

345R- Low Back Pain in Adolescent Athletes with Angela Jackson

Steven Bruce

Good afternoon. Here we are we broadcast number two this week and today we're looking at low back pain in adolescence in particular, in adolescent athletes. My guest is the hugely experienced physiotherapist Angela Jackson. Angela's worked a lot with young cricketers, but she spent over 30 years looking into why some youngsters get injured and some don't, actually has also got a bit of a secret which I'm going to reveal. She told me in a phone call last week that if she were to retrain, she'd probably be an osteopath. And she regularly sees an osteopath herself for treatment. So we love Angela already. Angela. Good afternoon. How are you?

Angela Jackson

Very well, indeed. Thank you. And thank you for that lovely introduction. Yeah, I think if I knew the same things again, no doubt I'm I'm definitely more osteopathic than physiotherapy. So I like the blend of everything.

Steven Bruce

Yeah, I don't want to alienate half our audience you do like the chiropractors as well, don't you?

Angela Jackson

I do indeed go to those as well.

Steven Bruce

We're going to talk about adolescent low back pain. And I was I was interested to see looking, get some background for this that the British Medical Journal says, back pain in somebody under 20 is a

red flag. Well, it's not a red flag, as far as I can see, obviously, it's a note of caution. But that's kind of your take on this.

Angela Jackson

I think that's a great way to start. I would say that back pain under the age of six is a red flag. So generally, we would say that the types of injuries that I see routinely in clinic would be sort of predominantly things like bone stress injuries, and caused by athletic activities that predominantly relate to excessive extension or excessive flexion. And then the other cohort, which I see less commonly in clinic, but we know we're out there are the nonspecific low back pain and that's most definitely, you know, the more we treat that like a red flag, the less chance we have a success. So how I view it is the non athletic population are most likely to get probably I think there's about a 40% prevalence in the non athletic population of low back pain. And then we see within that athletic population, particularly those involved in extension sports, a really high number, you know, anything up to 50% of those diagnosed with low back pain in the athletic population has more than likely got a bone stress injury.

Steven Bruce

Right and when you say 40% in the non sporting population, we are still talking about those under the age of 20.

Angela Jackson

Yeah, Absolutely. So I in terms of maturation of the skeleton, we need to think about, when does the spine if we just stick to the low back for today's discussion, then small areas of those lumbar spine vertebrae don't actually fully ossify and become what you might call Adult structures until around the age of 2324. So for me, if we're thinking about young athlete or young, cohort, low back pain, we really need to categorise those as probably the under 20. Fives.

Steven Bruce

Right. Okay. So what's your process then for assessing whether you should proceed with just physical therapy or whether you need to get more diagnostic information before you can treat your back pain sufferers?

Angela Jackson

So I'm going to split them into sort of those three groups really, whereby probably primarily I'm looking at, are they activity related that makes them worse, or are they actually made worse by rest, and that, in effect defines our nonspecific low back pain generally love moving, but they hate static positions, that's very to me, like the adult population that we see routinely. The cohort that I see more commonly is those that have got an activity related low back pain. And invariably, what will happen is they start with a very classic history. So if we're thinking about those involved in extension related sports, so we may be talking about your tennis, your cricket, running, kicking those in the

scrum at Rugby. Effectively, what we're thinking about then is they will get pain when they go into those ends of range of extension. And so they will then no doubt, be pain free, when they're not in those positions initially. And we see a very, very classic history. And as long as that classic history is there, then I personally will proceed with rehabilitation straightaway. I'm not as concerned about getting imaging straightaway. There are instances though, where they don't necessarily behave as we'd expect, perhaps they've got bilateral symptoms, perhaps they've got referred pain into the leg. And at that point, certainly, if there are any of those red flag questions jumping out, then I have, you know, a much lower threshold for sending them off for imaging.

