

# The Health Report

[on ABC Radio National](#)

19 January 2009

## **The knee files - part two**

This is part two of a two-part feature about knees and the most common form of arthritis, osteoarthritis.

In this part we look at surgery. What kinds of knee operations are there? Should you have a knee joint replacement, and if so, how do you choose your surgeon and your new joint? A consumer's guide to the facts about knee surgery for advanced osteoarthritis.

This two-part feature is presented by Associate Professor Alex Barratt from the School of Public Health, Sydney University.

This program is a repeat and was first broadcast on 11th February, 2008.

### **Transcript**

This transcript was typed from a recording of the program. The ABC cannot guarantee its complete accuracy because of the possibility of mishearing and occasional difficulty in identifying speakers.

**Norman Swan:** Welcome to the program. Today on the Health Report the second of a two part series on your knees and osteoarthritis. By the time you get to 50, far off I know for you, but one day you'll get there, there will be a 50% chance that you'll have knee aches and pains but don't despair there are plenty of treatment choices, some of which might even work.

Last week our own expert in evidence based medicine Associate Professor Alex Barratt looked at first-line treatments including lifestyle and the latest medications. This week it's all about the knife. If your knees are so bad that you're thinking about surgery today's program is essential listening. In it Alex is looking at the main surgical choices for osteoarthritis of the knee.

**Alex Barratt:** Last week's program looked at some of the myths in osteoarthritis. Like the one that exercising too much can wear out your knees, in fact it turns out that exercise actually helps prevent knee problems and it's an effective treatment too. We also looked at drug treatments like glucosamine and hyaluronan. When tested in randomised trials these newer drugs do work and so far at least they appear to be safer than the older drugs as well.

In this week's program we'll look at what the surgeons have to offer for osteoarthritis of the knees. Broadly speaking there are three main options. First there's arthroscopy with a bit of a wash out and trim down. Second there are operations to improve the biomechanics of the knees. These include osteotomy, which improves the alignment of the knee and cartilage cell implantation which aims to restore normal knee biology. Finally, there's the big gun of knee joint replacement.

But let's start with arthroscopy. If you heard my previous series on evidence based medicine you might remember Cheryl.

**Cheryl:** I started playing bowls about 18 months ago and the arthritis just flared up so I thought I want to get it fixed because I feel that I'm not that old, I want to play bowls and I'm a nurse and I still wanted to do nursing and I wanted to do all the things that I want to do.

**Alex Barratt:** So you've got this arthritis, it's interfering with your life so you went to the doctor and the doctor said ?

**Cheryl:** We are going to do an arthroscope and have a look at it, they would wash it out and see if there's any floating bone in there that's causing any of the pain and also to take the arthritis off the knee cap itself.

**Alex Barratt:** What no one told Cheryl was that this treatment had been tested in a randomised trial with people like her. The trial is a famous one, published in the *New England Journal of Medicine* in 2002. Patients were allocated randomly to receive the real surgery or sham surgery, in other words pretend surgery where patients had an anaesthetic and an incision to look like surgery was done but no actual surgery on the knee. The group who had the real surgery did no better in terms of pain or function. Let's go back to Cheryl.

So you went into hospital and then what happened?

**Cheryl:** I had day surgery, I had two weeks off work with it to let it settle back down again and then I found that I couldn't step up a step or the knee couldn't take the impact of the step any more. The pain just didn't go away, it wasn't probably as bad but out of 100% it was probably 80% there, and when I played bowls again it hurt more than it did before. And they said that sometimes it works and sometimes it doesn't.

**Alex Barratt:** And that was the first time you'd heard that maybe it wouldn't work?

**Cheryl:** Yep.

**Alex Barratt:** That was Cheryl and her story illustrates that arthroscopic lavage and debridement doesn't really help people with simple arthritis. Dr David Parker is an orthopaedic surgeon with a special interest in knee surgery. Here's his view about that trial and the use of arthroscopy.

