm when I read and there'll be reading with their knees bent, and they're sort of in that position. So, yes, so minimising what you do before you go to bed. Exactly, Kindle on a pillow there. So just minimising those positions of compression before we go to sleep. So in this position, rather than doing that, just put a pillow underneath the knees so that you've got the pelvis in a much nicer position. And also sort of not sitting on your side all scrunched up. Again, there are positions that are okay, I'm not saying you should never sit like this ever. But if you're symptomatic, we need to really reduce that compression. So there are ways of helping What about

Steven Bruce 1:48:27

as opposed to passive interventions like this without positive interventions to rehab?

# Victoria Smith 1:48:33

Absolutely. So compression and rehab go hand in hand. So one without the other genuinely doesn't work. So it's, it's removing compression, but also it's looking at the muscle function. So we've tested the gluteal muscles. And actually, research shows that in symptomatic patients, they're about 25 to 32% weaker than the population without symptoms. So a big issue is yeah, definitely improving that strength around the gluteal. The gluteal muscles. So depending on obviously you want to target your your management plan to your patient. So if you've got somebody that's highly irritable, you would probably start at a different point to somebody who's a little bit sore when they walk up a hill. So you'd want to make sure you're starting at the right point for that person. But I think if we start at the beginning, because a lot of people coming into clinic are those highly irritable patients. So I'm just going to grab a pillow in a belt. So isometric exercises can be a really nice starting point for somebody who's in quite a lot of pain. So just relax your legs over there. So isometrics sort of proven that they can have a real positive impact on pain. So what I tend to get people to do probably a thick about I just grabbed on to my belts hope I covered but a thicker belt would be better, but you want Something that's, that's really not a band, not a Thera band, because it will give you want something that's solid. So as they push into it, it doesn't really move. So if you take the legs a little bit wider, so isometrics, in lying or in slight hip abduction, and then if we put a belt around the top of just above the knee, what you're going to imagine you're doing is just, you're just sort of trying to almost slide your feet apart. So he was going to take your legs, that's it into the band, or the belt. And what we're trying to activate is those deep gluteal muscles. So there's varying sort of length of time in the research vary between 10 seconds to 45 seconds. So 45 second hold, and then having a 45 second, rest in between and doing that maybe 45. Yeah, that's one way that the LEAP trial, which is a big piece of research into from 2018, they suggested 10 Second holes and do it five times. So I think it's really what works for that patient. But isometrics can have a real positive impact on pain inhibition, and also can start to get those deep muscles starting to, to wow,

# Steven Bruce 1:51:15

me. I'd heard before about my symmetric specifically working towards payment inhibition. Yeah, definitely. So you know, you're you're, you're exercising a damaged tendon here is there, Charles is going to aggravate?

# Victoria Smith 1:51:27

Yes. So whenever you're adding when you're starting to address tendon issues, is monitoring their response. So monitor, monitor that response that load. So we want to build the tendons capacity to take that increased load, whether that's going for a walk or climbing a mountain, but you always monitor it at night. If if you're kind of calm in the tendon down and you add loading, if they get night pain, again, that's a definite sign that yeah, that was too much. And monitoring pain levels. So if the pain levels go up, more than sort of two on the scale, and that response stays for more than 24 hours, then it's a sign it's too much. But if it goes away in 25, or

# Steven Bruce 1:52:06

so in terms of your guidance to a patient doing this, are you just gonna say exercise, just do that abduction to a point where you can just feel pain coming on,

Victoria Smith 1:52:15

this shouldn't really cause pain with this exercise. So as we start to load tendons, it is okay to feel pain in a tendon, as long as it's within that traffic light of green, amber red. So, but yeah, this shouldn't cause pain, it should actually make you feel a bit better. It's important when you're doing it, though, that you're not using, you're not using this outside this lateral corner of the hip, because that will be your TfL, which is a ITB tensioner. So it's important that actually, yeah, so it's important that they know where to feel it working. So they should feel it sort of around this lateral gluteal area, but they shouldn't feel it at the front of the hip. So it's just graduate gently, just That's it just pushing into the belt, and then holding it and then letting go. So that's a nice way to start introducing,