Steven Bruce

Interesting, you mentioned rugby scrums, I've never thought of that as an extension activity, although I've always thought of it as a high risk activity. Because the extent when the scrum goes wrong, or is that

Angela Jackson

I think some of it depends on technique, I think, and probably different positions within the scrum. But there are some people who naturally when they go into that sort of hip hinge position to go into the scrum, maybe do so with more either pelvic tilt forwards, or lumbar spine extension. So maybe naturally, they're going into those positions just by their movement, competency. And then you've got that whole collapsing of the scrum where they'd be forcibly moved into that extension pattern. And the unique part really about, perhaps a gymnastics and rugby is that they generally present with bilateral pain. It's more common in those sports where you've got one handed dominant hand, or dominant leg such as your tennis, cricket or football, that you're gonna see more unilateral symptoms in those early stages.

Steven Bruce

Given that these guys particularly in rugby, obviously, but but also even in, in tennis, for example, or cricket, they're likely to be suffering a lot of aches and pains as a result of the amount of sport they're doing. Do you find that they can often identify the point at which the back pain began? Or is it simply that eventually they noticed they've got a pain that's not going away?

Angela Jackson

Usually, I would say if we stick to that sort of extension related low back pain, the most common cause of that, as I say, is a bone stress injury. So if we think of that court cohort, first of all, what will happen initially is, they will usually get intermittent pain on activity, let's take specifically say cricket, they might bowl maybe 20 balls, and then they get low back pain, particularly if it's a particularly fast or high intensity effort. And that might or might not cause them to stop straightaway. So sometimes they end up coming to an abrupt halt and they just realise that they can't carry on and but quite commonly, they just sort of stop for a little while, then they'll have another go. And then maybe they stop for a few days and they they avoid that extension based activity, and then they go back to it and over a period of weeks what 10 As to happen is, each time they go back to it, their tolerance is less.

So if they could bowl, you know, 20 balls before the pain came on two weeks ago, that rapidly comes down to two or three balls and the pain comes on. And at some point in this proceedings, either over many months, with a stop start pattern, or just maybe that awareness that they need to get something done about it in order to be able to carry on doing what they enjoy. They come and see me and it's the sooner we get these kids in this process, the more likely we are to turn them around rapidly.

Steven Bruce

Where do you think the bigger problem lies? Is it with the small clubs who were unlikely to have professional physio cover? Or is it with the more I'm gonna say more professional, obviously not going to be professional at 16 17 18 years of age, probably. But clubs were there, their levels of activity are more intensive, but they might get recognised more quickly.

Angela Jackson

Yeah, I think that's a really good point in that. Last year, I did some work for the England cricket board on trying to raise awareness of these low back injuries. So the main sort of setting within England cricket is that we have an elite pathway. And probably from about 14 years of age, these guys will have access, if they're on that pathway to really good strict monitoring of how much they do, the importance of all the nutrition, the sleep, the things that contribute to wellness. And they will be picked up and warned that if they get any low back pain, they're to report it straightaway. But as you rightly say, the actual volume of people who actually play cricket, are supervised by maybe their dad or another parent or somebody who's been in the game a long time. And their awareness of the fact that low back pain in adolescence isn't normal is much, much less. And so perhaps if they experienced low back pain, the typical words are Oh, don't worry, everybody gets low back pain when they bowled, don't worry, I got low back pain. And these are the words that that literally stopped me dead in my tracks and make me cringe because what we're doing is perpetuating a myth. What we do know is that the predominance of these injuries start as very low bone stress injuries, little bit of bony oedema, they're given that right management in those first few days will actually cause a resolution, that bone will adapt and get stronger. And effectively these kids get back to sport safely within a few weeks. But if you miss that window, the progression of the disease really is quite fast. Yeah,

Steven Bruce

I was just thinking and I may or may be wrong in this assumption. But the kids who are in the the less professional end being supervised by dad, they're trying just as hard as the kids who are in a higher level club, but they might not have the same skill levels or the same technique as people who've got proper coaching. So they may be even more vulnerable to injury perhaps.