**David Parker:** That study led to a perception that anybody who has arthritis should not be having an arthroscopy. I think a more valid interpretation is that if people have arthritis as the main source of their symptoms then an arthroscopy would not be beneficial. However, a very common scenario is people who have mild to moderate arthritis, they have a meniscus tear that gives them acute symptoms or they have a loose body in their knee, you can remove that arthroscopically and relieve the majority of their symptoms as long as they understand they may have some residual pain from their arthritis but they will be improved. If you perceive that their main problem is arthritis then they're really not a role for arthroscopy to simply clean out the joint so to speak.

**Alex Barratt:** Dr David Parker an orthopaedic surgeon with a special interest in knee surgery. As I mentioned before there are a couple of other surgical options which you might consider before signing up for a new joint. One that's been around for some time is called osteotomy. It's specifically designed for people who have malalignment in their knees. Dr Parker again.

**David Parker:** People will often be predisposed to arthritis from their weight, their age but also if any mal-alignment that they have will tend to put more weight in one part of their knee and that would tend to preferentially wear out leaving the other side of the knee relatively unaffected. The most common scenario is that people who are varus or bow legged which tends to concentrate the weight towards the inner aspect of the knee and they will often develop arthritis in that side. And what we can do is by cutting the bone we can put a wedge in to realign the leg, so we take them from being slightly bow legged to more knock kneed.

The principle behind that is that we've taken the weight off the arthritic area which serves two purposes, one is that it usually relieves their pain but by doing that you've redistributed the load so you slow down the progression of the arthritis.

**Alex Barratt:** Has there been a trial like that, a trial for arthroscopy, for osteotomy?

**David Parker:** It doesn't really lend itself to a randomised trial. The question is what would you compare it to? The common comparison that people make is results for osteotomy to the results for joint replacement and they will say oh, the joint replacements are lasting longer and the osteotomy doesn't last as long. It's really a poor comparison because osteotomies are generally done on people who are younger, more active and are doing a lot more with their knee. Whereas joint replacements are being done on much older people who have a much lower demand so it's a very unfair comparison. If you compare it to the way they were before the osteotomy, well over 90% note a significant improvement in their pain and their function.

**Alex Barratt:** Dr David Parker describing knee osteotomy. As well as osteotomy there's a newish operation called cartilage cell implantation. This operation was developed for people who have a small area of knee cartilage damage from an injury and the idea is to try and patch it up by implanting cells which you hope will grow and cover over the damaged area; a bit like planting new grass on a damaged lawn. As you'll hear, more recently surgeons have been trying cartilage cell implantation to repair the large scale cartilage damage that occurs in people with osteoarthritis.

**David Parker:** The principle behind it is that cells are taken, usually via an arthroscopic procedure and then over a period of about four to six weeks they can be grown and then they're sent back to you impregnated on a membrane that you can then implant to the defect on the knee joint.

**Alex Barratt:** So it's like having one of those blood transfusions where you give your own blood in advance and then they give it back to you?

**David Parker:** To a certain extent but this is where they take a small sample of cartilage cells and then they grow them up to the appropriate size. So for example if somebody has had an injury to their knee, they've damaged let's say a twenty cent size piece in the joint surface and the rest of the knee is normal and so you can theoretically implant that area, restore a more normal surface and get the knee back to a good level of function. We're moving now towards trying to resurface bigger areas and myself and my colleague are doing a study now where when we do an osteotomy on somebody who does have bone on bone arthritis we correct their alignment and we are implanting some cells.

**Alex Barratt:** You do the osteotomy to correct the alignment of the knee?

**David Parker:** Yes.

**Alex Barratt:** And then you also do this implantation to try to get the cartilage to grow back?

**David Parker:** Yes, and if we can demonstrate that you can restore articular cartilage in an arthritic knee then that's obviously is a big advance. This is the nirvana of arthritis treatment, trying to get the knee back to normal as compared to admitting that you can't do that and you cut the joint surfaces out and replace it with a metal and plastic prosthesis which has excellent results but it still is not a normal knee.

