Academy of PHYSICAL MEDICINE

Transcript

384R- Rehabilitation After Major Knee Surgery with Professor David Barrett

Steven Bruce

Hello and good evening. Welcome to this week's second broadcast. Now you know that our overall aim here at the academy is to make your life as easy as possible, and of course, a large part of that is through the provision of wide ranging CPD. We try to cover all the requirements set out by our governing bodies. A lot of that's going to be general relevance, you know, because we want to make sure that you're well prepared for whatever comes through the door next. But we also try to make sure that we deliver as much as we can that is of direct clinical relevance. And tonight's one of those shows, we're going to be looking at the knee, and I have one of the UK's top orthopedic consultants to provide us with details of the latest developments in knee surgery and his thoughts on how this will influence your approach to subsequent rehab. I've also asked him to run through his own assessment procedure on a real patient, someone he's had, I think, 30 seconds to meet so far. So you'll be able to compare and contrast your own approach with his. And interestingly, tonight's patient actually had knee replacement only eight weeks ago, but has a second dodgy knee waiting to go under the knife. So we get to look at the pre and post op approaches in the same patient double whammy. My guest is David Barrett, who is a professor of biomechanical engineering, which means he isn't just involved in the sawing and drilling and hammering of orthopedic surgery. He's also a leading figure in the design of knee prosthesis. He's lead consultant at Southampton University Hospital. His main operative practice is in London. Professor Barrett, good evening. How lovely are you to come along.

David Barrett

It's my pleasure.

Steven Bruce

I'm glad you made it in time, just in time the taxi elevator. Cock up this evening. I'm intrigued by that little badge on your lapel there. What's that all about? So

David Barrett

that's that's something I left in since our last ball that you like it is President of the European knee society. So I've just finished being President of the European knee society, which is, just as it suggests, is a wonderful bunch of European guys who are interested in purely knee surgery. And it's a great group to be part of. It's very important to look outside our own experiences and purely for surgeons. So purely for surgeons, purely for knee surgeons, actually. So it's quite a small group, but it's people who publish, do research and operate, and so it's a great group to belong to.

Steven Bruce

Yeah, we've had a few knee surgeons on the show in the past, and I think we had sort of differing opinions on how useful it is to specialize in just that one joint. I mean, to me, it seems fairly if I want my knee replaced, as I will fairly soon, I want someone who knows everything there is to know about the knee. But there are those who'd say, well, it's useful to spread your your net a bit wider. I

David Barrett

so I'm what. Of those guys. So I've done nothing but knee surgery. It makes me an awful dinner party guest because I can only talk about one thing, but I think that for me, the knees, if you like, the Ferrari of all joints. Ferraris are great when they're working, but they're useless when something goes wrong with them and and they're complex joints, one of the most complex joints of the body, as as as your viewers will know if they're rehabbing the shoulder more actually, to the shoulder is probably the only other one. Okay. They're both complex joints. They move in multi planar ways, whereas the other hip joint, if you like ankle, relatively simple. Don't say that to the ankle guys, okay, but, but the hip and probably the shoulder, as though the knee and probably the shoulder are the most difficult joints for us. Well,

Steven Bruce

I never realized that all the other surgeons take the mickey out of orthopedics, all the other specializations take the mic out of orthopedics for being the sort of the brute force and ignorance profession. And the same thing happens within orthopedics. Yeah,

David Barrett

no, absolutely, honestly, we hate each other, so it's fine. So I'm sure someone's hating me at the moment.

Steven Bruce

I'm surprised you're putting up with a mirror osteopath taking the mickey out of someone with your expertise, but your expertise and biomechanical biomedical engineering, tell us about that, because that sounds fascinating.

David Barrett

There's a natural there's an actual movement from being an orthopedic surgeon to being an engineer. So actually, my chair, my professorship, is not in medicine, it's in engineering. And so so much of orthopedics is engineering. And to a certain extent, that characterism of, you know, the orthopedic guy hitting something with a hammer, it is a little bit like that. I have to say that. But as solutions are engineering solutions, rather than biological ones. And so there is a sort of a crossover between an orthopedic surgeon and and an engineer. And most of, most of the solutions I work with are engineered solutions, right?

Steven Bruce

So is there a Barrett prosthesis out there somewhere?

David Barrett

There's bits of me in that? Yes. So we, and that's the other thing we we design as teams now, and there used to be surgeon designers where they would they would generate. There used to be a Copeland shoulder, and obviously that was named after Copen. Surgeon ready. And, no, it's much safer if we design in teams, because you rarely make errors if everyone's looking at what you're doing.

Steven Bruce

Well, yes, I can imagine what specifically has been going on in the design of prostheses in the last however long you've been involved

David Barrett

with over 20 years, although, obviously I started when I was very young, but I just get it the knee surgery, knee replacement has been a great pain relieving operation since the 1970s and I think what's refocused us, and I think what you'll see and what the views here will will know, is that we're changing quite a lot in our demands for knee surgery. So in the 70s and 80s, we were quite grateful to be out of pain and be able to sleep at night and walk a little bit. I think our patients now are asking a lot more, and the drive for design in knee surgery is functionality. How can we make their artificial knees more functional? How can we make the patients better in terms of their activity?

Steven Bruce

What about durability? Because patients are having knees replaced earlier, I think, now, than maybe years ago. Because instead of just replacing it, because you couldn't stand the pain any longer, people will be having their knees replaced so they can enjoy better function. And yet, we've still got, what, 10 or 15 years life.

David Barrett

So it's actually where there's a double whammy here, you're absolutely right, and people are told to wait as long as possible for their knee replacement because, and the background story was that, because we wanted the knee replacement to last longer than they would, and if you could, if you tough it out to 75 and you had 15 years of your knee replacement, chances are that would be the only operation you would need. I think, unfortunately, that's not going to work anymore, because the double whammy is that, not only are our patients getting younger, in that, they won't tolerate waiting until they're 75 these guys are 55 and they're in pain, so waiting 20 years for a knee replacement is not what they're going to do. So you're absolutely right. We're asking our implants that last longer. The 55 year old is a golfer. He likes walking. He's got dogs. He wants to carry on. So they're much more active than a 75 year old. So for instance, a 55 year old will take six times as many steps per year than a 75 year old. They'll go upstairs much more often. So we're looking at the twin challenge of making the implants last longer, but also those that's a higher level of activity over a longer period of time.

Steven Bruce

What is it that's giving up in a knee replacement? Because when I had my knee replaced something like 89 years ago, I was always terrified of going walking or running on it. Don't go running on it, because I just thought that impact is going to affect the joint. But actually, is it the plastic bits that give up first? Or

David Barrett

I think we've got, we've got two issues with knees, and people can pick this up in their clinics when they see the patients. The immediate problem is infection, and that hasn't really changed. We're looking at about one to 2% of patients, unfortunately, will get an infection. It's a nightmare for every orthopedic surgeon, because you've got an implant, a foreign body deep inside skeleton where it doesn't have a great immune defense, and so if we can spot an infection earlier, and and this is sometimes where very grateful to the Osteoporosis chiropractors and the physios, because they're seeing the patient in the first two or three weeks after surgery, if that wound is hot and swollen, if there's a discharge from the wound, the earlier we get that patient back, the more successful we might be able to abort that infection, but the infection gets deep into the knee, and we have to take the whole thing out and start again, and that's a disaster. So that still is the major risk of knee surgery. And then as time goes on, what we begin to see is a polyethylene wear. So that's right, that's the plastic liner that we're putting in. We rarely see metal wear, but it's polyethylene wear, and we're probably looking at 15 to 20 years now from the polyethylene.

Steven Bruce

And when you come to revise that, do you have to revise the whole thing, or can you just revise the polyethylene bit? So

David Barrett

that's that, and that's a lot of our new designs now, is that we're making them much more modular. So the the dream, if you like, is to have someone have a lot of the active life on a knee, or a partial knee, and then at 1215, years, develops and swelling, realize they've got polyethylene wear, and just have the bearing changed. So right now, most of our modern knees, you can exchange the bearings, and certainly all of our partial knees can change the bearings. Right? How modern

Steven Bruce

those needs have to be, how modern those needs have to

David Barrett

be. So you, I think probably in the last five or 5678, years, you will probably have had an exchange Berry and and that's that's really nice, because it means that we connect, we have that opportunity of changing the old and East didn't. And of course, then the whole thing needed to be changed.

