

Knee Braces: Relieving Stress &

Deferring Surgery – Ref311

with Giles Leeming

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TRANSCRIPT

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Good afternoon. Welcome to Monday's lunchtime learning. Once upon a time we used to do a series here of what we called product reviews. Essentially, what we did what we hoped were impartial looks at various types of equipment. And I suppose today's show is a little bit like that. We're going to be looking at the Össur Unloader Brace. And the reason we're looking at this particular piece of kit is because it was recommended to me by an orthopod, who I've had a lot of time for. Chap has been on the show on numerous occasions, Ian McDermott, and you might have seen him on some of our shows. Now these braces, they're not cheap, but then neither is joint replacement surgery. What they do though, is they promise in some cases to help at least postpone that surgery, and I thought it'd be a good idea for us to learn a little bit more about them. My guest is Giles Leeming. He's from Össur. He's trained as a podiatrist, but he's now an orthotist with a lot of experience in this field. So Giles, welcome to you. Yeah, I mean, I'm fascinated to see this because people refer, don't they, in general, I think clinical to braces. But braces means a lot of things to a lot of different people. And sometimes they just mean a, you know, tubi grip or something like that, which does nothing to provide anything other than a bit of compression and proprioceptive support, I imagine. Yeah. What are we going to be looking at here?

Giles Leeming

Well, something a bit more involved. Something a bit more designed very specifically for the patient group. And you're quite right, braces vary from simple sleeve to something, again, more evolved and that sort of thing. So it's often a discussion point for us in terms of correct prescription, making sure you got the right thing, but also having something that's designed holistically to suit the patient group.

Steven Bruce

Holistically?

Giles Leeming

Yeah, well, it's important, if we're talking in the field of OA, for example, they may have OA in their knee, but there will be other associated issues with that, they may be more advanced in years, they may struggle with buckles and more complex things that we need to factor in from a design point of view and make sure that we've got something that really works for that person. Doesn't matter if we make the best biomechanical brace if the patient can't tolerate it or use it correctly. It doesn't really fulfil that need.

Steven Bruce

Well, I suppose, well, first of all, I mean, I'm turning to Össur, the company. We're going to be looking at one particular type of brace and unload a brace today, but I presume Össur does lots of other stuff as well.

Giles Leeming

Yeah, so our background is actually in prosthetics. So we were started by an amputee, Össur Christiansen and he was unsatisfied with his leg and he developed a silicone roll on socket, the Ice Ross or Icelandic Roll on Silicone Socket to solve his needs with his leg. And from there we then, we have things like the carbon fibre blades you see at the Paralympics, most of those are from Össur.

I had no idea.

Giles Leeming

Yeah. And people like Johnny Peacock, and Rich Whitehead are some of our athletes, for example.

Steven Bruce

What goes through my mind though, and we've got an example of the brace that we're looking at today. And when we're looking at a particular brace, which is presumably designed for a particular condition. You'll tell us more about that. I guess we're all concerned about, you know, what's the evidence for this, because you can design a sexy brace with straps and buckles and all sorts of stuff. But what people are going to be thinking, well, how much of it is necessary? What does the evidence tell us or how much of it is placebo or proprioception in much the same way as tubi grip?

Giles Leeming

Yeah, and it's important that there's a good research backing for these. Orthotics itself is a relatively small field. And it's important that we encourage research in this area. And we'll talk about a little bit later. But for the unloader, for example, there is the broadest of any of the other braces, there is the broadest sort of backing of research in that area, the most research has been done in this.

Steven Bruce

So maybe I should let you, I know you have some pictures and stuff like that. So maybe I should let you tell us about you know, what it deals with and how it works, then before we get into how you use it.

Giles Leeming

Yeah. So effectively, from a from a brace point of view, it's important to consider the modality itself, but it's a very sort of targeted methodology. You know, with more systemic things like pain relief, medication, and that sort of thing. You are, okay, you're aiming for pain relief from the OA, but it's a systemic thing. With this, it's affecting just the knee. It's extremely targeted for that area, also from mortality and morbidity concern, you know, it's very isolated in terms of that area. So they can be very useful in patients that perhaps have other considerations. So things that may preclude them from having surgery, for example. So it's good with co morbidities and that sort of thing. And also, it's really important that we consider it as a combined therapy. So a brace in isolation, you know, can be useful, but it's also really important that we consider it as a group with other conservative measures. So we have here, for example, injections, very much targeting the pain within the joint, medication, and then an unloading knee brace. With those we're really trying to target the discomfort, with the aim that potentially we can sort of break the antalgic side of things and they can get more from manual therapy, they can get more potential from diet and exercise if we're able to control the discomfort.