Angela Jackson

Yeah, no, I think that's absolutely right. I think we've got lots of really good points there is that they're blissfully unaware, it's a bit like we don't know, what we don't know is they're not aware that

actually spikes in bowling activity, for example, within cricket, but it correlates to all the sports are their worst enemy. So we see the majority of low back pain in say, for example, cricket or tennis in the first three weeks of that summer term. So what tends to happen is that they are so excited to be back outside playing tennis or cricket or other athletics like high jump, the summer sports traditionally in the UK, might be different times of year for different viewers across the world. But what we tend to see is that they've maybe not done enough training for the amount of work that they suddenly find themselves able to get involved with in those first few weeks of that summer term. And, and we see this again in September, in the UK where the football season starts soccer season, the rugby season starts. And very rapidly, these kids just have had lovely lazy holidays, and now suddenly find themselves exposed to very high loads, which in themselves isn't the issue if they trained to to gradually build up to those loads, there wouldn't be a problem. But one of the big issues we've got is a lot of the guidelines just give a maximum number of say baseball throws or cricket balls that you can partake in. They don't think about the fact of what's the journey like from getting from none of that activity to suddenly being involved in hundreds of balls a week.

Steven Bruce

Yeah, an interesting thought. And I suspect that quite a few of the people watching today they might not be dealing with the same level of sportsmen as you but they will be seeing anxious parents bringing in their kids after the staff or the sporting season with with injuries like this. Amanda has sent in an observation or a question. So thinking about skeletal maturation, she asked what the implications are for hivelocity techniques, you know, manipulation in patients under 25. She says she'd always be cautious and personally wouldn't do it with younger patients, particularly under 18. But she'd never thought that any caution should be extended into the 20s. No, not that she wouldn't extend any caution is the 20s. But it wouldn't have been one thing into account.

Angela Jackson

Yeah, absolutely. And it's a really good point. So I think this is where one of the issues occurs is if we are thinking about at least one in two of these children, I think maybe go back to some of the research to highlight the point is that when a group of young people presented to a doctor in America with just a two week history of low back pain, because in the USA, MRI scanning is a lot more prevalent, and much more accessible. These kids were all imaged, so a two week history of low back pain. And what happened was that 48% of them on X Ray had a sponder lysis. And that's effectively a term that's used to describe a lumbar stress fracture in those grade three, grade four bone stress injuries. So at this point, it gives a real sort of question to, why would we be doing any kind of hands on intervention to these kids who have a potential stress fracture. So when we've got this classic history of youth athlete, they're involved in extension based sports, and we know that the preponderance of them will probably have an element of bone stress injury be that bone edoema, or a lumbar stress fracture. So at this point, I guess my threshold for using manual techniques, and I'm trained in high velocity techniques would be really low, until I was confident that that person had gone through skeletal maturation. And the area that we associate with those bone stress injuries, is the PAs inter articular. Iris and the ossification age, give or take a couple of years either side, depending on whether they're early developers or late is going to be around the age of 2324. So I guess what we need to start with is, we know that the anatomy is going to be that of immature bone, we know that the likely diagnosis in this specific cohort with this specific history is going to be a potential for any level, we don't know until we scan them any level of bone stress

injury, and that may include a fracture. And I think whilst I personally believe that we are unlikely to cause a fracture, we may worsen one. And the problem we've got is, even if that's not likely, then the I've just had a case quite recently, where a child presented to me with, excuse me, with a six month history of low back pain. And because of the symptoms, they were they started with that classic single sided, they moved to being bilateral, they moved to becoming constant, I was quite concerned that the child not only had a bone stress injury, but probably quite a severe one at this point. So we got some imaging done, and there are a stress fracture at L four and a bilateral stress fracture at L five. Now, this child was manipulated at the onset of the condition, and the parents are now very anxious. There's a potential for litigation going on. And how do we defend our actions in terms of I actually don't think that the the manipulation probably had anything to do with the onset of the condition? Neither do I think it had anything to do with how it progressed. But I really struggle to defend that person in court. And that's where sometimes we have to make our decisions by is this something that we can actually justify given the anatomy, the maturation and the likely disease progression? Yeah,

Steven Bruce

and I think that's a really, really good cautionary note for everybody, isn't it because we, we can't spend our whole lives worrying that will end up in front of the Professional Conduct Committee, but it is there in the background, and anything which we do, which is outside the standard guidelines or outside sensible precautions is going to stand us into danger regardless of whether we caused the problem or or exacerbated it. I suspect that in a case like that, people might allege that a practitioner who was manipulated or back could have caused one of those fractures and it's a difficult process to prove you didn't.