Steven Bruce

Okay, well, I'll find out, no doubt in due course, probably not before I read the other one replaced it. So what about the demographic? The patients are changing. They're younger. You said. So,

David Barrett

so this is what we're so this is what we're seeing. Is that people are we're seeing it, but actually people are predicting it even more. And so we actually do have that issue with the younger patient, the more active patient. There are some interesting figures we can look at, if you like, if we perhaps could show that slide that we were looking at and perhaps just pop it up. And as we're talking about it, patients have changed and and certainly that was the, that was the old 1970s thing we were talking about. The viewers would have seen that. So hinge knee, if it bent to 90, we were grateful. If the patients went upstairs, we were pleased, and if they didn't have pain, we said, well, you're very lucky. Okay. And so we wanted to, we wanted to change, and this is the driver between, or rather behind what we're doing okay? And your viewers will have seen these patients. They're younger, they're certainly a lot better educated, and they have much higher expectations. And you were talking about running, and now some of the data we've got now, particularly for partial knees, means you can actually run on your knees. So we, I've last London marathon, I had two patients send me pictures of them crossing the finishing line with their partial

Steven Bruce

and will that have any long term effect on the wear and tear we

David Barrett

we've we've looked at ours that are now 10 years old, that were 10 years we've done 10 years ago, and we're not seeing increased wear. And so right now, we're saying that running is probably okay. So that's that's interesting. That may not be true for total knees. Partial knees still have the cruciates. They're still a partial resurfacing, but people are going back to golf, skiing, horse riding, dancing and running. So in many ways, their expectations are higher, and frankly, we didn't realize they were running. They we told them not to run, and they were running anyway. And so that's why we looked at those guys, because they've been doing it for 10

Steven Bruce

years. Yeah, and I suppose there's not a huge amount of data, then to say exactly what the impact, literally, no pun intended. He's going to be there.

David Barrett

Bucha, well, that's one we had to look back 10 years, because we want to know what the effect was. 10 years of running was the so we actually saw that there were no higher rates of revision in that experimental group after 10 years of running. But you said these were partial replacements. These are partial replacements. So that's why I say we're simply saying that no for partials. We probably can't say it for totals yet, but we can certainly say it for partials, right?

Steven Bruce

Okay, so this is all good news, I guess that we've got better knee replacements, but we're starting earlier, unfortunately. So that's right, what's the aim that you want to get, that you want to get the knee replacement in so they can get it revised before they're 90? Well, this,

David Barrett

and then this, you have to talk about a sort of, I feel like a practice, because if you, if you think about it, this, this is, and so this is, this is an avalanche. We're seeing a little bit here. In red, you can see the increasing. So the black line along the bottom is hit replacement. So hit replacement is not going to increase that much, okay, it's pretty boring operation anyway. Whereas the the red is total knees and and they are going to increase. Your view is going to see a lot more of them. And interestingly, they're all going to be in this group. There you can see the big bar. This is the growth group. So it's 40 to 59 so those are young people. So now I regard them as quite young. Yes, me too. Whereas we're not going to see much more the old people, so we're operating on them already, but our growth is in that young age. Jason's

Steven Bruce

already sent a question in saying, why are people needing knee replacements earlier?

David Barrett

I think there's two things, and it's a really good question. I think people's activities are a lot higher than perhaps they used to be, in terms of sport and recreation, and we and we've encouraged that, I actually think that they're probably much more demanding and what what people put up with 50 years ago, we're not paired to put up with now. So I can remember, as a student, my boss telling people to give up golf. They won't get a new replacement unless they were so so much pain they couldn't work or couldn't sleep at night. Now unfortunately, not fortunately, unfortunately, but people now a lot more demanding, probably wouldn't take setback, so they're probably coming a bit earlier, but then that's where, if you like, we try and be a bit more flexible. The not everyone needs a knee replacement straight away. And this is, I think, the role of partial, partial replacements, or partial resurfacings, you'll present with. 80% of us will present with medial arthritis to start off with. And so, if you like, the dream would be to get someone who's 4550, resurface their medial side, keep them going for 15 to 20 years on that, and if they eventually get, you know, significant arthritic change in the rest of their knee, they're 6570 before they get there totally. And changing a partial to a totally is easy, really. So, so it's like almost planning your so if you have someone who's 45 you're going to be planning that care for the next 30 years, even though I won't be delivering that care. So it's just marvelous to set them up with something that's small partial and then allow them to move on to totally a bit later on. And do

Steven Bruce

those partial replacements inevitably lead on to

David Barrett

No they don't. And I think this is, this is a great opportunity to dispel a whole load of myths. One is that you can't run but you can on a partial The other is that some people call partial knees pre knees, right? They say, well, what's the point of doing a pre knee? Because in two years, your surgeon is going to take it out and give you a proper knee. And we would like to dispel a lot of that. We have great long term data now for partial knees that run to 15 and 20 years. So I think it would be great to take this opportunity to say a partially may be the only thing you need in your life. And unfortunately, they're not widely done in the UK, there's about 8% of people that will get a partial knee in the UK, and there should be about 40%

Steven Bruce

so tell me that. I mean, obviously you've been involved in designing prostheses, or if you start at one end of the spectrum, and you've got your cheap old plastic NHS replacement knee, and at the other end, you've got a completely bespoke knee replacement. Is everybody getting the same standard of service across the medical services in this country?

David Barrett

No. So that's just easy to say, no, okay. It's not necessary to do with the standard of the implants. The NHS is buying the same implants as the private practitioners. So the implants are probably uniform. I think what is different is the levels of training we're seeing in some places. And so partial needs is a little more of a technical operation, a little more difficult, little more fiddly, and quite a lot of surgeons mark, fiddly, the total knee replaced. Oh, totally is like chainsaw stuff. That's fine. It's just, it's dead simple. Partially you're putting it in, you're putting it in, in someone's working knee. So everything has to work. So the cruciates, the collaterals, are all still there. And so when you put in partial knee. You are more like making a watch, whereas if you're putting in a totally, you're chopping down a tree, because you're taking the whole draw and tow and putting in a new one, and you determine the whole mechanics. And so your viewers will see that when they're rehabbing a totally, because the mechanics are somewhat different to a partial knee,

Steven Bruce

right? And those mechanics different, necessarily in a bad way or just a different way.

David Barrett

It's just, I mean, so, so I'm not against totally hair so, but I'm going to say that they are much more mechanical. And so as part of the operation, you will lose your crusades. Okay, so the cruciate, the cruciate mechanism is gone. And so how we move, and how we're used to moving, our kinematics rely on those cruciates. And so when we substitute those crusades in a partial knee, we're, sorry, not a total knee, we're getting a very much a mechanical solution to a biological problem. And so it's just so much more mechanical. So things like proprioception, your the way you walk, your gut, your the ability to come downstairs, your stride length, all changes once you've had a total knee. If you have a partial knee, of course, you keep the cruciates. And so the actual mechanism of work is the same, and that means that you're still feeling you're the same when you're walking. So they are less affected by the surgery, and they're much more natural in what they do.

Steven Bruce

Okay, you've used some terminology, which I suspect we probably feel slightly embarrassed that we're not completely familiar with. And a number of people have said, can you just give us the difference between partial knee replacement, resurfacing, and, I suppose partial and total is fairly obvious, but you just what exactly is changing in the knee Sure.

David Barrett

So, gosh, look, we've got an eight. How interesting. Okay, so if I just so and the glad you mentioned that, because in many ways, the hip world has learned the difference between resurfacing and replacement. So obviously we know, as sportsmen have hip resurfacings Andy Murray, and that's a cup over the top of the head of the hip, and in many ways, token knee replacements are always token knee replacements, but partial knee surgery has become much more resurfacing and literally the most look, most common one we do is, is the medial side this side here. So literally, you will have

a shaped piece of cobalt chrome, usually over the front of this femur, the meniscus is replaced by a plastic meniscus, which is clipped into little base plate that sits on top of the tibia. So these are more commonly now called a partial resurfacing. A partial knee is the other way we're talking about them. But when we want to talk about our skinniest ones, we're talking about, that is our thinnest implants. We're talking about a resurfacing there, right.