Steven Bruce

One of the concerns that people often have with any form of bracing is that, by applying a brace, you are reducing the work done by the muscles therefore, you're encouraging sarcopenia in a certain population or just muscle wastage. And that is counterintuitive. When we think of strength being a major factor in overcoming OA, well, not overcoming OA, overcoming the pain of OA.

Giles Leeming

So that basically, is from historic research, it was on a very different brace. So originally, you know, sort of in my early career, there was a study done that looked at ligament braces and their effect, very different style of brace, so the ones you might see on skiers, and the effects on quads and that sort of thing. But the reality is now when you've got something that's much more targeted, if you're able to break the pain, which often results in more wastage, it's anecdotal. But with a lot of patients, you do normally see that their muscle strength improves over time, it is an area that we'd like to do more research into. But if you're enabling someone to better participate in activities of daily living, in exercise, these sorts of things, it's reasonable to expect that they would sort of get associated changes with their musculature.

Steven Bruce

Yeah, it was interesting you mentioned skiing, because actually, we had a comment come in before we even started from Carol who says she has an unloader brace of her own and she thinks they're the bee's knees, because it means she can carry on skiing. So yeah, that's good. I don't know if it's an Össur brace, I presume there are other versions around.

Giles Leeming

There are different versions that exist. So they can work in very different ways. So certainly, historically, they tended to be more based on other braces rather than something designed from the ground up. And that's one of the key thing is really I talked a little bit about the fact that you have to consider the patient holistically. And if we've got a very rigid, very hard brace that traditionally you would associate with skiing, because of the high level of ligament control required, it's potentially not suited for day to day life for that patient group. They want something that will fit into the clothing that they can adjust and will be absolutely comfortable for normal day to day living rather than extreme high activities and long durations.

Steven Bruce

Am I right in thinking that with an unloader brace it's targeted at unicompartmental OA?

Giles Leeming

Yes. So it's specific for, we can go on to the indications, but it's specific for any unicompartmental condition that would benefit from unloading. So that includes meniscal indications, they're also used in different varieties of them, biomechanically very similar, can be used post microfracture treatment, for example, other cartilage-based issues like OATS procedures, MACI and ACI procedures. And it's basically where you need to consider the load going through that compartment. The main thing really is unicompartmental osteoarthritis, and certainly originally, we were thinking more about sort of lower levels, lower Kellgren-Lawrence levels, but they actually found that for all levels of osteoarthritis, they can be useful in affecting change.

Steven Bruce

I think statistically, the medial compartment of the knee is most commonly affected, I don't even know if there are ever any problems with the lateral compartment. Can you work both sides?

Giles Leeming

Yeah, we have lateral versions. They account for 20, 30% of the ones we sell. So effectively, most of them are medial conditions. But you can get lateral versions. And that's not uncommon if someone has, you know, a valgus knee position or that sort of thing. So it's a different version, but we have them.

Steven Bruce

A couple of comments before we move on, Karen says she's just getting over an ACL reconstruction, I hope that's going well, Karen, and she uses a DonJoy playmaker brace, which completely tightened her MCL. It's a comment, any observations from your part?

Giles Leeming

Yeah, so with those sorts of things, again, it's applying immediate lateral force to the knee, it works in a very different way. So with those, it's what's called a push based mechanism. So you're using the hinge to physically push on the knee itself. With an unloader, you're actually using what's called a pull mechanism. It's a very simple study by Rosinski. I can't remember what year it was. But they described the two methods. And basically, this relies on a pull mechanism. So if I can show you this here, rather than the hinge biomechanically sort of pushing and applying a rigid force to the knee, what we're actually doing is applying a counter force here and here with a large surface area, and then utilising the straps on the lateral side. So you'll see this later once we actually go and fit one. But effectively, you've got a very large surface area of providing that force. But it's also dynamic as well. So one of the benefits is, as you bend your knee as we're sat here now, you wouldn't necessarily want that unremitting force on your knee. But it just means that as you go into full extension and the articular surfaces that are affected by the osteoarthritis come in contact, you've got that force applied on your knee to reduce the load in that area.

Steven Bruce

It's not clear from what Karen says whether completely tightening the MCL is what she wanted or whether that was beneficial. So it'd be interesting to hear, Karen, if you want to come back to us on how well you're doing with that brace.

Giles Leeming

Yeah, it's interesting, some clinicians do use them effectively to stop that, you know that valgus force opening that medial compartment, it's not one of our indications, but effectively using it the opposite way around to load the medial compartment, to prevent the gapping associated with that ligament injury.

Steven Bruce

Yeah. Robin says that his brace is a CTI OTS from Össur, that makes sense to you, does it?

Giles Leeming

Yes.

Steven Bruce

He got it after lots of research and ultimately decided after being impressed. He won't remember this because it was years ago by the time and help that Giles offered me on the phone. So you're responsible

for Robin's brace, still going strong after years of wakeboarding. I'm not quite sure that's probably Robin, who is the cyclist I spoke to you about earlier on, who like you as a mountain biker.