**Alex Barratt:** Dr David Parker, a Sydney based orthopaedic surgeon. These techniques just might in the future offer a real alternative to knee joint replacement and have the advantage of letting you keep your own anatomy in place. But for many people the decision is going to come down to 'are you ready or not for a new knee joint'. It's a big decision so how do you know if you've reached that point? Dr Parker.

**David Parker:** It's the end of the road, it's what you have done when all other options have been exhausted and there are questions that we ask patients about their pain, their disability, their quality of life. And also to what extent they've had relief from non-surgical treatment. When patients feel that they've exhausted all of those options and their pain and disability is unacceptable and has an unacceptable effect on their quality of life, that is the appropriate time to have a knee replacement. You can leave it too long and compromise your results, if you have increasing stiffness before your surgery it's harder to get the movement back afterwards. The longer you leave it the more muscle wasting and disuse you have, the more problems you have with your gait and also of course the older people get the more morbidity they can have with the actual surgical procedure and the anaesthetic. So there are all those things to consider.

**Alex Barratt:** And if you decide to go ahead there are even more decisions. Just like buying a new car there are lots of variables to consider, most importantly, which surgeon, which operation and which prosthesis or replacement joint. In the rest of the program I'll look at these questions, right now I'd like to introduce you to Doris whose description of her knee joint replacement will give you an idea of what you can expect if you do decide to go ahead.

Five weeks before I spoke to her she'd had her knee joint replaced.

**Doris:** You get a little walking frame and they get you up the next day after you have had the operation which is a bit hard. The second day you are ready to go and have a shower and on the third day I think I started with the crutches and then you have to learn to walk stairs and I didn't find that difficult at all. After three weeks I was already able to walk without the crutches in the house, slowly of course, I wasn't going to run.

**Alex Barratt:** Do you think it's been worth having?

**Doris:** Oh yes, definitely, it's wonderful. I mean it is a big thing but I also realised I couldn't go on because you know the few years you have left, I'm going to be 74 in a few weeks time and my husband is 83 so we must hurry on.

**Alex Barratt:** So what sort of things are you going to be doing now that you couldn't do before?

**Doris:** I can go shopping, I haven't been shopping into any bigger store for at least 6 or 8 months and my husband always says jokingly we've saved a lot of money. Just even window shopping is enough for me and that was out of the question.

**Alex Barratt:** Doris describing her experience with knee joint replacement. So let's assume you want to go ahead, you're going to need information and a good source of it is the National Joint Replacement registry. The registry compiles data on all joint replacement surgery done in Australia, it's a comprehensive source because all orthopaedic surgeons who do joint replacements contribute their results to the registry. All the data are publicly accessible on the net so it's invaluable when it comes to choosing your prosthesis. More on that later because first we need to choose a surgeon. One thing is to consider is the experience of the surgeon in doing knee joint replacements. Professor Stephen Graves is the Director of the Australian Orthopaedic Association National Joint Replacement Registry.

**Stephen Graves:** We are pretty lucky in Australia because most surgeons undertaking joint replacements actually do quite a large number. The minimum number that most joint replacement surgeons do a year is around about 50 or so, so that means they are doing one a week and if we contrast that to someone like the US 70% of joint replacements that are undertaken in the US are done by surgeons who do ten or less. However, it's a little bit more complex than that because there seem to be joint replacements, joint replacement prostheses that seem to get outstanding results no matter how experienced the surgeon is so those prostheses must have characteristics that are actually quite forgiving.

**Alex Barratt:** What's a lot, if most people are doing one a week, what would be someone who's doing a lot of them doing?

**Stephen Graves:** There are some that are doing up to 250 a year but that is relatively unusual. The vast majority of surgeons are doing between 50 and 150 replacements a year.

**Alex Barratt:** And what about these well performing prostheses, are they identified on the registry reports too?

**Stephen Graves:** Yes, they are.

**Alex Barratt:** Professor Stephen Graves, director of the National Joint Replacement Registry.

More on those different sorts of prostheses in a minute. You're listening to the Health Report on ABC Radio National I'm Alex Barratt and this is a special program on the surgical options for knee osteoarthritis.