Steven Bruce

Okay, and when you do a total replacement, how much of it are you? How much of the near you lopping off in order to stick in the services? So you

David Barrett

will, you will lop off the the, pretty much the whole of the surface of the femur. You'll cut a little box here for the surface, for the little mechanism, mechanical mechanism to substitute the crusade. And you take about nine millimeters of tibial bone here, because you have to get a little tibial base plate in with polyethylene. So you are removing a substantial, if you like, chunk of the knee, although most of the knees nowadays will keep the cruciate ligament, sorry, the collateral ligaments that run down the side with a partial you're probably taking off a couple of millimeters of bone to put your resurfacing on a couple of millimeters tibia. And of course, the rest of the ligaments remain the

Steven Bruce

same. You said, most of the knees. We'll keep the collaterals if you take away the cruise ships. I mean, I'm struggling to see how the knee would function if you don't have collateral

David Barrett

so some of the models so that we're getting all a little bit more technical now, but for some people who don't have great stability, we can adapt the design of the knee so it substitutes not just for the cruise ships, but for the collaterals as well, and that gets into much more like the picture I showed of the hinge knee. It not, not that particular bomb, but we can actually design stability into the knee so we don't need the collaterals if they're damaged. Okay,

Steven Bruce

so in terms of the advice we can offer to our patients, obviously, people coming to you are, by definition, they're seeing a particular type of consultant, and they'll get a particular type of knee possibly better than they would get on the average NHS service. What can we advise our patients to make sure they get the best possible service? So

David Barrett

I think that there's some great there's some great surgery on the NHS, and there's some very. Covid surgeons who do partial surgery, who kept their training out, who want to be able to offer solutions. So I think it's unfortunate that people regard a knee replacement as the only solution for knee arthritis. And to think what, what our patients should be offered on the NHS, as well as privately, is if you like a spectrum of treatment. And so it used to be, you had to wait until you couldn't walk to have your totally because what they were doing was matching the patient to the operation. They had one operation. They did total knee replacements. And if you weren't bad enough, you had to wait then you got a total knee replacement. What we should be doing is matching the operation to the patient. And if you come in with medial pain as a, let's say, a 60 year old, 60 year old golfer, that stops you playing golf, and we can see that you've gone down to bone on the medial side. But the rest you need is fine. You should have a medial resurfacing. Keeps you going for another 15 years, keeps you playing golf, rather than saying, give up golf and wait till you come back and have a knee replacement. So coming back to the advice, you can look at you can look up surgeons on the national joint registry. You can see how many they're doing, and you know there's no that's not spying on anyone. It's there for everyone to see. And so you'd want to see someone who would offer a number of solutions, who has an established knee practice doing more than 50 knees a year, which is about what the average NHS

Steven Bruce

patient, do you have any option over who does your knee? Yeah, I

David Barrett

think you do. I think in some places, what's what's happened is that they have taken out the person, the personal involvement and knees are regarded as units that are sent to different people, but I think you I think you can try and specify who you'd like to see and and you can certainly be part of their service. It's very difficult on the NHS to guarantee that that particular surgeon will do the operation. But if you're part of their service, that everyone should be aware of what's going on and should have the options available. I

Steven Bruce

remember when I had my knee replaced by chance, the chap who did it, he did it in the local private hospital. There was an NHS operation. When I looked him up, as you said, and he was, by comparison with any of the others in this area, he was way, way ahead in the number of knee operations he did. It did occur to me at some point he must have done his first one. And some poor patient has to be your victim on the day you do your first knee replacement or resurfacing,

David Barrett

sure. So and then that's, that's what, that's what has changed a bit. So I was trained like that. So in my training, we were, we were sort of not let loose, but we were supervised by consultants, and we got less supervision as we got better. So ideally, no one was unsupervised, but

Steven Bruce

the routine was, See One, Do One, Teach that, yeah, that's

David Barrett

where we're going. Is ideally that, that that was how it supposed to happen, but often you just got left and and that is not great, and it did happen okay with people a lot more regulated now, and what is done much better now is surgical training. And so the the nightmares of having a young, inexperienced surgeon let loose on a complex knee. So we have a lot of virtual reality training. Now there's a lot of cadaveric training. So that's, that's that's increased a lot in the last 10 years, when your your first knee will be done on a cadaver, and no damage can be done. And so a lot of companies support that teaching now, so I'm glad it doesn't happen like it happened for me, and I think people can be a lot more reassured now that they'll see a surgeon has got proper training. What

Steven Bruce

does go wrong? Then you've talked about infection earlier on, but what are the mistakes that can occur, although not necessarily mistakes, but what are the poor outcomes?

David Barrett

So the challenges are for us as surgeons, and something that your viewers will pick up is, is the very small alterations we make when we do knee surgery, and the knee is very sensitive to little inaccuracies. It needs to be put in correctly. And so what will happen if the surgeon doesn't have his best day or her best day and and puts the femur at a slight angle, the patient will appreciate that it's just a bit loose, or it doesn't feel right, or it clicks a bit, and it's not the end of the world, but it just takes a percentage of the quality of the operation. So I think there are the catastrophic infection, which happens to everyone, unfortunately, because this happens to patients, and not necessarily the surge as well. But that would be, I think, the biggest thing that goes wrong for surgeons, where, where they say, Not sure I got that right. Or, how do we get that right? So quite a lot of us are using robots in surgery now, which, which are the idea is that that would rule out that kind of error, that inconsistency, and we should get a lot more accurate when we do. That surgery,

Steven Bruce

okay? Going back to the first one where you said there's a slight misalignment, or knees at the wrong angle, will the patient still function okay? Or would they go back and have that revised? Would it be livable with Yeah,

David Barrett

so that's, so that's the thing. It's, it's probably bit like a Morris Minor, but you would hope would be a bit better than it was, in that the tiny mal alignments that sometimes occur, or mis balances. We

talk about balancing the knee, and so it's when we do the surgery. And again, your guys will pick this out when they're rehabbing the patients. What we have to do as we make the cuts on the femur and the tibit, we have to make sure that the collateral ligaments, which are the things are holding together, because there's no more hinges anymore, but collateral ligaments are the same tension in flexion as they are in extension, and so that means the patient won't really notice as they bend the knee any change in tension, and it should be free and stable for them. And the issue for us is if we don't get that right, and we don't balance the knee correctly because we haven't adjusted cuts and the way we're putting the plastic in, if a patient's looser in flexion than they are in extension, they'll find it their knees bit sloppy when they're sort of sitting down or trying to come downstairs.

Steven Bruce

Okay, few questions Isabel says, Do you have a screening protocol for dental foci prior to a knee replacement. So

David Barrett

we should Yes, yes. So dental acquired, that's a great point, actually. So because of the infection thing, we we are keen that patients are pre pre pre med, or they they see the nurse, have a pre medication before pre assessment for the operation and dental health is actually really quite important. So someone's sitting on some rotten teeth a source of infection, blood borne infection into the knee. So absolutely so if people have dental issues, want to get their dental hygiene right before they have surgery. Gosh,

Steven Bruce

and you'd hardly thought that was a problem in this day and age. You might

David Barrett

not, yeah, you might be surprised. I'm certainly surprised every so often when someone is carted off to the dentist having said they're coming for surgery. But no, it is a bit of an issue, actually. So it's a great point to make.

Steven Bruce

Sweep says, What do you think of arthrosamid, as opposed to UK are

David Barrett

as a first mode.

Steven Bruce

Yeah, that's when I got on my notes here, yeah, hoping you'd understand. No, no, no, no. So

David Barrett

I didn't show the answers. I think it's quite, it's quite an exciting thing. So it's, it's, if it's what I think it is. They're using an injection of tiny, little hydrogel spheres, and that is a supposed to be a artificial cushion and lubricant to the knee. What we use currently is hyaluronic acid as a lubricant. It's naturally occurring. It's made artificially, but the body can't tell the difference. So we use that quite a lot, probably using less cortisone than we did, just because cortisone will actually soften the bones when we use it repeatedly.

Steven Bruce

How often is hyaluronic acid effective? I remember I asked because years ago it was used on me, it made no bloody difference whatsoever. Is it effective using the right cases?

David Barrett

Yeah, no. So I think the problem with hyaluronic acid is it it's probably used in the wrong patients. And the patient will say, Look, I just don't think I can face any surgery right now. And the surgeon will say, Well, look, we'll give you an injection instead. And the hyaluronic acid is as we look at our X rays, really, we have to see a gap between the two bones in order the hydro R I can lubricate the bones. And oftentimes these people have gone to bone on bone arthritis, and so trying injecting it with hyaluronic acid is but as good as fanning it with a hat, fanning out a hat would probably be better. We'll build

Steven Bruce

that into our rehab processes. Yeah, that's right, yeah, it might help. Thank you for that. Okay. Isabel has asked another question, how often is resurfacing of the patella needed?

David Barrett

Okay? So this, so this is great, so this is not going to make me look very good, or it's not going to make orthopedic surgeries look very good. It's a huge fight, okay, in terms of whether people think it's important or not, and it's an article of faith rather than science. So in England, or in the UK, the majority of surgeons will resurface the patella and so, and that basically just means that we'll flip over the patella like this. We'll take the back off the patella, and there's a polyethylene surface that will go on top of that, okay? And the reason we like to do that because some of the pressures on the patella are very high when we bend, and so we think that would be beneficial for the patella, but 40% of the usurgers in the UK don't believe that, and they feel the patella is not a part of the knee that causes pain, and they'll be happy. To leave it unresurfaced. If you're in Italy, pretty much 98% of the surgeons don't resurface the patella at all. Same in Germany. So it's a weird thing, 98% of patients have surgeons in America will resurface the patella. They will. Yeah, they will. So different factors at play there. There weren't only because they're scared of being sued. So the issue is that

that some people will suffer a little anterior knee pain after surgery. So about 20, 20% of our patients are a little unhappy. So that's that, and that that 20% the unhappy 20% of what we're trying to pursue right now with our research, because we've got longevity, as you talked about, we've got implants, both partial and total, that will last 15 or 20 years. We're looking for functionality now. And a lot of people will say, look, honestly, I don't have pain anymore, but I don't feel that happy coming downstairs. I can't kneel, I want to cycle more. Why can't I play tennis? So, so it's, it's that we're driving up.