Giles Leeming

Yeah, so that's, again, a very different brace. When I was talking about a ligament brace, we're wanting to promote structural integrity of the knee and preventing, you know, effectively tibial translation, which is a relatively sort of small movement from biomechanical points of view. So those need to be designed to be very rigid and very controlling. Whereas with something like this, we want something that's focused on providing that medial lateral force, being very, very lightweight. And it's not necessarily about rigid control of the knee. So the CTI is a great example of ligament brace, but those are more traditionally where OA braces came from. And in that lies the difference with something like this.

Steven Bruce

Okay. So you talked about indications earlier on, and I imagine that some of them might be fairly selfevident. But what are the indications that an unloader brace could be useful?

Giles Leeming

It's effectively anything where unicompartmental unloading is beneficial. So the primary one is mild to moderate OA. We then have degenerative meniscal indications which from a manual therapy point of view can be quite tricky to manage. We then have the other ones that I've gone through. So things like microfracture post, MACI, ACI and various cartilage based issues.

Steven Bruce

Any contraindications amongst that population?

Giles Leeming

Not necessarily. I mean, the things that we need to think about, standard orthotic considerations, so things like patients with neurological deficits, so sensory, neuropathic, sorry. So if they have a reduction in sensation, or if, for example, they have significant fluctuating oedema. It's not necessarily a contraindication. But it's important that those are addressed, and that you have sort of a heightened level of support for that patient. Just because they need to be aware that perhaps they need to wear it sooner, they may need to adjust it, as the day goes on, they may need to monitor the skin. So it's important to take those on a case by case basis.

Steven Bruce

So these are worn against the skin or over clothing?

Giles Leeming

So you can do both. Biomechanically, it would work exactly the same over clothing. The difficulty is, with having it over clothing, you know, you can see as I'm sat here, there are creases in my trousers, those sorts of things. Also, the potential for slippage, and so we designed lots of things into the brace to make sure it stays put. We don't want it sliding down. So we use silicone liners the same as the silicone used in the prosthetic sockets I was talking about earlier. But if you put them over clothing, you have the

potential for them to slide down a little bit more. So people do wear them over leggings and that sort of thing.

Steven Bruce

You'd struggle to fit them under those jeans.

Giles Leeming

For me, yes, potentially. But there are other clothing choices that you would wear, for example. So it does depend on the individual clothing, but we try to make them as lightweight and low profile as possible.

Steven Bruce

Okay, Karen has come back and said, yes, her brace helped with the MCL. But now I will need a brace she says for skiing post ACL surgery nine months ago. So very interested in what we're going to be talking about today. Yeah. Functionally, I presume someone would wear this obviously for normal day to day activities walking around. If they're cycling or in the gym or anything else like that. I presume this can still be worn over there and would perhaps be beneficial.

Giles Leeming

Absolutely. It's really individual in terms of saying when people should wear it. We have patients that get up in the morning, they immediately put their brace on and then when they go to bed, they take it off. More commonly, people wear it when they need it or when they're doing activities that would normally aggravate their knees. So perhaps when you're in and around the house and you're you're used to your surroundings and that sort of thing, you wouldn't necessarily need it all the time, but we have the real gamut of patients and OA specific, it's so individual in terms of when people have problems. I always say it should fit in with your lifestyle, and you should use it when you feel you need it. That said, the more you wear it, the more potential benefit you'll get.

Steven Bruce

Yeah, well, actually very timely comment there, because Rupert's just said he had a patient who used an unloader brace on his knee for some time, but it caused complications regarding venous return. And he's due to see a vascular surgeon soon. Do you have any comments about how much one should wear the brace? And obviously, you've just touched on that. But in this particular instance, if there is a problem with vascular return.

Giles Leeming

Yeah, I mean, it's important to consider just because with any brace of any type, there's going to be in effect, a circular effect that, you know, tightening of the straps that keeps it in place. So if there are significant vascular concerns, it's important that those are addressed beforehand, as much as possible. Whether that may be, I had a question this morning, believe it or not, that was just with regards to someone with poor venous return. And it might be appropriate to consider compression hosiery or that sort of thing and try and address that, before we then consider that, but for 90% of the population, you know, that's not a problem at all.

In practical terms, what do you expect to achieve with one of these? I talked about it deferring surgery beforehand. Obviously, you've talked about pain relief. But how long would you expect that to last? Well, how long might you put off surgery, or for people to go without surgery altogether? Because they've got one of these.