Angela Jackson

And that's the problem, really, it's not that I necessarily buy into that belief. And I obviously am certainly very mindful of what I'm saying in front of the child and the parent but the probability after six months of a Bone stress injury is that there's now a pseudo arthrosis. There's a lot of fibrous tissue, the momentum for healing the amount of bone marrow edoema there to actually accelerate healing is probably gone. So had the child been, maybe if this clinician had been more aware of of the likely hood that this was a bone stress injury when they saw them at six months, what you can say is the manipulations probably got very little to do with it, but missing the diagnosis had. So I think it's a two fold effect is one is that the longevity of the symptoms really is the bigger contributor and progressive nature of the disease. So, for me, it's about a raising awareness. That's why I wanted to come on your show today, just to say, you know, this is the most likely cause of extension related low back pain. And there is a sooner we can get hold of these kids and put them on the right pathway, the better. What's

Steven Bruce

the what is the best diagnostic pathway for this? Is it MRI, or would it be X ray, given the younger the age of these young people?

Angela Jackson

So there's no gold standard physical tests. So if you put them in your treatment room, your biggest sort of indicator that you've got somebody with a lumbar bone stress injury, is the subjective history, this classic history, when we start to do objective tests, we start to run into problems, there's nothing that's going to be robust enough, we've talked about going into extension going into side flexion, stock tests, a whole bundle of things. And each of those contributes to my sort of risk factors. But there isn't a robust test. Most commonly they are worse on extension, and or side flexion. And certainly when you combine it and compress the painful side, you're much more likely to reproduce their pain. And that's it's very rare, I would say that if extension and side flexion combined, caused pain that reproduces their pain over the area where they're indicating it is that a bone stress injury is not present, we don't see many facet joints, we see no muscular issues in this population group. So whilst you can get juvenile discs, you can get a few other things that aren't happy in those regions, you're most likely movement propagation is extension side flexion. And when you've got that inexperienced hands, you may decide that you're going to proceed down a rehabilitation protocol. And there's very little role at this point for manual therapy, because the spasm will be there to protect the bone. So even if we do some soft tissue work on them, it's going to come back because it's still trying to give some bracing type effects to the bony area. So I don't tend to find that unless the patient's in a lot of pain that I actually do any of my manual techniques at this point, much more likely, I'm going to start to get them on a programme of breathing and exercises. But more and more my tendency is if I were able to get an MRI scan on every child, I would. And that's because what the MRI does is it shows us the extent of the injury. So if we take our bone stress injuries, it has been on a level of one to four, the ones are basically just maybe asymptomatic even. And maybe just intermittent symptoms, our twos have got bone marrow edoema there, but no fracture. Threes have got an incomplete fracture and fours, they've gone to being that complete. So what that certainly does is dictates the timeline that I need to keep this child out of extension based activity. And it shows me whether perhaps the child may need bracing, or they may need other interventions, they may actually need further imaging to really identify if the injury is just located in the past or if it's spread either to the transverse posttests or the pedicle. So MRI is really a very, very useful tool for confirming your diagnosis, making sure that we've not missed anything, but primarily understanding the level of disease. And you asked about X rays. And really when I qualified and I'm very old, we used to be told that we were looking for that Scottie dog sign that an x ray would show us but if you think about it in terms of by that point to get a Scottie dog, you've got a complete fracture. So really what we're going to do is end up missing a whole pile of kids that do need to be have activity modification. They do need to change what they're doing. But they're not going to show up that mild bone edoema will not show up on an x ray it has to be a specific set of sequences on on a high level MRI scanner, but then went towards does everybody need a CT scan? And absolutely they don't?