Steven Bruce

Okay, thank you. Sweet says I've had a UK art marvelous. Do you think robotic surgery is better?

David Barrett

UK are? UK are? So what he's saying is knee replacement. That's right. So, that's right. So UK, uni, uni replacement, so it's another, it's another way of saying partial. Okay, okay, so I'm with him on this. I like partials. Most of my practice is partials. And if I can possibly do a partial, I will, because I believe it leaves much more the patient's knee. Now, the evidence is just the just coming out right now, and literally this month, in the Journal of bone and joint surgery, which is our club magazine, if you like. It should be called mallet, really, but it's called the journal. Is some data from someone who uses robot to say that you can show that there's a slightly better outcome. Now, the jury is out right now, about totally, and this is the first paper that shows that. So there may not be, so far, there hasn't been a big difference.

Steven Bruce

Okay, it's interesting, though. The question there it was, he's had a Ukr, do you think robotic surgery is better as though there's a one was a an alternative to the other? Yeah,

David Barrett

no. So it's not an alternative, so it's not like laser surgery. You know, it's marvelous. They're going to do it down the Zoom channel on and they do it with a laser. So it's nothing different. It's exactly the same operation, yeah, but some were cuts and made by a robot, okay? And when you say they're made by a robot. It's a robotically controlled sore, which actually the surgeon moves, but the robot will correct it, and so if the surgeon is making a wrong cut, the robot will correct it, but it's still done by surgeon.

Steven Bruce

Thank you. Nick says, is medial compartment, OA, partial knee patient in brackets, associated with knee virus. Nick tends to see more valgus knees. Can partial replacements also be done on the lateral compartment. And do we see many of these? And are they associated with the valgus knee?

David Barrett

Yes to all that. Okay, so there's no bit there. Okay. So the the this is what's really interesting. The majority of us, I think I said earlier, 80% of us are slightly various. Okay, your bit various. No,

Steven Bruce

only on one side. Okay, well, that's the one, the one that's been replaced, the one that's been replaced is straight. The normal one is, that's

David Barrett

right, that's right. As you walk in, so you think, anyway, so So you're a bit various to start off with. And so you chewed up, I expect you chewed up the inside of your knee, media aspect, and so he's absolutely right. A degree of mechanical malalignment will accelerate the wear on the inside of the knee, if you're ferrous. So it's rather like if I explain to patients, I say it's like having a car tie and putting it on wonky, and that means you wear quicker on the inner treads, whereas your outer treads are just perfect. Why do a total knee? Okay, so the and then to his point, then valgus knees will wear on the outer side, because that's where all the pressure goes up. Now in terms of percentages, it's also right laterals are much less common than medials, so about 15% of arthritis is lateral arthritis, and there are some surgeons who say you can't do a partial on the lateral side, but it's just a more complex operation. So some of my happiest patients are lateral partial patients, because we can get them, we can realign them, we can put the lateral in. It's just a lot more fiddly at our operation.

Steven Bruce

Okay, I suppose it kind of begs the question, great to get involved in all the research in designing new replacements, partial replacement. So what are we doing about trying to prevent them being needed in the first place? Because if you prevent that arthritis, then they can delay the operation. People will be happy for longer. It's

David Barrett

I think that we will. I think we're going to see a lot more of that, just because of, not because orthopedic knee surgeons aren't wonderful people, because clearly they are. But it's just in just the workload that is coming. That graph terrifies most governments, because this is expensive surgery, and if there's a way they could stop it, not not just be nice than knee surgeons or nice the knee patients, it would be just a great way of handling

Steven Bruce

issues. What is the cost of the NHS for knee replacement, typically,

David Barrett

so. So if you were, it's difficult to put it, put a figure on the NHS, because a lot of that is is very difficult to account for, because it's such a huge, great machine. But if you were, if you were doing this privately, you would be looking at about sort of 16,000 pounds for a total knee in terms of cost of the patient, everything, okay, which includes the implant. The implant is usually about 1000 pounds. Then they've got the hospital say, then the anesthesis, and then the surgeon. Well, the surgeon is about, you know, 25 quid.

Steven Bruce

Hardly anything, yeah, of course, a bag of tests, all the surgical stuff,

David Barrett

and so on. But, but no, so I think there is a lot of epidemiology, which, of course, most orthopedic surgeons can't spell that, that is looking at how we divert people from developing osteoarthritis. And there appears to be a very strong genetic element to that. And people say one mum was awful, or her grandma was awful. So, so there is a definite family history to this. And a lot of people think it's weekend warriors beating up their knees. To a certain extent. It can be, but there's a very strong genetic element into it, and it's maybe addressing that that's more important than than with these increasing numbers.

Steven Bruce

Yeah, and of the patients, it's possibly either a silly or a difficult question to answer. There must be a greater preponderance of active people who are seeking knee replacements, as opposed to, I don't know that we talk about the growing obesity crisis in the country, but then I guess if you're if you're obese and more sedentary, you probably don't need any replacement. You don't really want

David Barrett

them. So, so that's our issue, actually, is, is one of the factors that they think is driving these bigger figures is, unfortunately, bigger people. So So you we see, I think you're right to characterize them as two groups. So we've got, let's say that sort of 4555 year old, tough mother who still thinks he can go on weekend hikes and stuff like that. And then we've got some very big people who are morbidly big, so their BMI is a way 4045, 50, who are just destroying their knees, and they are not active, and they're not doing a lot of walking, but just the sheer weight is is driving their knees, and they are a huge problem. So as everyone knows we're as a country, we're getting bigger as in terms of our BMI, not taller or more handsome, but we're getting bigger, so her BMI is creeping up, and we are seeing that in people's knees. So unfortunately, is it's about half and half.

Steven Bruce

Yeah, and I suspect that the system can't cope with a number of knee replacements, which were knee surgeries, which are needed at the moment. I don't what's the waiting list in the NHS unit.

David Barrett

So it can be, it can be varied. I've just, I've just operated on a lady who's come from Wales, and she she was told it's four years, four years, four years. And in some places where they're putting patients on a waiting list to go on the waiting list. Now, see, that's a little bit of a maneuver, because obviously they didn't can say, they say they're waiting lists a year, but actually, if it's a year to go on the waiting list. That's actually two years. Most places are getting better, but we're not recovering at the same period. Again, part of my European exposure is, you ask how other guys are doing. I'm friend in pretty much every country in Europe, they're back to their activity, their normal activity now, pre covid, and I'm afraid we're not,

Steven Bruce

gosh, I'm taken by a question here, if I can do it, we're going to go and look at a patient in a second. Otherwise we will sit here and chatted to each other for all evening, but someone who is calling himself, I thought he said old Domestos at first, but it's old DOM osteo says, Do you see total knees having increased flexion capacity in the future? In brackets. By the way, we last met years ago, barefoot water skiing.

David Barrett

No, really, that's absolutely true. I nearly killed myself, actually, barefoot water skiing. So great, OK, well, Hello and thanks for that question. I'll show you my feet later, OK? But the.

Steven Bruce

Yeah, there's no need.

David Barrett

I've still got scars. The we are seeing better flexion, that some of the some of the design things we're doing is getting us better flexion. I think we're almost thinking more now about because we used to just say, if it flexes 90, is great, and 120 is what we need. 120 is what we need in the western world to be comfortable. And so we so we 120 we can put our feet under the chair. We can avoid tripping people up in the bus or on the train. If we flex the 120

Steven Bruce

you can actually fit into a Ryanair seat

David Barrett

on me to have to have your legs sawn off to sit in a Ryan et cetera. But the and then in other cultures, that's not enough. So in most Asian cultures, that is not enough, and they want more bend from the knee. And we're trying because they squat more, because they squat more. And for a lot of religious regions, they need to kneel more, and they need to sit back on their heels, right? So when we design a knee, we design a knee globally. It costs so much that it has been marketed all over the world. And so those are the real drivers to increase flexion, the but to that question, I would say we are looking at more flexion, but we're also looking at stability. That the trick to getting more flexion is that is the do less. And that comes back to the partial knee thing. Again, if we, if we took your knee that's got medial wear, and put a partial in it, rather than a total, we'll be much happier you you get your heel to your butt, as it were, because we haven't changed much,

Steven Bruce

right? Okay, that's encouraging, and I must but again, some to the lay person like myself, I think to myself, if you put in a mechanical I'm going to call it a hinge joint. It's not the one you showed us earlier. No, no, you put in a completely replaced hinge joint. Why can't you get total flexion? What's stopping it? So

David Barrett

it's, that's, it's the mechanical conflict, and that's why, that's why we're when we talk about the design and mechanical solution for a biological problem. So what will happen, without getting too complex about it? Well, actually, I'm going to get complex about it, is that as your as your native knee bends, okay? It goes to a level about that, and then it starts gliding backwards, okay? And so as it glides backwards, it gets extra flexion. It's practically impossible to design for that, because as soon as you get a mechanical thing gliding backwards, it's too loose. And so to the question, you know, are we going to see some reflection? Yes, but actually, a better strategy will be to leave as much as unnatural mechanics and allow the need to glide back, because we can't really engineer for that. Okay,

Steven Bruce

let's go and look at a real patient, and you can give us your thoughts on Marion's needs.