Giles Leeming

Yeah it does depend on the individual. There was a study done, just clicking through to that one, but looking at existing patients that were on the waiting list for surgery, and they actually found that this was done in Bridgend by Paul Lee, now, Professor Paul Lee, and he was looking at 63 patients. And they effectively did EQ-5D data. So it allows them to do a quality analysis. And they found that it was cost effective in these patients after a period of four months, and they were actually able to delay surgery, and felt it was both an effective and cost-effective way of delaying surgery in these patients. The mean wearing time for that was 26 months, so they do wear them for significant periods of time.

Steven Bruce

In just a second, we're gonna get on to actually fitting the brace. But dare I ask what is the cost of one of these things? And what's the route to getting one for a clinician who's got a patient they think might benefit?

Giles Leeming

Yeah, so there's various different routes, our biggest customer is the NHS. So these are available through the NHS. And that's the bulk of our work, I would say. The other thing that's interesting with it is certainly private health care and these sorts things, as an orthotist, often, or other allied health professions, private health insurance companies won't necessarily cover anything other than the clinical time. But this is actually the only OA brace that's fully funded by Access, they will completely cover the use and prescription of the brace. So it's unusual in that in that way.

Steven Bruce

So if I, let's say I've got a patient who I think would benefit from this, my best option would be to say, to write to his GP and say this person has got what seems like unicompartmental OA, maybe I've got imagery to prove that, I think he would benefit from this brace. Are there NICE guidelines which relate to this that we can refer to?

Giles Leeming

So, yeah, there is NICE guidelines in regard to bracing in general, I'll skip back through some of the slides. But effectively, with those, NICE support the use of bracing in a OA where there is associated joint instability, where there's abnormal biomechanical loading. And that really is the important part, just because historically the mainstay of treatment for patients with OA is weight loss, potentially, if appropriate, patient advice and painkillers. And the difficulty with that is you're very much treating the symptom, you're not necessarily treating the cause of the biomechanical problem. So through using something like this, if we consider that in loading terms, there was a study that found that this, we're able to get about 15% load reduction in that compartment. It doesn't sound like a lot, but if you equate that to

15% load reduction from a body mass point of view, that's significant and that's a big commitment from the patient.

Steven Bruce

So would the GP be able to recommend or refer one or does the patient have to go to a consultant to get that?

Giles Leeming

So it varies and certainly historically, the route through to getting braces like this was always sort of through the orthopaedic surgeon. They would then be sent through to either an MSK service or potentially orthotics, it's much more broad now. So there are, for example, first contact practitioners associated with GP surgeries, for example. And they can actually refer on to these types of services. And it's quite varied in terms of who fits and who uses these braces. So orthotists, physiotherapists, there's some plaster techs in some hospitals that actually are fitting them. OTs, for example. So it really does vary in terms of where you can access these.

Steven Bruce

What's the waiting time at the moment for a patient to get from making it known to a GP, that they think that one of these might be good to getting to the point where they're prescribed on?

Giles Leeming

It depends where you are. So yeah, it can change. I mean, obviously, if you're doing it privately, it's significantly quicker, but a lot of trusts are using unloader braces. And the thing is, with studies like the one done by Professor Lee, it's basically showing it is a cost-effective way of doing it. And a lot of surgeons are perhaps limited in what surgery they can do at the moment. So they need something that will actually manage these patients while they're waiting. And for a lot of people, it does turn into the definitive treatment for the time being.

Steven Bruce

Rather than spending too much time sitting here, let's go across and fit one of these to Jack, our regular model on the show. So you can show us how difficult or easy it is to do that. And we can see the thing in action. Right, so the sad thing about this is that Jack doesn't have a knee problem, which is good for you, Jack. But we're gonna fit the knee brace to him anyway.

Giles Leeming

Okay, so in this case, we were already sized up Jack's, I already knew his measurements before we started.

Steven Bruce

What would you measure?

Giles Leeming

So what we would do is we'd take a circumferential measures, how can I get you to stand up if that's okay. So just sort of looking down here, all we're doing is taking a depth there 15 centimetres,

15 centimetres from the bottom of the patella?