Steven Bruce

Yeah, I guess my, my question really was partly about obviously you got, you're going to see different types of injury on an MRI from what you would see on an x ray. But of course, x rays are a lot easier to get an MRI is on the waiting list is much shorter, certainly within the NHS.

Angela Jackson

Yeah, I was writing something for someone yesterday, and and they gave exactly the same question or the same statement. And isn't, isn't X ray, actually a good thing to do. And I actually believe not, the only reason that I would do it is if we absolutely couldn't get an MRI, and I was worried that there was either a tumour or that there was a big spondylolisthesis, where the actual vertebrae has slipped. And that would be in the presence of some really weird and random conditions. We had a child last week who actually had a disc itis. So this was, you know, it was much more like an infection, lots of irritation. And the severity of the pain meant we needed instant images to work out what was going on. But if say, for example, you sent a child with a spondylitis. But it was an incomplete, it hadn't got to Scottie dog stage. So it hasn't shown up on the X ray. Unfortunately, those parents and those kids will go, there's no bony injury. So it isn't a stress fracture. And therefore, let's get back to sport. And so for me the effectively the false positive or the I don't know how to predict now I'm not explaining that well. But the the danger of giving somebody a there's nothing on X ray, when the probability is there's quite a lot of pathology and bone edoema going on, is that the the likelihood is they'll not adhere to a rest period. Right.

Steven Bruce

Your grade one injuries you spoke about earlier on. I know you said there's a demon present in Grade Two, what is present in grade one injuries that shows up on MRI.

Angela Jackson

So invariably, what you see is if we think about what bone stress injuries are, is that there's an ongoing period every day, an ongoing process of osteoblast and osteoclast activity. So if we suddenly took up running, for example, and in our wisdom, we decided to start with a 5k, not a couch to 5k, then the bone in our to be a femur would be in for a heck of a shock. And so very rapidly, that bone would then say crikey, if they're gonna do that, again, I'd better start to lay down more bone. And so what happens is you're getting this ongoing period of bone being laid down and bone being resolved by osteoclast activity where it's not particularly needed as much. And so that's a normal, ongoing process. But actually, if you scan that person during that phase, they would probably show up with some bone edoema. So active bone remodelling is going on some of those as they head towards a sort of high level of bone edoema may well show up then on the MRI scans as they head towards that grade two injury. And they may have started to become intermittent symptoms. So if we got them first episode of back pain, they've only had it for a few days, we send them for a scan, we're probably likely to see that type one. What's more likely is that they've become more symptomatic. And that's what sent them to the Osteopath or the Cairo or the physio. At this point, they are getting symptoms every time they do those extension based sport. And a type two would be I've got lots of bone edoema going on in the area. And there may even be some evidence of a fracture line, but it's not break breached the cortical bone. And so at this point, we tend to find that if the bone is given chance to adapt very rapidly over a six to eight week period that will settle.

Steven Bruce

Okay, so the first part of your rehab protocol then is going to be rest I take it for x number of weeks depending on the size of injury.

Angela Jackson

Yeah, I think that's it's an interesting word rest isn't it is that we need to take them out of all extension based exercise. So my protocol would be around two weeks of absolutely nothing. So irrespective of grade, I want to give the bone a chance we know that invariably what happens is my analogy of the person who starts running and you start to get that bone remodelling is it takes between seven and 28 days for that bone to toughen up enough to cope with a little bit more load again. So if we can pull them out of all activities, so no gym, no kicking, no throwing, no running For two weeks, then most of these will become pain free, which is great. And the only thing I do let them do is walking on the flat. And if they have access to a static bike, I will let them carry on exercising on a static bike, because that's a flexion based activity, where we know it's predictable, it's not riding their bike down the mountain bike trails and going over bumps, it's just going into a flexion based activity, which helps just build a little bit of sanity into the thing, most of these sporty kids are gonna go absolutely nuts when you tell them that they are going to be out of sport for invariably 12 to 16 weeks. So starting something that feels positive on day one, and is not going to harm them, in my opinion is not a bad thing.