David Barrett

Let's, I'll follow you, great,

Steven Bruce

right? This is Marion. Marion, actually, Marion told me earlier on that we had met down the pub. One she sits in a corner with a bunch of singers and and they annoy the hell out of the rest of us. But

Marion, you've had one knee replacement, haven't you, about two months ago, and you've been told you've got another one to come Yes, right. Okay,

David Barrett

man, thank you for coming on, very brave, especially as you don't know what I'm going to do to your knees, but what would be really nice is, is just to talk about your total need to start off with. So I think it's a total one you heard, isn't it Okay? And how just how much symptoms did you have? What sort of you probably heard us talking, but what sort of pain did you have before you had your knee done? I first

Marion

started noticing pain about 10 years ago, then got diagnosed about seven years ago, after an x ray, and I could cope for a while. I was walking and swimming and everything, but the last couple of years, well, since lockdown, actually, when I stopped going out so much, it's gradually got worse. I should have had the operation in March, but unfortunately, it was canceled by the hospital in which in that stage I had to go into a wheelchair. I just, I just couldn't manage the pain. But as soon as I had the OP, that's improved tremendously. Absolutely

David Barrett

no. It sounds as though you suffer quite a lot, and how were you managing stairs that time

Marion

very carefully. Okay, one time with a barrister and with my husband behind me, make sure I'm like this. Yes,

David Barrett

catching up. Yeah, that's good. Okay, and what about sleep at night? Was that awkward for

Marion

you? Yes, it was a horrible time. I was very depressing. I wasn't expecting the emotional side to be quite as bad as it was.

David Barrett

That's a really good point, actually, and something that you're it's something that people watching tonight might appreciate, and they'll get it in their when they're treating people for for knee pain. Is how awful this is for people. We don't get this because. They are in and out. We're no one tells the

surgeon how they're feeling, which, well, very grateful for, actually, but, but, but, but, but, your guys, who will be with the patient for 20 minutes, 30 minutes, 40 minutes, and they'll get much more of this from the patient. It is really there's some very good data to show that the longer you wait, the more physically depression you get and it can make people very tearful sometimes. Well,

Steven Bruce

I'm struck because you said, if the waiting list is four years and I'm waiting as the last possible minute to get my knee replaced, actually, I had my replaced. I could no longer cycle. If they said to me, will it be four years before you get your knee? That would have been devastating. And

David Barrett

so now we're getting the problem that we used to get in the NHS is that people are actually getting their name on the list with minimal symptoms because they know it's going to be four years. So it compounds it really

Steven Bruce

a bit like eating when your parents put your name down at birth.

David Barrett

That's right, yes, exactly yes, before birth. Okay, all right. Could I have a look at your name? So I've got to get you to sit back and then dangle your leg down. Is that alright? Can someone take and actually down? View leg down, over the side. This is exactly what I said. I wouldn't do for you, okay? And hitch up that, but I think that so that's a fine looking scar. Okay, well done. You've done very well. That's a lovely scar. It is a big scar, so you can see it's what we call a major operation, okay? And well done for getting back. And I think you've got some arthritis elsewhere. Is that, right? I've got it everywhere. Okay? So, is that rheumatoid arthritis, or is it is just osteoarthritis, okay, all right. And so, so man will be probably the sort of person that is going to need a total knee replacement, because she's clearly, without being rude, riddled with it, okay, and so that means the whole joint isn't affected, okay. So this is an entirely appropriate surgery, but it is a big one, and now we're eight weeks out. So as you guys examine the knee, you'll be looking at and you can see it's a little puffy, okay, you can see her scar is well healed, which is great. You can note that she's got a little bit she's got a good extension, and she's got some quad stand coming back there. So all of these are things a little ticking over in your head as you look at the patient, okay? As I put my hand on her knee, I can feel that, so it's quite warm still. You notice that, okay, and she's a little bit puffy as well. Okay, she has a little fusion. Okay, she's got that characteristic curve in tivia, when we were talking about the question about Varus and Fauci, she's a little bit Varus, and I imagine she started wearing on the inside of her knee first. Okay, just let's bend from that no bend that knee. Marin, okay, and that's really good. She's a lovely flexion. So that's 120 that's a physio told you. I

Marion

think it was said it was even 130

David Barrett

I bet it was okay, all right, so, so that looks lovely. Now I'm just gonna, I'm just gonna kneel down here. Okay, let me just get you to relax the leg. Okay, I'm just going to just try something here. Okay, so what we can do, we're just talking about, and I don't know if you can pick that up, there's a yes. So what I'm doing is what, what we often do to athletes and looking at their crusades. And so Mary's got a positive draw test. I can move her back and forth. Now, honestly, she's got a great result from knee surgery, but it just shows that there is instability there, which she copes with very well, because, you know, a 20 year old basketball player, but, but that's, that's our issue will be, it will be good if we didn't have that right. But I

Steven Bruce

think is that instability possibly why she got greater flexion than you might expect?

David Barrett

Well, that, and that's the issue, is that by making it slightly looser in flexion, we can get a bit more movement. If we make it too loose, then it's difficult for Marin to come downstairs, because she doesn't feel stable enough when she flexes her leg.

Steven Bruce

How do you feel now when you come downstairs?

Marion

I'm okay first thing in the morning, it takes a little bit getting, getting going. But no, it's fine,

David Barrett

okay? And I think she's done very well. Done very well to rehab. It clearly was awful. And the other thing is, have you been told how long it might take to get it better? Told to get it back up to a year before? Yeah. So I think again, that's useful for for for the chiropractors and physios and osteopaths. Is that that we are looking at a year here, and a lot of people, I mean, I say to my patients, by about eight weeks, you know, most people, mostly friends, will think it's over, you know, oh, she's better. She's better. She's walking back. She's fine, okay. But actually, the patient will know that they can, they continue improving up to a year, up to surgery, and I think you're still a bit numb. Here is that?

Marion

Right? Yes, just there is. So

Steven Bruce

how soon do you get your patients walking after surgery? So

David Barrett

the day of surgery, so did they do that too? It's tough, isn't it? I was going up the stairs in the evening. Yes, yeah. So, so with modern allergies, and now we can make this not so. Knee surgery has a terrible reputation for being awfully painful. Was it? Was it awfully painful for you? No, okay. So that's, that's really good. Okay, so it's great message again, because people are saying, Oh, you shouldn't have a knee replacement. It's terribly painful, awfully painful. And actually it's not if you're properly looked after, because they'll look after the analgesia, make sure you have a lot of pain relief. And of course, that means we can get people moving now. So certainly with our partials, where we we can get them home the same day, and home, you're much safer. But you know, it's great to see you getting out like that. Okay,

Steven Bruce

I'm gonna interrupt you, because I know, I know. But Mike asked a question about how it takes to recover from these it could be getting better over the whole course of a year. Are there various stages we've got walking immediately, yeah, so

David Barrett

it's got walking immediately. And so I guess most hospitals will want you to walk, and want you to be able to do stairs, maybe one at a time, just as long as you're safe on stairs and have a what we call a stable wound, a wound that isn't bleeding or oozing, okay? And then those are the three criteria for getting thrown out. And so, so that's the first stage. And then there's a there's a stage that I think is about sort of four to five weeks where you're not driving, but you're walking about more, you're getting used to the stairs. Sometimes people have some night pain. Don't if you had any night pain after your operation, aching, I would call it. So you're tough on you. You're tough. You can come be my patient. So a lot of the and again, your people might see that is because they'll be doing the chiral osteopathy on them, and the patient will be saying, I don't know why this is I have pain at night. What's gone wrong? And what it is is that during the day, the movement of the knee will pump away the inflammatory fluid that builds up and and we can feel the mariners knees a little warm that's got a little fluid in it, so as she moves and keeps going, she'll her pain during the day won't be that bad. And then they look forward to going to bed, because they think I'm resting my knee. I'll that's the best I can be. And of course, it's agony. They have a lot of pain at night because they don't move as much, and so there isn't the pump to take the inflammatory fluid away, and the pressure in the knee builds up. And probably the best thing they can do is get out of bed, walk to the loo or walk to the kitchen, make a cup of tea and come back again, because just that movement will decrease the pressure before it hurts. So, yes, yeah, so, so, so that's that's quite important, that that if, if people have an answer to that, it's greatly reassuring for the patient. It very rarely lasts more

than six weeks. Yes, which is why I see my patients about eight weeks, because at six weeks they'll kill me

Steven Bruce

because they never slept. So when, when does the rehab start? So

David Barrett

for me, the rehab or I would like to say, we'll get we'll get you walking straight away. We do stairs. And then I say, actually, don't start. Don't visit your physio for about 10 days. Okay? Because, because everyone thinks, Oh, I've got to start. I'm going to go every day and but actually, as most as the physio will tell you when the knees hot and puffy, they can't do much for it, and then just send you away. So I would say, start at 10 days, and then after they've had an assessment, the physio the corona will say, Okay, you need to come back and see me this week, or you're okay for another 10 days or two weeks. And that is regularly reassessed, pretty much by the time I'm seeing my patients at eight weeks, the physio said, you know, you're probably good, and you might need one more session, and that's about it, right? Okay, right, okay, shall we have a look at this

Steven Bruce

other one? Such a reassuring practitioner?