#### Steven Bruce 1:53:05

you're gonna move on, We're nearly out of time, oh, why

#### Victoria Smith 1:53:07

are we really Oh, my God, I thought would be in like 40 minutes. And so I suppose you can do his standing as well. But we won't go into that now. So a nice way of starting to increase the load to the 10s. If you bend your knees up for me, that's it. So bridging is bridging is a nice exercise that we can start off with because you can progress it. So if we bend your knees up a little bit more, so if you do it with your feet down here, that's okay, but you'll be biassing your hamstrings a bit more. So we don't necessarily want those to work too much today. So with a bridge, again, we want to check what's going on here. We don't want that. And what we what I like to do is just add a little bit of a small pelvic tilt in, but making sure they're not doing it using the upper glute upper glute max. So tilt to a small tilt for me. So take that relax down again. So you're not lifting off the bed. You're just tilting your these knobby bones towards your ribs and your ribs down towards there. Okay, perfect. Normally boom, I call them the Napoli bones on the front of the pelvis. anatomically correct. So what we're going to do now is we're going to just a little push through the heels. And then we're going to try and use these muscles here to lift up off the off the bed. So we want to be feeling it, that's it, we want to be feeling it in those that lateral kind of kind of the glutes, lift a bit higher. So this is your first nice double leg exercise to do. Again, you want to be looking at weight so you don't want to be shifting off that painful side, because you want to be tolerated getting the tendons to tolerate that load. So from there, you can do a a sort of a little hip thrusts, so up and down without going all the way down as they go down just trying to just relax their their gluteal muscles and then use them to bring them back up again. Now, to make this harder, you can move into an offset bridge. So if you go all the way down, so we want to say work this leg, we're going to put this heel closer to the bottom. Okay, so we're now going to work this leg a little bit more same movement, we're going to go up and into that bridge a little bit higher. So the difference, so you can feel your loading that side more. So again, if they're very irritable episodes, say where you're feeling it just to make sure they're feeling it in the right place, and then come back down. Again, the next step is transitioning into a single leg. Now, this is often quite hard. And often what people will do is, if you go onto one leg for me to do a single leg bridge, so that's it, if you lift up, what they'll often do is start dropping at this point, and they can't, they can't correct it no matter what they do. So then you kind of in a position where you think, right, we need to start moving things on. But I'm not happy to give that as an exercise, you can come down that the transitional is adding load into the bridge. So you would add load onto there, Tommy. So in the form of, well, if you're in a gym, a plate would be great. But often you want your patients to do this at home. Yes, exactly. So if they don't, if they don't go to a gym, which is most common, you can use home items to try and increase the load. So if you think one litre Yeah, exactly your child, your child on there. So if you think one litre of water is one kilogramme, so if you get a rucksack, you could get a milk, a large milk container, fill it with water actually don't maybe spill, you can quite easily get up to five kilogrammes, if not more, by just increase that load in a rucksack or a

bag for life. So that's a really nice way to start to build up the difference between double leg and Single Leg every day, five times a day, I would get them to do every day. And I like them to set the reps. So really, if you're trying to build up strength in the in the muscle, then you want to be getting them to work. You don't really need them to be 20. You want them to be doing maybe up to between sort of three and eight, maybe where the last rep they do is I can only do one or two more.

#### Steven Bruce 1:57:04

I'm so glad you said that. Because I thought we've had Claire mentioned on the show talking about strength training before and if you give us something different.

Victoria Smith 1:57:10

Absolutely. I know I love climbing stuff. I think she's fantastic. Yeah,

Steven Bruce 1:57:15

he's five reps to failure. 45 per reps per week is her mantra, isn't it? Absolutely strength.