Giles Leeming

Mid patella, yeah. And this thing gives us a size. So in this case, it's about 36, which would put him in the region of a medium brace. From a sizing point of view, we've just changed this recently. So the extra small to medium is one size, and then there's a large to double XL. The other thing that's very important to know is which is the effective compartment. So in this case, okay, Jack doesn't have medial compartment OA, but it's a right leg on the medial side. So we have that brace but effectively 80%, 70 to 80% tend to be medial. If it's lateral, you just order a lateral version. And the brace is effectively identical. It's just that the shaping is very different on the lateral sides. So yeah, so we've sized him up accordingly, we would then order the brace, we've recently changed all our packaging and that sort of thing. It's all much more green and recyclable. And effectively, this is the way the brace arrives. And one of the things that we use, I talked about them being designed holistically, but we're trying to avoid D-rings and things like that, where they're having to thread straps through, that sort of thing. So in terms of application, it just has a simple colour coded system. So we have blue here, and blue here, they click that in, and then fold that over, exactly the same at the top. So what I often would say to patients is kind of ignore the fitting side of things that I'm doing initially, because effectively, it's two clips for them, and they're then good to go. So have a seat again, if that's okay, so I'm just going to straighten your leg. And if you just slide forward a little bit, because what we need to do is actually get this in position here. So, the important thing is making sure that we've got this position correctly, everyone always wants to fit braces a little bit low. So this logo here, we're lining up with the top of the patella. The hinge here we want at the midline, here, like that. And what we're actually doing is we're bringing this strap around, fastening blue on blue. And again, this stage is really what the clinician is doing, you don't really need to, the patient won't do any of these stages. And then tightening the strap and you can trim all these if you need to. So that goes up and over the calf. And then, we're then fastening the top section. So again, yellow on yellow. Now this is guite loose at the moment. Bear with me. And we're just going to fasten this thigh strap here. Now we have this ability to tighten this at the front...

Steven Bruce

Even got this wonderful little BOA device which I got in my cycling shoes, they're fantastic.

Giles Leeming

Exactly. Those are really good for micro adjustments. And what they're there for is for the patient to adjust themselves. So say for example, your knee was particularly uncomfortable doing a specific activity, you can actually increase or decrease these dependent on your pain relief needs. So can I get you to stand up, and what I'm actually going to do is just set up these diagonal straps. So these are called dynamic force straps. And the dynamic bit comes in as a result of the fact that when you actually flex your knee, you don't actually necessarily need that same level of unloading, just going to go a touch tighter on there, don't necessarily need that same level of unloading. So you see, when Jack actually bends his knee, these will actually go loose to some extent. And that's in line with where the area affected by the osteoarthritis is because it's normally the last sort of 10 to 15 degrees to full extension. So all I'm doing here, obviously, normally, I would trim these after I've initially fitted this, but we've got it in position, have a seat again. And then I would just tighten these up. Now the ideal position, just to have it in the central

section used to be five. And I always try and stop myself doing that. But we're tightening these up. And then if you just straighten your leg for me, you should be able to feel a little bit of force there. And we can just check the strap tension. So describing strap tension is quite tricky. The other thing that we would consider is the patient's skin condition. So in this case, really good skin condition. And we wouldn't have any concerns with having these nice and tight.

Steven Bruce

So when you said the central section, this should be five, what are you referring to?

Giles Leeming

Just this here, so this sort of circular window, that's the midpoint. So I'm just setting this up. So just bend your knee a little bit, because at the moment, I'm using these smart dosing dials, just to set it up. But when the patient leaves, we will always adjust it so that their correct level of tightness is at the midline. So they can go tighter if they need to. They can slack it off if they need to. And really reducing the tension is more to do with the volume changes, if there's any swelling or whatever, they've got the capacity to adjust that. So yeah, straighten it again for me.

Steven Bruce

Carol's actually asked whether you do replacement straps, because she said they tend to stretch.

Giles Leeming

They can do a little bit over time, the thing to bear in mind is when they're in a box, there's no stress on them. So we would always recommend a review, within sort of four to six weeks, just to readjust it, it also means you can solve some of the little problems that come along. So yeah, straps are completely replaceable with the manufacturers. So we can get hold of basically all the parts for it. The only things we can't sort of replace on them is if something integral to the hinge or the frame is broken, but all the straps can be replaced, all the pads can be replaced, the buckles, most parts can actually be replaced if you need to.

Steven Bruce

So once you fitted this, there's not much for the patient to think about.

Giles Leeming

No, no.

Steven Bruce

How much training is it required to fit them? Would you expect us, let's say if one of our audience, osteopaths or chriopractors that aren't gonna be able to do this? Is this a sort of an hour's training in the morning? Or is it a lengthy course?

Giles Leeming

No. So we would often sort of come and support you for the first couple if that's something you wanted. We do have lots of resources, whether it's on YouTube, we even have elearning courses and that sort of thing.

Curious, you were saying to me before, is actually, you've got the same cameras we've got, you're using very similar systems to us but for Össur's own Education Academy. I haven't been there. But I'd recommend people take a look at it, because you've got lots of stuff there, which would be useful as a CPD product for people, wouldn't it.

Giles Leeming

And that was from our point of view, that was a reaction to the fact that fitting them, if I just have shown it on a PowerPoint or whatever, it doesn't necessarily get across the technical aspects. Obviously, here you have the ability to show different camera views and that sort of thing. And it was something that we developed as well. So effectively, if I can get you to stand up for me, it's important to check the hinge position, but just check the tension here either side, I'm gonna go a touch tighter on this one.

Steven Bruce

So with the hinge, we're looking at the logo, there's probably on the joint line, now, isn't it?