David Barrett

Oh, it's awful. Okay, all right, that's that's great. And where do you get most of your pain? If you were to point with one finger, if you have one finger to point your pain, love that. Okay, great. Okay, so media side, okay, so I don't know if we can pick that up, but she's got a varus curve, okay, here, this one is straightened out, okay, but she got a varus curve here, and she's got most of her pain here. Okay, shall we get you spun around mine? I guess let me get you up here. Okay, I'll just put your stick here. Okay, trip Yes, I'll trip over that stick later on. Okay, so, so the key for me is, is, it's just looking to start off with. It's that sort of look, feel, move thing. And so I would have watched Marion get up on the chair, because, rather up on the couch, because you can see how your patient moves, and you can see how uncomfortable they are. So you might have a patient who says you wouldn't believe that I'm in terrible pain doctor, and then forgets that she has the limp when she gets onto the bed and jumped up and said she's not in that much pain, okay. Okay. So looking, looking, man, it's great to be able to look at her from the end of the bed, and you can see the little curve she's got in her tibias both sides, okay? And then I actually do say to them, you know, you've got one finger, okay? To show me where your pain. Is, and she's, she's going for here, okay, now I can probably find that is it just there? Yeah, okay, right. Got it? Okay, so, and that's, that's, it's worthwhile trying to find out. So, on her medial joint line, and a medial joint line, just by feeling it is, is, is swollen, and you probably feel that little lump I'm rolling over there. Okay, so she's got an ossified there. Okay, so as soon as, as soon as you see or feel an ossify, by definition, you've got two bones rubbing together, because that's how they're made. It's the the bone debris from the rubbing together spat out the side. And Lee and she's got an osteo fight there. If I do the same thing here,

doesn't hurt. Okay, all right. So, so I've looked at a knee, I can see that it's a little puffy. We've noticed that it's a little verse. We've asked them where the pain is, and we've been able to verify that is, that is where it is. Briefly, I'm just going to come around this side, okay? And so I'm going to say, push my hand against the bed, stop me, taking my hand away. Pathetic. Okay, okay, so, right. So, so the issue is here, that's a really nice way of looking, but what we're looking for is her loss of extension. Okay, so as these two bones are rubbing together, you will lose that ability to hyper extend the knee and flatten my hand. You should be able to keep my hand there, and you're close, but not close enough. So what we can say now is that she's got a very small alignment. She's got pain on the other side of the joint, she's got a palpable oscillator, and she's losing her extension. Okay, we haven't even moved the knee yet, but we've learnt all that already. Okay, and then we do the same trick with popping a hand over the knee. Now, this knee is cool, okay, but it's a bit squidgy. Okay, so there's got a bit of fluid in it, so she has an effusion in it already. And people talk about different ways of measuring effusions. But, I mean, you can just feel it. Squidgy people talk about pushing this down and then doing something called a patella tap, okay. And you've got a patella, tap, okay. We can make the patella make a little noise when we bounce it up. So what we're doing is floating the patella up on her fluid and then pushing it down and feeling it touch that they're femur, okay? So it's pretty swollen joint. Okay, just lean back for me second moment, and what I'm going to do, so now it's only now we're getting onto the move bit. Okay, so what we'll do is just ask her to bend up the knee. And just bend up the knee. How much you feel. So flexion is pretty good. Okay, tough goal. Okay, and it's always better to get them to do it rather than you do it, because you don't know how stiff they are. And sometimes you can cause pain by by trying to push the knee for them. And then I'm gonna let me do it. Okay, yeah. And she does, she does flex very well, so she would as flex into about 140 No wonder you're good on this side. Okay, all right, come back here. So she's making it up. Yeah, that's right, that's great. And just sit yourself back. And then the other thing I'd want to do is just see how much she corrects and pop that down for me on Okay, and so we've got this various mal alignment here, okay? And what I can do is just relax and let me take the weight of leg map, just you just go all floppy. Okay? And I don't know if you can see, but can you see I can correct that's how Varus mal alignment, yep. And I can actually correct it. She should be out here, okay, so that means she's chewed up all the inside bone, and so that means the various is getting worse, okay, but she is entirely correctable. That's where she should be, okay. That's where she is, okay. So what we've got now is a knee that's pretty much worn on the medial aspect, secondary to a various mal alignment. It's got painful medial joint line. She's got ossified on the joint line. She's got a restricted extension, she's got very good flexion, and she has a correctable virus. Well done

Steven Bruce

since four years time

David Barrett

for you, Mary. But so and with this one, would you have it? Would you have it done again? Oh, yes, most definitely. So I think that's been a huge success, and it's great to have that is to hear that experience, that it hasn't been painful, that you got moving very well, got excellent flexion. And the other key, I think I asked you earlier was that you coming downstairs isn't a problem for you. So about, and this is, this is what, again, your practitioners may pick up in their clinics from their patients is that actually coming downstairs for a knee patient is often quite awkward, and it's great. It's not for you, which is brilliant, okay, but it's one of the things that anterior knee pain, or pain over

the front of the joint, is one of the bugbears about one one in five patients. It's very difficult for us, a genuine problem.

Steven Bruce

Was it fear of potential? No, it's

David Barrett

a genuine problem. So there. And the worst bit is they didn't come in with that pain. So they will come in with pain here like Marion's got, okay, we will have done the operation and we will have got rid of her pain, but they'll say, look, dog, I've got a complete different pain now. So it's really difficult coming downstairs. I've got pain over here, and what we're not getting right in total knees is the interaction between the patella and the front of the femur, and that's a very complex interaction, and we get it right four out of five times, but one out of five we're not and so it generates quite a lot of pressure, and that's what the patients will complain of. Can you fix it? It's difficult to fix, and oftentimes the first choice is physio or osteopathy in terms of, can we make the muscles at the front of the knee stronger, and can they release? Because your guys will know that actually building up the quads and the hands will reduce a lot of anterior knee pain, anterior knee pressure. So that's the first thing. It's a difficult thing. It's a difficult thing to address, and sometimes we have to say, look, this just hasn't been right for you, but I'm not sure there's a solution. So that's why, that's why we're driving design for this sort of thing, and it's also why we're focusing a lot more on partials, because if we get away, don't do it partial because we haven't lost the Crusades. That means the control, the kinematics at the moment of the knee much better. Yeah.

Steven Bruce

We had a lovely lady on the show some time ago who was talking about treating scars. Is that something that you consider as well?

David Barrett

Yeah, so I don't, I don't think the scar is the source of the pain, but actually it's really important. And one of the first things I saw when I said, Mario, that's a lovely scar, okay? Because it's the only thing the patient sees. And if it looks like they've been bitten by a dog, they're not going to feel happy about what might have gone on on the inside. So often, a surgeon will walk away, and the juniors will show up their knee, or they use clips or something like that, but they, all they've done is use a proper sub particular suture here, which is great. And there's no clip marks going up. There's no stitch marks. And I think that's really important sometimes. So cosmetic is quite important for patient. But I think what your what your lady would have been talking about, sometimes we see some adhesions with the scars, and that can make bending quite uncomfortable. And so tissue massage and using those creams are very good for that. She was talking

Steven Bruce

particularly about abdominal surgery, and actually manual treatment of the scar would improve back flexion and so on. It was, and it was strange how that facial connection was having an impact on overall movement.

David Barrett

There's a huge facial connection, and that's very important for all the people that do the movement treatments, the Pilates people. And grew to people they they think the fact those facial loops are really, really important. So I'm actually all in favor for that sort of thing.

Steven Bruce

So Marion, you're on the waiting list to get that one done. Yes,

Marion

have you been told how long he hopes by the New Year?

David Barrett

When did you which New Year?

Marion

I mean, I was when I saw the consultant. It was October last year, and I had the op in June. So he told me at the time I wouldn't need but both done, and he chose the left one first. So hopefully, so

Steven Bruce

maybe she'll get through the process a little bit quicker, since it's already on the cards that both get done.