#### Victoria Smith 1:57:20

Absolutely. So it's not about how many reps you can do, it's about increasing that load. So that your tendon is, is developing that capacity to to work within that. Yeah, that's good and pass the test. That's good. But yeah, there's no point sending them away doing 50, we're not going to get any, any increase in strength of that muscle. So then you should find after you know, doing that, Okay, now let's try going on to one leg, so you can try just to hover. So if you lift up onto one leg, so that's your kind of first port of call. And then you can have the long lever, which is much harder. So you're lifting up there. And then you can just do a little pull, so you're not going all the way down and then bring it back up again, build the difference. Okay, now, she's already said that she's actually had a big workout yesterday. To make that hard, you could put the hands across the chest, again, you're taking that stability away from her. So bridging is a nice way to start. But we also want to add in some functional movements, as well. And, and also we want to add in some frontal plane loading. So where we're taking the hip away from the body, so it was in two minutes. I think I can. So a real nice way to start frontal plane loading is a sidestep. Yeah. Okay. So, again, looks easy, but what you'll probably often find is, as they sidestep, what they might be doing is this, so you're trying to avoid, so standing with their hands on a worktop kitchen, stepping, and then looking at that control as you go over that hip, okay, so that they're not dropping into her. Next progression is to maybe add a band, so around the feet, so you could add a Thera band, and then you're doing that same movement, take your hands away, again, you're looking at the whole time. So, no, so it'll be tensioned up as you come here, and then it will slack as you bring the foot in. Then the next step there is to add, maybe I use sliding desks, but they could stand on a slippery surface with a foot on a tea towel with a band around their toe and you're sliding the hip out, and then you're bringing it back in again. So Pilates reformers are quite good for that. But not everyone has to look for and doing that. Again, so we're looking at that kind of patterning where that they're kind of dropping across this way. Or if this is the leg that's painful, as they take the hip out, we don't want that happening. It's just looking at that nice control. So we haven't got that sideways shift or compensations. So that's a very quick way of going through frontal lobe frontal plane loading.

# Steven Bruce 1:59:52

Do you want to? Can you do that on one of your disks and just demonstrate on one of your disks very quick

Unknown Speaker 1:59:56 course I can do it in front

Steven Bruce 1:59:57 of the table this time.

# Victoria Smith 2:00:00

So I would probably need to this is a slippery floor on the detail floor. This is. So what we're doing is we're going to go into that movement and then bring it back in again, you put up, you could put a band around the toes to increase that load, and you want, you want to start working into quite a heavy load as they can tolerate it. So you start with your minimum progression, then you build it up again, by

# Steven Bruce 2:00:24 production, abducting your left leg, you're working the left

# Victoria Smith 2:00:28

and working the left, but I'm also working on the right as well to stabilise so you can do it on both sides. So we're working the abductors in that in a range. Okay, so it's important that we do add that into the programme, along with functional work, which is, you know, squats, step ups, but of all monitoring, that that will shift,

# Steven Bruce 2:00:49

will you have some other things you're gonna show us, we're gonna have a stop to running, we want to go and sit down for a couple more questions I'd like to address I'm gonna ignore questions that have come in. Thank you so much for being so patient with us. Very quickly, very, very quickly, before we finish this. I've been saving this when somebody who calls until physio elite says what do you think about shockwave for conditions like this?

# Victoria Smith 2:01:13

Yeah, so the research is, yeah, it's not all there. But actually what people find they do get positive results from it. So certainly, if somebody has failed with good management, then yeah, I think I think it definitely is worth a try. You're not going to do any, any sort of detrimental harm to the tender. So yeah, you know, I think there are sort of definitely lots of physios out there who've started using it. And and I think, yeah, it's definitely worth a try.

# Steven Bruce 2:01:44

Yeah. And if shelf shockwave works, then it suggests that actually manual physical digging in with your fingers and your elbows could have some beneficial effects as well, if you do it, right. Do you have Do you ever do that?

# Victoria Smith 2:01:54

I know I don't tend to but I do use sort of dry needling around the area. If I've got any areas of glute max, maybe TfL. To to try and reduce, reduce that sort of activity. I'm just wary of compression. So you've just got to be very sensitive. And I probably wouldn't get anyone to do any sort of deep heavy massage work over this area, because you can start with topics just just remembering the compression and that you're not increasing that. Okay.

#### Steven Bruce 2:02:20

Jason says Would the constructive rest position be useful? Now? I don't know what that means, you know, okay, it's probably too late for us to get an explanation from Jason that moment. So we'll shelve that one for now. Larry has asked about deep friction, which is kind of you kind of answered that one already is not too much over not too much. compressive force anyway, Lauren says, when you talk about weak muscles, he finds that people can have very tight muscles. I find this to be a learned tension and can also manifest as a functional weakness. isometric exercises can increase tension when this contributes to the weakness.

# Victoria Smith 2:02:53

Yeah, absolutely. So you can have co contraction. So you can definitely have people who guard and as a response to pain. So I completely agree with that. Yes. So it's choosing the right person. If you've got somebody who's guarding and is very stiff within their whole musculature around the area, then absolutely, you'd want to teach them how to relax there first. And then you could maybe look at isometrics once you were happy, they weren't going to grip and guard. So no, I think that's a really valid point. And something I definitely do myself. Yeah. Okay.