Steven Bruce

And must be quite hard to get any child to adhere to a no exercise regime. Because just in the playground at school, there'll be running or jumping or jostling around with each other. When is that ever a risk, as far as you're concerned,

Angela Jackson

the younger they are the worst that is. So in the ones that I get that are still at what you might call the playground phase, the eighth to say 11 year olds, they're still in our junior school environment, they are way more problematic. And for the most part, what we say is that they're going to be on indoor play those early weeks, just because they just can't actually trust themselves. It's not that I don't trust them, but they can't even trust themselves that if a ball came along, they wouldn't kick it, throw it or join in. And one of the biggest issues here is that that child gets very isolated very quickly. So it's balancing that. And I don't use a lot of bracing, but actually, in my very young children, those eight to nine to 10 year olds, especially if they've got a bilateral injury is I will actually brace them just so they remember that they've got a problem. And so that actually just you know, I'm not sure there's the evidence around does bracing actually cause restriction of motion at those lumbar spine segments is actually quite mixed. But what I think it does do is cast a reminder that they've got an issue. So in my little ones, I might well use that because I think it is very hard for them to remember or to hear to the programme. But if you said to a slightly older child, I think I can get you back playing sport, probably stronger and fitter, and maybe you know, doing things better than you were doing before. Because we rarely get this chance to do this strength work you're normally too busy to do it is that if we could keep you in a really good controlled programme for about eight weeks, then that's going to make a massive difference. Because if we get this wrong, the likelihood is that this could become a more serious injury that weren't, that's not going to affect you long term, I think we've got to make sure we don't cause fear. But it's likely to mean that you're out for the rest of the season that these take on average, four to six weeks at four to six months sorry to heal. If we don't get it right in those early phases and face with two months or four to six. Most kids, if you give them that really clear explanation, you remove the fear. But most importantly, you tell them what the

implication of non adherence is, there's not that many of them that really kind of decide at that point that they're going to kind of not stick to it.

Steven Bruce

I do find the parents are a problem. Do they tend to go along with your advice? Or are they often a worse problem than the child?

Angela Jackson

Have you been listening to some of my patient interviews? So? Yeah, I think it can be I think there's there's two extremes. One is the parent who then hears the word fracture. And I think this is where what hopefully you've heard me use a lot today is the terminology bone stress injury, because it is a spectrum. It's not just that they're all fractures. And so I think if you know, I'll have a parent who may ring me up and say, Angie, will you see my child? They've got a broken back. And I'll say, Are you you know, are they able to get into see me, you know, I don't want to belittle the chip poor child who has, but most of the terminology that we use causes somebody to go from the word fracture to broken as though it were like a broken arm. And so we've got to remove that fear. And we've got to make sure that that parent doesn't actually protect this kid from ever moving again. And then that the other end of let's use that word spectrum. We've got a father who came in not long ago and said the exact words of well is back settles down. I'm only really here because his coach told me that he wouldn't let him bowl again till I've been checked out by you. But actually, we know that all kids get back pain. So you know, you've then got to win that parent over to persuade them to try and stick with, you know, the set of advice that you're giving them. So it's It's often those extremes, the ones that are really paranoid and the ones that are somewhat blase.

Steven Bruce

Yeah, we've had a question from Helen. And you've answered this to some degree. I wonder who's in the house, you can enter it. She says, Could you share what exercises precautions you might use for a low grade? spondylolysis? Could these be applied anyway to young athletes presenting in that way, even if we can't get a an MRI quickly? Yeah.

Angela Jackson

So what I tend to do is I split things into a sort of protect phase, then a repair phase, I do apologise that my spaniel has suddenly started to bark, I'm rather hoping that she'll eat the postman quite quickly and settled down. So she or maybe. So we split these exercises, and I have a whole protocol on a course outlining all of this, but let's go through the sort of those early phases is that if we start to identify that perhaps, they're not good at controlling that ability to go into that hyperextension position, we could start some simple supine abdominal exercises, where they're fully supported, they can't get into extension, the lying on their back. And we then start to work on maybe like dead bugs, or some Pilates type base work. And critically, what I think happens in a lot of these children is that their mouth breathers as they take a big breath in almost like that gasp type, startle reaction is that they go into a more extended position. So I'll often literally day one, start on some abdominal