David Barrett

Yeah, no, that's right, and plus, they realize what a nice patience she is. So obviously,

Steven Bruce

I got such a good result to spoil it.

David Barrett

No, that's true, isn't it? So, yeah, that's right. So I'm sure it'll be identical. The operation will be identical, but Your experience may be quite different.

Marion

Yeah, my only snack was the next day. My sodium level had gone,

David Barrett

yeah, well, so there's a thing. So, okay,

Steven Bruce

four days in a&e, I think, yes, yeah, right,

David Barrett

yeah, but, but again, that's another trick for the your your your practices might be explaining to the patients, because, obviously the because they have longer with the patients, and they're not quite as bruised or rude as orthopedic surgeons, patients will often say, look, I didn't want us certain this. But why is this one different than the other? It's the guy sitting the same, you know. Why does it hurt at night, you know? And so, so the answer is that we don't know, you can have exactly the same procedure, same patient, same surgeon, same implant, and it just feels different, and we think it's due to those tiny little differences that I was talking about earlier, but it just won't be entirely identical, but those differences, up to a millimeter or a degree, can make a difference in the performance of the knee.

Steven Bruce

Okay. Well, thank you, Marion, that's very kind of, let me pick up the stick,

David Barrett

take up the stick that I didn't look after properly

Marion

and and that swelling will go down with it. Yes, because I hate

David Barrett

it, yeah, no, see, I mean, so we would say this is such a fabulous result. Okay, man says I really hate to sweat it. Okay, makes my colleague No, no. So that's the other thing is that is that people often

say, what's happened to my ankle? Okay? And, you know, they say to me, did you put it in a vice when you did the operation? Because really, swallow now the other one isn't swollen. And so that happens with hip surgery as well, is that some of the fluid, the lymph fluid, will just trickle down the knee, trickle down the inside your leg, and puff up your ankle. Now that might be there for another six months. Okay, sorry. Okay. The other thing I get is that when we do our partials, and so if Mari was gonna have a partial, we correct her so alignment came out, and then they start saying they've got ankle pain, because the ankle now hits the hits the floor at a different angle. Yes, and that takes about 12 weeks to get better. Okay, so again, another thing for practitioners, tell them to hang on. They don't need new orthotics. They just need to get that ankle just,

Steven Bruce

is there a role in this for manual drainage techniques of some sort?

David Barrett

I think it makes it a lot better. If you've ever had it, it won't, unfortunately, it won't make it any quicker. You'll still get it. But for that, for the two or three hours after you've had a drainage technique, you'll feel it'll feel better.

Steven Bruce

You agree to get off the same back to our seats and a bit more chat. Thank you,

David Barrett

lovely patience. Yeah, I'm sure it's part of the world. They're all lovely,

Steven Bruce

unlike some of our viewers. Because I've got a particularly cheeky question that has come in from someone called Claire, who says, Do 65 year olds who are star sign Leo in cycle or skydive tend to recover badly from partial knee replacements? She says she's asking for a friend. Yeah. So I wouldn't call her a friend myself, clearly.

David Barrett

Is it Claire, though? Yeah. So Claire is a Leo who does so so the answer is yes. I mean, I think that they are a very good option when and we talked about suitability, and I think that when we look at, when we look at 100 100 patients, okay, about 40% will be suitable for a partial and and to be honest, that's probably the big thing we need to address in the UK right now, because eight, 8% are actually getting partials. And there are surgeons who are knee surgeons who don't do partials at all, because they say, I just don't think they're very good, or I haven't had the training. And so, like you

say, it's very difficult to start. You know, if you're, if you know you can do it totally, it's very difficult to change. And we it's a big education thing for us within knee surgery,

Steven Bruce

you said, you said a partial is more complex replacement. Does that mean they are correspondingly more expensive? No, no.

David Barrett

So they're not actually cheaper. So if you, if you were doing a partial under that same arrangement, I talked about it totally being about 16 or 17,000 a partial is about 14,000 which breaks my heart, obviously, because it's cheaper, but it's more modern, it's more sexy, and the reason is because you're out of hospital so quickly, right? So that's why it cuts across that and again. So that would be a huge advantage for the NHS if they were doing all of these as day case. Suddenly knee replacement becomes day case very reliably. And we are. We are beginning to do day case, knee total knee surgery, but we need a lot of support, a lot of home care to be able to do that.

Steven Bruce

The NHS, if I may be forgiven for saying so it doesn't, isn't renowned for being very far sighted in things like this. I'm sure the surgeons and the you know, the literally cutting edge personnel in the NHS are, but it doesn't seem to be able to think that far ahead.

David Barrett

No, and I think the problem because it costs money. So it costs money to set the service up, and of course, they're so skint that actually they can't even afford, they can't afford to set up a service that over the long term, would save the money, because it costs them a little bit of money to start with. So there's a terrible inertia about the whole thing, really, yeah, Kirk,

Steven Bruce

he says, Do you know what happened to the Ascot trial in Oslo Street, implanting both stem cells and cartilage cells,

David Barrett

so that that that has now stopped that trial, I think, and actually, I think Southampton might have been part of that as well, although I wasn't part of that group, the cartilage shells have been. And patients always ask this because it's what they've read in Daily Mail, health bits, times or whatever. And it's sexy surgery, because you think, look, I'll just have a few cells taken out of my hip or my knee, I'll have them injected, and I'll grow a new knee. And it's been wonderful. And, of course, great for the journalists, because they can write the Space Age knee and stuff like that. I

Steven Bruce

think I saw one of those recently where they were saying, well, we can now turn people into lizards, where you can pull it off. Basically

David Barrett

got the same we've got the same DNA as lizards. Actually, some of. Got quite close DNA to lizards. But anyway, the the the the idea of this is it's been around for about 40 years, and one of the problems is we've never been able to get it to work. We've been growing cartilage cells, and what happens is, you can grow cartilage cells and inject them back in but what we need the cartilage cells do is organize themselves. So cartilage has 10 layers, and it has a kind of macro structure, and it's like little scaffoldings. And so we can make these cartilage cells, but they're too stupid to form these 10 layers. We need them to form proper cartilage. And so what happens is that we inject them in and they will, they will form some scar cartilage, but it's disorganized tissue and breaks down. So it's been very disappointing. And that's the outcome of that trial. They weren't able to show there's a significant benefit for

Steven Bruce

it. That is a shame. Kirk, you said that initially it seemed to be quite promising. Yeah. So

David Barrett

often the first few results, the first first year or so is quite good. And there's, there's, I don't know whether there's a kind of Emperor's New Clothes effect on that you've had a big intervention. You say it's good, but yeah. And what he's referring to is that the scar cartilage, you know, when it when it's formed, is quite okay in terms of pain. But of course, year two and year three begins to break down. And so that's why the early results are quite exciting, but the longer term results aren't of it.

Steven Bruce

Going back to something you said earlier on, Helen has asked whether replacements are less successful in obese patients. My follow on, but is, do you ever reject people for saying, well, you're just, you

David Barrett

just so that's that's a really, that's a really interesting question, and and it's also a slightly politically sensitive question so and so some hospitals have tried to say, if you have a BMI above 40, you probably should when we're not going to operate on you, because it's a big drain on the resources. So the background to this is, as your BMI goes about 35 and 40, you begin to have more complications from surgery. The surgery is more difficult, definitely,

Steven Bruce

but because to get there exactly,

David Barrett

yeah, it's like, you know, someone has a tie wrote by my ankle and have to be pulled out afterwards. But the the the idea is the surgery is technically much more difficult because everything is much more bulky and but really it's the rehab they struggle with. So they struggle with wound healing. They're quite big. So they lie back in the bed and they get more chest infection and mobilization for them, for understandable reasons, it's very difficult, so they tend to mobilize very slowly, so they have more wound problems. And so they it's not that the knee surgery is less successful, it's the complications make it less successful, so they have more more problems afterwards. So in the end result, it is less successful. And patients always say that if they had the knee surgery, they get fit and lose weight. So there's there's not one single paper that shows that ever has happened. All the studies of that show you put on weight, of course, then they say it's because the knee replacement weighs so much. But of course, that's a lie. Okay? What it means is, of course, they can get to the fridge quicker. So now they have no knees, they're up and down to the fridge much more quick anyway. So,

Steven Bruce

so there are people papers that show up. Yeah, oh yes,

David Barrett

I'm not on the fridge thing, but they are. They are much heavy. So, but to come back to the question, we would so they did say, Look, you, you're, you're a higher risk. So we have, we have determined that, you know above 40, you're going to have to get below 40, and then we'll do your operation. And so there's a huge outcry because we were restricting health care, and the idea is we shouldn't restrict health care. And so they're all a bit legal. And so now everyone's backed off that a little bit. So is it always

Steven Bruce

going to be a thorny problem, isn't it? You talked about media where Linda has asked a question about whether you see a correlation between that and foot pronation, and therefore perhaps whether orthotics, foot orthotics beforehand, might help to absolutely