Giles Leeming

So basically, you do find that it will just kind of settle into position. So you know, we need to make sure that we've got it correct there, the front of the hinge should be roughly at the midline. But you'll feel, as you can see here, as you go straight, Jack, you can probably feel a bit of pressure on this side and effectively, it's a three-point pressure system that it's applying, you know a lot of patients with medial compartment issues, effectively, the load line is moving medially in sort of a varus style position. So what this is in effect doing is applying a valgus force to a varus leg to reduce the load in that medial compartment. So these two straps are pushing that way. These two large surface area shells are effectively pushing laterally. So it means you've got this dynamic force, so if you sit down again, Jack, you can see that as we flex, it reduces some of the tension on there, you can probably feel that.

Steven Bruce

Is it comfortable?

Jack

Yeah, very comfortable.

Giles Leeming

Yeah. And we also use things like, for example that I mentioned before, but silicone on the bottom section to make sure it anchors and stays in position.

Steven Bruce

What about just behind your knee because it looks there's sort of straps being gripped behind the knee there.

Giles Leeming

Stand up and then spin around. So I just need to make a little tiny adjustment there. But we've got a popliteal pad here, just so that it means that you've got plenty of padding in there. And you can move that

around if you need to. But as I mentioned, it's dynamic. So it's not unremitting in terms of that force. But generally, people find them pretty comfortable.

Steven Bruce

Should we get Jack to walk up and down. We're not gonna see any difference in Jack.

Steven Bruce

Yeah, cause he isn't symptomatic.

Steven Bruce

Just have a little walk towards the camera over that way. And when you're walking Jack, does that feel perfectly normal? Perfectly fine?

Jack

It does feel normal, you can feel that there's something there. But after a while I won't feel like it's there that makes sense.

Giles Leeming

Keep walking, if that's okay. So effectively, if you notice, certainly when he's walking backwards, you can see that there's a change in the tension of those. But that's just to do with the fact that the area affected by the osteoarthritis really is in that last sort of 10 to 15 degrees.

Steven Bruce

It is actually I mean, there is substance to it, but it's a lot less bulky than some knee braces and less bulky than I was expecting.

Giles Leeming

Yeah, and you know, this weighs just over 300 grammes. It's not particularly heavy, it will fit underneath clothing. And the thing is, people think brace they think, perhaps a bit Forrest Gump-ish or that type of thing. And the reality is very different now, we're using a lot of technology, things like plastics and carbon fibre and silicone and these types of things.

Steven Bruce

So how does it feel behind the knee?

Jack

It feels like I'm very supported there, and it does actually feel very comfortable as well when it's on.

Giles Leeming

And the other thing to show you perhaps is, is adjusting these I mean, you're not symptomatic. So it's tricky. But if I go just a few clicks up, which again, would normally best practice to do this with the leg inflection, but it actually makes, you'll feel it's probably quite a bit stronger now. But it means that patients can actually control their own pain level. So if they are doing some that's particularly uncomfortable for

them, normally, whether it's descending a slope, upstairs, these types of things, through their clothing, they can just tighten those up and increase the amount of force the brace is applying.

Steven Bruce

So we've now buggered up his lateral compartment.

Giles Leeming

I always say that the load has to go through the knee somewhere. And what it's about is reducing the load in the area that's worst affected. A surgeon, if they're going to be replacing the knee, most of them will replace the whole joint. So you know, it's important to keep that person active and allow them to do their activities as normal daily living.

Steven Bruce

Brilliant, Jack, thank you. Let's get back over to our seat for a second, a lot of more questions have come in. The first one is, I'm taking these in order on my chart here rather than relevant to what we were just discussing. Robin says what brace would you suggest for a medial meniscus tear, no OA.

Giles Leeming

So I mentioned before, probably the slide on the indications if it's in here somewhere. So there we go. So it can be used for degenerative meniscal injury. So there is another version that's designed for cartilage based issues. So something called the rebound cartilage and the difference with that one is, it actually applies the unloading into higher degrees of flexion. So yeah, the indications are the same, but it has a slightly different feature to it.

Steven Bruce

This says Unloader one, how many Unloaders are there?

Giles Leeming

So we have the Unloader 1x, which is this one that we showed you today, we have the Unloader 1 smart dosing, so the older version of this, we also have a couple of braces that use very similar biomechanics. So things like the rebound cartilage is designed for cartilage or more trauma acquired injuries. We then have other ones that are for sort of lower levels of unloading on different patient groups. So things like some of the OA braces can be used for things that, there's one called the OA Ease, which is a sleeve based, lower levels of unloading but perhaps more suited for patients that are just beginning on that journey into osteoarthritis.

Steven Bruce

Okay. Susie asks about inflammatory arthritis because everything we've mentioned so far has been OA of course and unicompartmental at that. She says that, from your comments about oedema it sounds as though inflammatory arthritis might be more complicated.