low abdominal work short levers with the the legs, breathing patterns, really getting that diaphragm, to start to function efficiently to start to drop on inspiration. And that can also obviously help with pain management, and if they're a little bit anxious about this as well. So starting in that supine position, we can also get them into a sitting position, start on some hamstring work, and really developing that lumbar spine control. And then it kind of goes through what I would call the developmental process of a child. So we start in supine, we can then move up into all fours, teach them lumbar spine control, as we start to add in some dissociation of them being able to either use the arm or the leg, but not moving their lumbar spine, and start to think about how they rotate through the hip and making sure that that's in isolation to the ball and socket joint, not the lumbar spine. And then we can start to move them into Wall positions where they've got the wall there to protect them, and they can start to do some abdominal work and pelvic tilting against the wall. So that's kind of my early phase, I would say.

Steven Bruce

Okay, thank you. I've got a specific for you here, which I think looks quite interesting. Kate says she has a 10 year old girl passu, possibly with Sherman's kyphosis in lower T spine upper lumbar spine, doesn't usually cause an issue other than reduced flexibility in extension in gymnastics, and dancing, etc. But she recently suffered lower back pain after horse riding when there was a lot of cantering and non Spirit work. It's lasted a couple of days, it seems the Paris finals around the flex area are very sore, but would you suggest there might also be a bone stress injury, and that because muscle pain is rare in that age group.

Angela Jackson

case I think my daughter had Sherman's so the first thing to reassure is that that doesn't limit them in the long run. My daughter's a professional windsurfer. And while she struggled a lot with those those Sherman's aches and pains as a little one, she did fully outgrow it. And we were able with lots of really good exercises to maintain an excellent posture. So for those not so familiar with Sherman's it's that sort of wedging of three adjacent vertebrae usually around two to 11. So if you imagine that this is one of our risk factors for our bone stress injuries, is that because you're more in a slightly stiff or flex position in those lower thoracic segments, what it does is puts more stress on the joints above and below. And as a result of which you can get a little bit more shearing through those lower lumbar vertebrae. And so what I would suggest that is that she's probably I don't know how familiar she is with horse riding, you're welcome to reach out to me after the show. But importantly, I think, if it's a relatively new activity, she may well have a little bit of bone stress reaction rather than injury to that new activity, and it's possibly that it's put it into those more extended positions and cause some irritation there. So my recommendation would be that you will see an increase in muscle spasm because it's trying to brace itself to protect it. Self. And if we can just back off all of the gymnastics and the writing extension based activities for a couple of weeks, I'm hoping you'll see that settle down quite nicely because you've got that awareness, and you're spotting it really early. So I guess, keep her off gymnastics for two weeks, keep her off any of the other extension based sports she played, and keep her off her horse for two weeks and just monitor those symptoms. And really, if they're not settling, then that's when I sort of maybe think about higher sort of suggestion that there might be a bone stress injury, and maybe worth getting some imaging done.

Steven Bruce

Thank you very much. I was actually I was thinking about the young case that you were talking about earlier on. And you said it had gone from one sided to bilateral to constant pain. And I'm just wondering whether actually, if you combine the age of that patient with the the expression constant, low back pain that is in itself a red flag, is it not?

Angela Jackson

Yes, I think maybe I've probably slightly confused the audience there. So I'm glad you've picked up on that. So let's go through that disease progression that we've talked about from the four stages of injury, it's rare to go straight to a high level injury, there's usually been a little bit of a history in the background. So what we see initially is unilateral low back pain on the contralateral side to the upper limb that is dominant. So right handed tennis player, right handed cricketer thrower is going to present most commonly with unilateral low back pain on the left side, and that will be worse on activity and settled with rest. If that isn't, then given the appropriate management of activity modification at that point, then what happens is that you're effectively either going to offload it subconsciously, and you're then loading the other side more, or potentially there's, if it has gone to a fracture, there's a little bit more risk of a little bit of instability, which then causes more stress through the contralateral side. And as a result of which we then start to see more, again, can be bilateral intermittent symptoms, but that back pain can in itself become a point where they are getting it even at rest. Truly constant pain, it's there at night, it wakes them up. It's it doesn't change on any position, is what I would call a red flag. And what I'm more talking about here is just the frequency of the pain on every single time they go into any extension based pattern. Right? They can get pain at sitting. But it's it's more rare. And it's usually an indicator that we'd be getting a scan done anyway, because it's beginning to sound like a more severe injury or not a bone stress injury.