David Barrett

so every time. Okay, I can't think of last time I didn't see someone who had a various knees, who didn't have dropped arches, okay, so, and they will, actually, the patients tweak this. They'll say, you know, I've got flat feet. My feet weren't wrong. I've always had trouble with my feet, and it's given

me bad knees. Now it may be the other way around. Their very small alignment will make their foot posture, begins to put the foot has to sort of pronate to get to get there, and, and as they walk, they have this scissoring gate, a bit like the models on the catwalk. And and as they do that, they're flattening their feet. So a lot of them will have had orthotic treatment before. Because actually the foot started hurting before the needed but it's their alignment that does it. And I think having orthotics, if it addresses some of the alignment issues, it's actually a good idea in early arthritis than me. Okay. Dawley

Steven Bruce

says, what level of involvement after surgery you think a surgeon should have regarding rehab? The information from from the NHS physio seems quite outdated. And where do we get better research information to help our patients? So

David Barrett

that's, that's a great one. I think that the the, I think it's probably right about the so the NHS is probably still sending people home with little stick drawings with times 20 on. And there's, there's a lot better resources now that we can use from the internet, which is freely available in terms of moving pictures. They actually have computer generated images of the real

Steven Bruce

of people doing is it still largely about strength in the quads? So

David Barrett

no, we look it used to be, you know, you've got to get quad strong. Otherwise, you know, you've got to have quads the size of houses. And of course, actually it's the hamstrings. It's the calf muscle. Glutes are super important because they straighten out your butt, and it also straighten out the knee. So it's the whole, as a physicist, we call it whole kinetic chain and and probably just those little quads exercises they get on the stick man drawings probably aren't as smart. Aren't good anymore. We should be looking at rehabbing the whole leg, okay? And sometimes that's the back as well, because a lot of people have these poor core strength because they've been so sedentary for a while, and you're like Marion was saying she took to a wheelchair. So suddenly core strength zero. So as you're rehabbing, these patients got to look at the whole kinetic chain going down the thing, and actually look at their core strength as well. Well, actually,

Steven Bruce

most impressive about Marion is, first of all, she's up on her feet straight away after surgery. But also, because of that lack of pain, she's probably much more inclined to follow the exercises that she's been give.

David Barrett

Key, yeah. So, so people, people think it's it's that because we're nice, they we don't want to be in pain away. We are nice, of course, but actually, the key thing is, having a happy, pain free patient means that their recovery is just going to be so much quicker, and they're going to have less infection, because they're not going to be static. They will be much more mobile. Get going quicker, and as you've seen, much more positive mentally if they're getting better. So pain relief is super important. And I think increasingly we're hearing more people like Marion say, Gosh, I wasn't that bad. Which is good, which was good, certainly with partials. I actually have people saying, This is not what I expected, is, when is the pain going to come and we can get away with it, and we use a lot of injectable analgesia around the joint now, which has changed, so we'll actually inject anesthetic around the knee so when you wake up, you don't have this awful sensation. Fantastic.

Steven Bruce

What about the opposite problem? What about the for example, the 65 year old retired Royal Marine who just thinks he's got to go and beast himself in the gym every day after his surgery. Is that a problem? Yeah, no, it is a

David Barrett

problem, particularly with the partials, because they don't feel they've had an operation. And they are of that mentality who did piece themselves in the gym, which is why they got in the problem first place. And so they sort of, we've had people who've taken their little stick man drawings and tripled it, and then, of course, they've come in at six weeks with a leg that's red and swollen and painful. And you know, we've had to take, we had to give them a physio holiday. We have to, you're not going to figure not doing any more. Actually takes quite a long time to get them back. So this, this, if you like this idea of ramping up people's rehab rather than just nailing it. And of course, the most of your people know that this no pain, no gain thing is just out of fashion. No, it's we shouldn't be doing that. We use discomfort as a guide. So I'm quite happy for because people say, How far should I walk? What's What's the rule about walking? Should I do quarter a mile every Friday, whatever? But the answer is, now what I say to them is, look, discomfort is you'll listen to your knee. Okay, your knee will tell you when it's had enough and begins to puff up, get a bit tight, feels a bit uncomfortable. It's time to stop. What we don't want to do is have them over exercise and think, Gosh, I really, really pushed myself. And then for next two days, they can't do any activity at all because their knees hot and swollen. So again, ramping is the is the way to do it. Okay?

Steven Bruce

Andrew wants to know what's the best version of a unilateral knee replacement. Your view on the Oxford unilateral knee replacement. Is there a better implant?

David Barrett

Okay, so, so there are two types of get technical here. There are two types of partial knee resurfacing, or partial knee replacement, that's mobile bearing, where the bearing slides up and

down, which is what he's talking about with the Oxford and then the the others. Is where the bearing is fixed. That is fixed the little bass play, as I was describing earlier. And what we're seeing is perhaps a move away from mobile bearings into fixed bearings. Oxford has got a great long term record as designed in the in the late 80s in at Oxford, strange enough.

Steven Bruce

And how do they come up with these names? I

David Barrett

do. Those guys are just out of the blue with this, aren't I? And the it was great idea at the time, was great engineering principle, because they were able to get something to slide up and down in the knee. But it does have a catastrophic complication, is that the bearing can spit out or dislocate. Now that often doesn't happen, but it can, and so when that happens, it's a pretty much a major emergency, and you have to go straight to a&e and sometimes put it back again. So what we've seen is a move away from that design. So what was, what we see now is that you're, pretty much, as a majority of people, use fixed bearing designs because they don't have that complication. So I would say, in that question, that that pretty much most of the unis, most of the partials on the market now have a very good track record, although most surgeons are moving away from Oxford now just because of that part that that cut that complication,

Steven Bruce

this might well be our last question. It looks like quite a complicated one. Ricardo says, Are there notable epidemiologic trends, regions or populations that are more or less susceptible and also with pediatric considerations, how likely would knee operations be appropriate for conditions like cerebral palsy, etc?

David Barrett

Right? So we'll do that to do the last one first. So cerebral palsy is hugely complicated in terms of a movement disorder, and so straightforward knee replacement, knee surgery for cerebral palsy really is quite dangerous because it upsets a lot of the mechanisms that the patient has learned to get about. So I would say it's probably not. There might be a few occasions where it might work, but as a rule, just replacing the joint is not going to help itself dangerous

Steven Bruce

in the sense that it was simply restrict their quality of life, not exactly.

David Barrett

Yeah. So they the they have quite a few of the quite a few of them will have worked out quite different ways of moving because they have to, because they're movement issues, and to put something in that's designed for a normal human gait, and then they have to, have to do make a few movements that are not designed for. They actually, we actually make them worse than they really are. So I'd be very cautious about that. There was the first question, of course, which now I've forgotten, was about something else, wasn't it? It

Steven Bruce

was where there are other, notably epidemiologic trends, or regions

David Barrett

so, so people, just in terms of people with various knees or various mal alignment, will get anti medial arthritis much quicker. So we have a little bit of it. But if you go to India or anywhere, anywhere, sort of east of Asia, into Asian countries, they all have this massive various tibias, and they get a lot of this so and, and they're quite challenging patients, because they're the ones want high flexion and so, so, yeah, so epidemiology, yeah, there are different cultural issues. We have a degree of it. But as you go into Asia, through India, you have a lot more covid tibia.

Steven Bruce

Okay, I said that'd be the last question. We might be to get one more in. I think John says, quoting you, there's an increased evidence of a genetic component. We'll have to do something about that. And he says, What do you have in mind?

David Barrett

So, so, I mean, the way you do that, even though it sounds a little bit odd, is gene therapy. So, so I'm not suggesting it would take all the people that have got curved legs out and shoot them. But the gene therapy, if you have a very strong family history, and we've seen that in some of the we've seen that in some of the rare enzyme disorders where the child is very ill, they can actually change some of the genes in that and that may be possible for osteoarthritis, for people with a very strong family, that's very early days. Yeah,

Steven Bruce

so it's the last thing here is Phil says that he's eight months post operation. I don't know who he's talking about, but he says the prof did my lateral partial knee resurfacing, and it's been fantastic.

David Barrett

Oh, tell him I love him. And that's really interesting. He says that because so I'm very grateful for my insight, because the people are often very assertions. Are very cautious by lateral joints because

they are complex and difficult to do. But when they work, those guys are great. It's a very satisfying operation to do.

Steven Bruce

Yeah, so it's so far, on the basis of this evening, 100% record

David Barrett

for you. That's good. Yes,

Steven Bruce

we've had 460 people watching us this evening. I think it's a little bit low, but I suspect that is because, as we discussed before, it is the holiday season. I think, I think we're in August. It's very well. We are out of time, and lots of people will see this on recording as well. Really, kind of you to come up here and give us your time. Thank you very much indeed.

David Barrett

It's pleasure. To come. Thanks so much.