Giles Leeming

It can be, I mean, with inflammatory conditions, it's affecting the whole joint. But what's important to consider is, if you think that there is a biomechanical component to it, and if the pain is very much located

in one of the compartments. The good thing with this type of conservative intervention, is you're actually not going to lose anything by trying. So you know, with these patients, it may be something you can consider fitting, but it's important, you know, with an inflammatory condition, it is affecting the whole compartment. But it could be that the pain is located on one side. A good example with this would be, not necessarily from the inflammatory point of view, but these can be used as a prescription tool for things like high tibial osteotomy. So a lot of surgeons will actually fit those to see if biomechanical unloading that compartment is effective, before they then go into the cost and the complexities of a high tibial osteotomy for example.

Steven Bruce

Did you tell me what the cost of these is?

Giles Leeming

So the cost to clinicians is about in the region of 430 pounds plus VAT. Obviously, there's a different price for members of the public. The fitting, though, so. So yeah.

Steven Bruce

And getting back to how a patient might get one of these. I mean, if a private patient with an osteopath or a chiropractor came in, and it was decided this would be good. They can come straight, you get them through you.

Giles Leeming

Yep.

Steven Bruce

They can add whatever markup they want to that price for the patients, or do you say no, it's got to be this so that we don't end up with differentiation across the market?

Giles Leeming

I briefly showed a map earlier, just showing some of the clinics that we have links with in terms of if someone phones up and says I would like an unloader, then that would be the group that we would send them to. So there are prices associated with that. So we kind of, you know, I think it's 650 pounds fitted. So we kind of recommend it, but you're quite right. It's something that can be set by the individual clinician.

Steven Bruce

Kim says she's got a client who plays hockey, can you wear these while you're playing sport, in particular hockey?

Giles Leeming

Yeah, Ithey're used in activity you know, there are lots of people that wear them for all sorts of different activities. One of the thing that's important to consider, we get asked about swimming, for example, all the time, but really, it's not of use in that, even though the brace is completely waterproof, you can even put it in the washing machine. But it's about considering, it's less of an issue with these, but the CTI was mentioned earlier, couldn't fully cope with things like football and that sort of thing. But you may, if you

clashed knees with someone, the other person will come off considerably worse. So we don't recommend the unloader specifically used in anything significantly contact. But if you were to put some sports, they put sleeves over the top of them to cover them. And then for an activity level point of view, it's not a problem.

Steven Bruce

Okay. Two questions one about osteotomy. One about knee replacement. If the patient's still experiencing pain after that surgery, will these potentially help?

Giles Leeming

You mean after an arthroplasty?

Steven Bruce

Yes.

Giles Leeming

I would say probably the main situation where they're used, and this is getting quite niche and quite unusual would be where the consultant feels that there is a loading related issue to that pain and loading related component to it. Some people do, but I would say that's quite unusual.

Steven Bruce

Right. Okay. Excuse me. There's a couple of questions here, which we have discussed a little bit in the past, but maybe we need to elaborate a little. Gabrielle says can they be used for other reasons than simply delaying surgery?

Giles Leeming

Yeah, I mean, there's lots of different situations where you would use these. People are using them to maintain their activity levels, you know, if you are wanting to be active, but actually the pain of activity is causing you problems and it's not allowing you to walk the dog, cycle or whatever, these types of things, people are using them for that and increasingly we're seeing quite a younger population that are wanting to keep up with these activities. And surgery is, you know, very effective and a great way to go but it's about considering all of the conservative measures before you then go to the much more definitive surgery side of things.

Steven Bruce

And still some concern about irritation of one sort or another, Robin says, do you ever have any issues with the straps irritating the common perineal nerve? And Bridget says, would that be a fitment issue? Are there any issues with skin abrasion or rubbing.

Giles Leeming

So, there are a few things in that. So it's really important that we spend a bit of time with the patient to describe building up the time you wear it slowly. So it's kind of like a new pair of walking boots or whatever, you don't immediately put them on, or hopefully you don't immediately put them on and then go for a big long hike, we provide advice about building up the time you wear it, and also building up the activity level

for how long you wear it. So that is a real part of getting both used to it biomechanically, but also your skin getting used to the sensation and the effect of the straps on there. We also have other things as well as alternative liners, we have different paddings, different materials, these sorts of things. We even have things like there's a dexterity kit, if someone has poor hand function, they may struggle with the BOAs, for example. So there is a there is a version that makes it much easier.

Steven Bruce

So in terms of me as a clinician, prescribing one of these to one of my patients, if some of these things happen, do I just call you up and you say, ah, I might have just the thing to fix that and you come and help me out or...?

Giles Leeming

It's a combination. So we do have salespeople across the country who are very experienced with these things.