# Steven Bruce 2:03:25

Just a question. Come in here. G says, Please, can you explain advise about the best exercise prevention for hip impingement in patients in their 40s and 50s, only, we weren't talking about impingement here.

# Victoria Smith 2:03:37

So it's avoiding any positions really, of extreme flexion internal rotation. So it's trying to make sure that the the deep control is is is working well as well. So looking at those gluteus minimus, so all the muscles that have an attachment onto the capsule of the hip, make sure that their work so you've got that precision of movement. So bridging is single and bridging is great. There's lots of different is probably a whole new topic we could we could discuss to be honest with you, I know that we're gonna get you back. Fai s is definitely condition you kind of work on individually, but yeah, avoiding those positions that you know, so avoiding any kind of deep squats or any forced hip flexion or even the opposite. We're trying to really force the hip into a position that doesn't want to go in so forth. Adductor stretches, forced and hip flexion stretches just where you you're really putting that joint into position. It doesn't really like Okay,

# Steven Bruce 2:04:38

and last question. Last question. Lawrence says, I think it's the same lines. I've seen a cadaver dissection demonstrating a septum from the posterior aspect of the ITB interlinear Asper. It separates vastus lateralis from the short head of the biceps with both muscles attached to it. Do you feel that it has any bearing on what's going on higher up?

# Victoria Smith 2:04:59

Say vastus lateralis definitely, because it does, it acts as an amplifier. So you're going to increase that tension. So if you've got, if you've got a really large vastus lateralis, then absolutely, that's going to have an impact in the tension of the ITB. So it's looking at that whole muscle sit that abductor synergy, and working, you know, looking at what you need to maybe sort of decrease and what you need to increase the strength of so yeah, absolutely.

Steven Bruce 2:05:29

Okay. Actually, there's one more I saw this come in earlier on. And if you talk really quickly, we might get an answer to this one. Keith says, I thought sitting stretches the glutes, the femur moving forward, increasing the load on the bursa. And you were talking about sitting being?

## Victoria Smith 2:05:44

Yes. So if you're sitting in deep flexion, or on a low chair, then yes, you are Yeah. And you're going to be it depends on to the glutes. So the posterior glute Meade does have an extensor component. But so, but yeah, flexion generally, in flexion, you are increasing that the lack of lumbar fascia compression, so it will have a negative impact on on the gluteal tendon.

# Steven Bruce 2:06:14

Well, I reckon this 533 People are going to be thanking you for some things. So Victoria, thank you very much. It's been great, isn't it? I can't believe it goes through. So I

#### Victoria Smith 2:06:23

cannot believe how quickly it went. I've still got loads to tell you about. We would

#### Steven Bruce 2:06:29

love to get you back. I'm not seen all that feedback on here. But I will get that feedback later. But it's been great fun. It's been very, very, very interesting stuff. Well, there you go. We are out of time. As I said, I really hope that that was a suitable mix of science theory and practical skills for you. And of course, I'm really hoping it's really useful in clinic for you as well. Let us know what you think because I'd love to get Vittorio back in again, if that's what you'd like us to do. Now, looking ahead to next Wednesday lunchtime, we've got a case based discussion discussion lined up for you. If you haven't attended one before, don't be shy, there's always a massive experience being shared. So even if you don't have a case of your own to discuss, it's really worthwhile. The show after that is on Tuesday, the 16th. When I have got the delight for Serena Simmons in the studio, Serena will be talking about imposter syndrome, how to deal with your own inner demons. It will be more than that. Of course, it'll be an expert psychological examination of the way we deliver treatment. Lots about that all important skill communication. As I said, Serena is absolutely lovely and a so so knowledgeable. So that's an evening show starting 730 on the 16th It's Tuesday, and we talked about dry needling just a few minutes ago. And our dry needling course is almost upon us. Simeon Neil Asha flying in from Tel Aviv, Professor Bob going flying in from Baltimore, you will seldom find two such international experts in the same room. We've got three places left on the quarter we had when we started the show. And the course runs from the 19th to the 21st of this month. And seriously, this is the absolute best course on dry needling that you'll ever come across anywhere in my opinion. I can't promise we will ever manage to get these two together again. So the link is on the screen. There are three places left and it's first come first served. That's all for me. Thank you for joining us. Enjoy the rest of your evening and good night from all of us here.