Like Professor Graves, Dr Parker agrees it's the surgeon more than the prosthesis that's the first decision. I asked him if he was having a knee joint replacement how he'd go about choosing his surgeon.

**David Parker:** I don't think there is any merit in saying who is the best person, I think there are a number of surgeons who can technically do surgery perfectly well and do a good job. I think the most critical things are that they can take the time to assess someone properly, you have to have someone who you are comfortable talking to, and you feel has explained things to you well and who you think is going to look after you well. What I would probably do is choose my surgeon before I choose my prosthesis, there are many prostheses on the market and we all have the ones that we like and we all have our reasons for liking them but I think you would rather have a very good surgeon using an ordinary prosthesis than the opposite.

A good prosthesis cannot make up for inadequate surgical technique and I think that's the important thing. And there are a number of things with the technique that are improving now and we are using computer navigation is becoming more routine, I think that does increase the accuracy of the surgery, we are making the incisions smaller and less traumatic and we

have much better methods of pain relief after. We are trying to make it a better experience for the patient.

**Alex Barratt:** What does computer navigation do for you?

**David Parker:** We know that one of the things that's critical to the success of the knee replacement is the alignment that you achieve, and to put it simply how straight you make the leg and also how well balanced it is. So in other words the knee can go from being fully straight to being fully bent and have the same degree of tension throughout it so it's easier for people to get their movement back and it's straight when you look at it from the front because that achieves even forces across the knee replacement and tends not to wear out one part of it quicker than the other.

So when we do it with our old fashioned jigs we can usually get very good results but the computer we find very useful in guiding the surgery and also giving us feedback on the movement and the balancing.

**Alex Barratt:** So basically it allows you to make sure that you put the prosthesis in the best possible position?

**David Parker:** Yes. The use of computer navigation for knee replacement surgery has gone from a few percentages of surgeons a few years ago to getting on for 20%.

**Alex Barratt:** Dr David Parker. Before we get into the detail of which prosthesis to choose you also need to consider the type of operation, either a total or a partial joint replacement. Most people have a total knee replacement which is where the whole joint is replaced but you can have a partial knee replacement where only one side of the joint is replaced, usually the inner side of the knee or what's called the medial compartment. These operations are also called uni compartment knee replacements. You might choose that if your arthritis is only affecting one part of your knee. The choice is important because it will affect how long your replacement joint is likely to last before it needs to be replaced, or in the surgical lingo, revised.

The "revision rate" is the percentage of people who need their knee joint replacement re-done. Revision rates are quite low but they vary depending on how old you are, how hard you've used your prosthesis once it's in place, and they're higher for partial knee joints than they are for total knee joint replacement. Professor Graves.

**Stephen Graves:** 96% of people who have had a knee replacement haven't had it touched by five years and what we generally tell patients is that we would anticipate that the vast majority of new replacements would last ten years or more and it would seem that about 90% of people are still OK at ten years.

**Alex Barratt:** How does that compare with hip replacements?

**Stephen Graves:** It's about the same but it depends on the category of the replacement. For instance uni compartment knee replacements or partial knee replacements tend to be revised much more frequently than a total knee replacement and a total knee replacement in an older person say someone who is over 70 - 75, their five year revision rates are less than 2%.

**Alex Barratt:** Are the revision rates higher for younger people?

**Stephen Graves:** Yes they are and they are considerably higher.

**Alex Barratt:** So what would be the five year revision rate say among people under 55?

**Stephen Graves:** Under 55 it could be as high as 8% and for uni compartment replacement it could be up to 15%. But you've also got to remember that the patients that they are doing knee replacements on in this younger group are usually patients with really very, very significant problems with their knees so the patients have got to be aware that they run a higher risk of being revised early but the other factor is that because knee replacements wear out when a younger patient is done, it is almost certain that they will have to have that knee done again at some other time, because it got worn out.

**Alex Barratt:** What would be the maximum life that you might get out of your prosthesis?

**Stephen Graves:** Knee replacements fail in the long term because they wear out so it's directly related to your activity. If you're someone who is 65 or older you can have a knee replacement and you can have a very good expectation that you are unlikely to have that knee replacement done again. If you're under 55 you would have the reversed expectation that you would need this knee replacement done again, it would wear out more quickly, largely because younger people work the knee replacement harder than older people.