Steven Bruce

So we don't have much time left, I'm going to try and get through quite a few questions which are on the list here. Caroline has asked what you would request when you're sending someone to a GP for an MRI because she wouldn't just trust the GPS to ask for the right sequences.

Angela Jackson

You probably if you're in the UK, Caroline won't get her a MRI scan through the GP. Almost always unless there's a red flag situation, you're going to be looking at encouraging the parent to have to purchase that themselves. And what you're doing is suggesting that you want to spondylolysis protocol, which will have T one and T two imaging and stir STI are sequences.

Steven Bruce

Would you go for coronal as well, and it doesn't cost any extra doesn't take any extra time. But it gives you just a little bit more information about pelvic areas sacral reactions on?

Angela Jackson

Yes, I think we can't exclude the fact that if there's a inflammatory process going on, it would bring things into more clarity. They do behave a little bit differently. We're getting that morning stiffness associated with it and sometimes a familial history, but there's no harm in going a little bit lower. Yeah.

Steven Bruce

I've had a comment sent in by Scott, who says that studies on American footballers show an incidence of about 23%. And I think he's talking about spondylolysis. But it shows that players with spondylolysis have no more time off playing or training than the players without spondylolysis usually occurs around the age of seven years and expert and he's written experts in capital letters, expert manipulation has zero detrimental effect. And I think as your you said, Angela is it's not a question of whether it has any detrimental effect. It's a question of what other people will infer about it.

Angela Jackson

So not a paper I've read so I'm going to be cautious about calming hinting on something that I haven't actually read. But if you take the majority of this, firstly, there are congenital spondylolysis. We see those particularly associated with spinal bifida occulta. There are certain population groups, including Eskimos, where there's high preponderance of these and familial histories. So I have one family with all three kids and the mother. So firstly, they're not all acquired. So we have to be clear as to what that paper was observing, you can get asymptomatic spondylolysis. And if you take somebody like the cricketer, Jimmy Anderson, he's had a series of spondylolysis throughout his career, but it hasn't stopped him from performing at the top of the game. But more commonly, in the types of sports that I'm involved in. I work with a lot of football academies that work with cricket academies. And the literature that I've read from the Cricket World would primarily suggest to us that you should create the optimal environment for bony union. To me, that is our responsibility. And the only way we're going to do that is to withdraw them from extension related activities for a period of anything between four and six months. So for me, my ethics would sit with I want to give this kid the best possible chance of bony union. And the only way I feel I can do that is to do some activity modification. We don't know the long term implications of giving them a pseudo arthrosis of fibrotic healing, it may or may not lead to lumbar spine instability as an adult.

Steven Bruce

And frankly, regardless of any sort of professional conduct outcomes, I'd be terrified at telling somebody with a spunglo licence just carry on as normal, regardless of a paper about American footballers. Angelyn. So we've got time for which is a shame, because I do have quite a few other questions on my list here, and observations and so on. But thank you so much. It'd be lovely if we could get you in the studio sometime and maybe do a little bit more in depth about treatment protocols and examination protocols for adolescents. But it's been great listening to you today. Thank you.

Angela Jackson

Thank you for inviting me. I hope if anybody wants to reach out, they're welcome to send me a message at kids back number two kids back to sport.com. I

Steven Bruce

will make sure we share that in the email that goes out later. Thank you. Good. Thank you. I think that was a really, really helpful piece of CPD and I hope you found it useful yourself.

DRAFT TRANSCRIPT