Steven Bruce

But also will help out basically if these things happen.

Giles Leeming

Yeah, absolutely. It's in our interest for you to get the best, you and the patient, to get the best outcome out of there. So, you know, by all means, contact us. You know, I think it was Robin earlier mentioned that I'd spoken to him in the past. So yeah, we're happy to support in that way. And obviously, we're quite unusual from a bracing point of view in that we have clinician support for these types of things. So certainly, my role and my role historically, has been to support clinicians such as yourself.

Steven Bruce

Speaking of Robin, he says, this feels like a silly question, but is the measurement the same for all knee braces.

Giles Leeming

No. So it depends on what it is. We would love to standardise it. But the reality is that a brace like an unloader there's quite a large fitting window. So the sizing isn't as pivotal as it would be in the CTI, just because that one relies on a bony measure across the knee. So it would be great if we had one measurement that meant you could have this for all of them. Unfortunately, it's a case of remembering.

Steven Bruce

Kim's come back in about her hockey player and says that the hockey player has got a medial compartment problem and looking at high tibial osteotomy. Personally, it sounds from what you said is there an ideal case because this might show that the osteotomy might work. But it also might help them during their sport in the meantime.

Giles Leeming

Exactly. It's a little bit about prehab. First of all, we're proving the concept. So with a high tibial osteotomy, they will add or remove a wedge from the tibia in order to realign the leg effectively and change the load

line. And the brace is doing a similar thing, effectively applying a valgus force to a varus leg or opposite if you have a valgus leg. But it's about seeing what effects changing the load line, where the load is being borne through the leg. So hopefully, you can see and predict how well that's going to work before you go for that.

Steven Bruce

Just a few seconds. We've got a couple of other questions. Any good for a 90 plus patient, 90-year-old plus patient who's got medial OA, but won't get surgery because of her age, sounds great to me.

Giles Leeming

Yeah, I mean, it's important to consider various things. So skin condition, these types of things, whether they have the dexterity or perhaps the cognition. So some of these, I mentioned very briefly the OA Ease, but a sleeve based design that is very, very, very simple to put on. So that might be something to consider. But we have patients who are very elderly that are wearing these and get on very well with them.

Steven Bruce

Giles, we ran out of time. I've got four or five questions that have just come in. I don't have time to ask them on air, but I will get answers from Giles before he leaves today. And I'll send them out with my follow up email which I will also include a handout of Giles's slides, contact details for Össur and so on in case you're interested in using these things. Yeah, but as far as I can see, this is a great alternative string to your clinical bow or additional string to your clinical bow. Looking ahead now, don't miss Wednesday evening show. I'm talking to Eyal Lederman about functional exercise and how you use it to best effect. Everything Eyal does is about evidence. He's absolutely all over the stuff when it comes to rehab, and he'll be demonstrating how you get the best out of functional exercises, as well as contrasting that with normal strength and conditioning training and so on. So that's two days' time, 730 to nine o'clock in the evening, next Wednesday the 12th, we've got Another lunchtime show a case-based discussion. And I think this one is likely to be looking at some aspects of visceral treatment. We'll see. Tuesday, the 18th, third Tuesday of the month, we've got our evening show again, that one is all about shockwave therapy, we've got the latest machines in the studio. And we'll be getting a demonstration of how to use them as well as all the evidence and so on behind them. Courses, hands on first aid training that's coming up Saturday, the 29th of July. That'll be here in the studio. It's perfect for practitioners as well as clinical staff. It's aimed at the clinic. It means you're covered in terms of the law and it means you will be capable of dealing with any first aid problem that comes through your doors. Trust me, it's the best first aid course around by a long way and you get monthly video reminders of everything that's covered. So there's no risk of skill, well limited risk of skill fade in that subject. Onto September, Nikki Scott, Saturday the 16th in the studio teaching her hypopressive training, primarily aimed at fixing leaky ladies. But as we discussed on the show a couple of weeks ago, it has far more wide-reaching effects than that. It really is very, very good for postpartum ladies, it's far better than conventional pelvic floor training, which is all they ever get as conventional advice. Looking further ahead 8th to the 10th of October, the dry needling course with Bob Gerwin and Simeon Neil Asher again, this has got to be the best dry needling course around it. It truly is phenomenal. Everybody who's been on it says that they're using it, they're using it to amazing effects. So think about that one. And Laurie Hartman running his final, his last ever manipulation masterclass here on APM on the weekend of seventh to eighth of October. I don't think that one's up on the website yet but keep your eyes peeled. If you're really interested in that one, send us an email, we'll

get you on the list straightaway. But Laurie is an absolute legend, and the course is absolutely phenomenal as I'm sure you know. That's it for today. Hopefully you'll be joining me on Wednesday in the evening for the show with Eyal Lederman, but bye for now.