**Alex Barratt:** Professor Stephen Graves, director of the National Joint Replacement Registry. So keeping all that in mind you need to consider the prosthesis your surgeon is proposing to use. This is where the registry can really help you because as Professor Graves mentioned before the usage and the performance data for different prostheses are available from the registry reports which you can download from the registry web site.

**Stephen Graves:** With the registry, if people are interested in knowing what the general outcomes are there is actually a lay report which summarises those outcomes for people available publicly on the net.

**Alex Barratt:** So people could look up and see how the prosthesis that they are considering getting has performed?

**Stephen Graves:** Absolutely.

**Alex Barratt:** And are there some joint replacement prostheses that you just shouldn't use that are performing worse than others?

**Stephen Graves:** Well it's a very interesting question. There appear to be some knee replacements that work well in almost all situations and in almost all surgeons' hands. There are other knee replacements that seem to be, the result may well be dependent on the experience of the surgeon with that particular prosthesis, or there are other knee replacements that have been identified that just don't seem to work all that well in anyone's hands. And what happens with the registry data is that the surgeons are made aware of that information and when those prostheses are identified their use drops to almost nothing very quickly.

**Alex Barratt:** Professor Stephen Graves is Director of the National Joint Replacement Registry. Having the data about the performance of different prostheses is great but does it really impact on what surgeons do? Well anecdotally at least it does seem to. As you'll hear Dr Parker says that surgeons do watch the results of different prostheses on the registry web site.

**David Parker:** It is very honest, I mean we all contribute to it, we all put the data from all of the knee replacements and hip replacements that we do into it and then we look at the end of the year to see how they are performing. But it's very good at picking up prostheses that obviously have early failure and early problems.

**Alex Barratt:** And do you think it's successful at getting the prostheses that aren't so good out of the system?

**David Parker:** I think it is yes. I would imagine that every surgeon would study the registry and the first thing they would look at is the results of the prostheses they were using and if they saw a problem appearing then I think that would certainly make them question their usage of it. There was one particular prosthesis for example that was called a uni spacer which was heavily marketed so it could easily appeal to patients because all it involved was a simple incision and you inserted this disc of metal and I think the majority of the surgeons who looked at it could see that it was a bad idea. But it was still done and the failure rate was ridiculously high and that's an example of something that in light of joint replacement results could not possibly continue to be put on the market.

**Alex Barratt:** And are there any stand-out hot favourites that work really well?

**David Parker:** Oh I think there's a group of them that are all good. There's not one real winner, I think there are a number of implant companies and there are probably about four or five major players and I think all of those companies have good implants that perform well.

**Alex Barratt:** Dr David Parker an orthopaedic surgeon who specialises in knee joint surgery. If you want to look up the information on the different prostheses there's a link to the registry on the Health Report website. OK, so now you know what you want now how are you going to get it, will you go to a public hospital or do you have private health cover? It makes a difference, to illustrate let's meet Dawn, like Doris who you heard a few minutes ago Dawn had a spectacularly good result initially but there's a bit of a sting in the tail of her story.

**Dawn:** From the day they got me out of bed which I think was two days after the operation I was just able to get around in the hospital with the use of crutches and they had the problem of looking for me all the time because I'd take off to the kiosk, or I'd go and do the exercises by myself.

**Alex Barratt:** And how long did it take you to get dancing again?

**Dawn:** Six weeks.

**Alex Barratt:** So it really changed your life.

**Dawn:** Definitely so, it was absolutely fantastic.

**Alex Barratt:** And are you still dancing now?

**Dawn:** No dear, no.

**Alex Barratt:** How long do you think it was really good for?

**Dawn:** I think about 5 years it was really successful.



**Alex Barratt:** That was Dawn describing her knee joint replacement and as you heard she got about 5 years good use from it. But she's less than keen to have it revised partly because of what she experienced while waiting for her first operation. How long did you have to wait?

**Dawn:** 1995 until what - it was six years.

**Alex Barratt:** You had to wait for six years, you were on a surgical waiting list for 6 years?

**Dawn:** Yes.

**Alex Barratt:** Do you know why that was?

**Dawn:** Well I think it was the availability of having the surgeon or there was more important things, patients to be seen to.

**Alex Barratt:** Can I just ask you do you have private health insurance?

**Dawn:** No, unfortunately, I did have up until late '89 I think but then you know being on a senior's pension I wasn't able to afford it.

**Alex Barratt:** How much did your knee deteriorate between '95 and 2001?

**Dawn:** A great deal but I knew what the system was like so you know you just sort of have to grin and bear it unfortunately.

**Alex Barratt:** So choosing where to have your operation is important because waiting times vary widely. Professor Graves.

**Stephen Graves:** Most people who are having knee replacements throughout the country are done more quickly than that but there is certainly a percentage of patients that are waiting quite a long time for their replacements.

**Alex Barratt:** And most knee replacements actually happen in private hospitals.

**Stephen Graves:** That's right.

**Alex Barratt:** So what's going on do you think, is there rationing, is there some reason why people in public hospitals are having to wait so long?

**Stephen Graves:** Oh I think that the reason people are waiting in public hospitals for knee replacement is exactly the same reasons why they're waiting for other forms of surgery and that I don't think that anyone believes that public hospitals have been appropriately funded and it's a resource issue. And that is not so much the case within the private system. With an increasing number of people having moved to private health insurance there's been quite a significant shift to joint replacement being undertaken in private. Now that's not to say that the number of joint replacements in the public system haven't been increasing because they certainly have, but what has happened is that they haven't increased as fast as what's actually happened in the private sector.

**Alex Barratt:** Professor Stephen Graves, Director of the National Joint Replacement Registry. As he said the number of knee joint replacements being done each year has been going up rapidly. Last year over 33,000 knee joint replacements were done compared to about 15,000 ten years ago and the biggest increase has happened in private hospitals. If you choose a private hospital you'll be done quickly but it won't be cheap.

If you have it done in a private hospital how much will it cost you?

**Stephen Graves:** That varies, a very important part of the cost is the prosthesis cost and that's about a third of the price and for most knee replacements they vary somewhere between \$4000 and \$8000 and so what you can do is multiply that by three and that's around about the cost of having it done.

**Alex Barratt:** That was Professor Stephen Graves, Director of the Australian Orthopaedic Association National Joint Replacement Registry.

So you better start saving now if you're thinking of having a knee joint replacement any time soon. Going back to last week's program for a moment you will remember that exercise has been tested in randomised trials and shown to be effective in managing the pain and loss of function in knee arthritis. You might also remember in a previous program I mentioned a trial of stretching before and after exercise to see if it works as it's claimed to, to reduce injury and muscle soreness from exercise. There have already been a couple of trials of stretching and they found it didn't make any difference to injury rates. But these trials were done in young army recruits, no one knows whether stretching works in recreational athletes. Like you and me out on the weekends playing tennis or soccer in the park. So to test this out myself and colleagues at the University of Sydney are doing a trial of stretching before and after exercise.

As soon as the results are available we'll broadcast them here on the Health Report so you'll get the news hot off the presses.

**Norman Swan:** And of course some people believe there are stretching exercises which relieve knee pain, I certainly do. I'm Norman Swan and you've been listening to the second in a two part series on your knees by Professor Alex Barratt who's in the School of Public Health at the University of Sydney.

## **Guests**

**Dr David Parker**

Orthopaedic Surgeon Sydney

**Professor Stephen Graves**

Director Australian Orthopaedic Association National Joint Replacement Registry

**Cheryl, Doris and Dawn**

Patients

## **Further Information**

[\*\*Australian Orthopaedic Association National Joint Replacement Registry\*\*](#)

[\*\*Stretching Study\*\*](#)

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Norman Swan

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**Mon 8.30am**  
repeated Tuesday 12.30am

Presented by [Norman Swan](#)