ANTERIOR HIP REPLACEMENT
OKONOMOWOC MEMORIAL HOSPITAL
OKONOMOWOC, WISCONSIN
March 26, 2008

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ANNOUNCER: Welcome to Okonomowoc Memorial Hospital in Okonomowoc, Wisconsin. You're a few minutes away from a live anterior hip replacement to be performed by Dr. Matthew Bong and moderated by Dr. Scott Schneider. Anterior hip replacement can benefit patients by allowing a more rapid and comfortable recovery with possible reduced scarring. Patients can more freely bend their hip and bear the full weight of their body almost immediately following this state-of-the-art surgery. The anterior procedure is aided by a special operating table. The Hanna table allows the surgeon to take x-rays during the surgery as well as position and reposition the leg to best fit the hip socket, ball, and femur insert. OR-Live makes it easy for you to learn more. Just click on the "request information" button on your webcast screen and open the door to informed medical care. Now let's join the doctors.
00:01:07
SCOTT SCHNEIDER, MD: Good afternoon and welcome. Thank you for joining us today for our presentation of a live anterior hip replacement. We're coming to you from Okonomowoc Memorial Hospital in Okonomowoc, Wisconsin. Let me start out by giving a brief description of what we're going to be showing you today. And this is a novel approach to hip replacement. I think the best way to start is perhaps by describing a little bit of what we've done in the past in traditional hip replacements. So let me grab a model here. Traditionally, hip replacements have been done via a posterior approach, or coming through the back. Just looking at the model here, this is the front of the pelvis, the femur bone, or thigh bone. This is looking at the back of the pelvis. So typically, the hip replacements have been done with the patient lying on their side with an approach coming through the back of the hip. That has provided us excellent exposure to the cup, or the acetabulum, as well as excellent exposure to the femur to prepare the femur and to put in our implants. Now, one of the drawbacks of a posterior approach has been violating these structures in the back. There are a number of muscles that come from inside the pelvis, attach to the back of the femur. In addition to taking those off the back of the femur, we also have to incise the posterior capsule. And the concern with that has been the risk of dislocation. So dislocation is where the ball pops out of the socket.
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And so another approach that had been developed to, oh, I guess counteract that concern of the dislocation is what's called the lateral, or Harding approach. And what that is, again, traditionally with a patient laying on their side, so the hip up in the air, coming through the side of the hip joint, and taking off the front muscles, called the gluteus medius and gluteus minimums, anywhere from a half to two-thirds of these muscle groups. Now, the advantage of this is we did not -- we do not violate the posterior structure, so hopefully the risk of dislocation is less. But the concern is whether that muscle heals or not. I think it slows that patient's recovery. In addition to that, we have to protect the muscle group during the postoperative period, and if this doesn't heal, that can lead -- they can have what we call the painless limp, so the muscles are not any longer attached to the femur, and folks limp.

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So the anterior approach has been an idea to put together the advantages of these two approaches while hopefully negating the disadvantages of them. And what we do is the patient's supine, or laying on their back. We go through the front of the hip, and it's a muscle-sparing approach, so we don't cut any muscle, we don't take any muscle off the femur. And in addition to that, by coming through the front, obviously we're not disrupting the structures in the back of the hip. So I think we have the advantages of both those approaches where the muscle is preserved, so the rehabilitation is quicker. In addition to that, by not violating the posterior structures, our risk of dislocation is much lower, and because of that, we're able to let the patients go without any postoperative restrictions. And what I mean by the postoperative restrictions is typically with a posterior approach, the patients are asked not to bend their hip up past 90 degrees, bring their knee across the midline, or internally rotate their hip for fear of dislocating out the back while those posterior structures heal. In addition to that, some surgeons may have the patient wear -- utilize pillows between their leg or an abduction pillow between their leg while they sleep to avoid the dislocation.
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So that's just a brief synopsis. Obviously, we'll go into it much more as we go on here today. But I guess before we get to the juice of this, let's just introduce myself and the colleagues that are working with me today. My name's Scott Schneider. I'm an orthopedic surgeon here in Okonomowoc, in Waukesha, so serving the Waukesha county area. I'm locally born and bred, went to medical school here in Milwaukee, residency in Kansas City, and then further went on to a fellowship training, so an additional year of training of hip and knee replacement in Tampa, Florida. Our surgeon today is Dr. Matt Bong, also a native Wisconsin boy. Trained down in Medical College of Wisconsin and went to New York University in New York for his residency and then down to Carolinas Medical Center for a traumatology fellowship. And he is assisted today by Dr. Dan Holub, again, a native Wisconsin surgeon. He did his medical training down at Medical College of Wisconsin as well as his residency and then went to Auckland, New Zealand, so far away from our cold winters here, for a sports and knee fellowship. And we're part of a 12-man group called the Orthopaedic Associates of Wisconsin. We've been serving Waukesha County for greater than 40 years and providing care in nearly all aspects of orthopedics. We're all fellowship-trained in one specialty in another. So with that, if I could maybe dish this off to you, Matt, and if you could introduce the team that's working with you today and perhaps go over the x-rays and give the folks an idea of what we're treating today.
00:05:44
MATTHEW BONG, MD: Welcome. My name is Matt Bong. I'm going to be the operating surgeon today. Assisting me will be Dr. Dan Holub, one of my partners at Orthopaedic Associates of Wisconsin. Our surgical assistant will be Suzy today. Jen and Jan will be our nurses. Linda will be our surgical tech giving us instruments today. Janet will be running our C-arm. And Dr. Chesky will be our anesthesiologist, and he will be assisted by Joan. I'm going to walk over to the x-rays real quick. And we're going to discuss our patient. Our patient today is a 69-year-old female. These are her x-rays of her hip. This shows that she has some advanced arthritis and has lost all the joint space in the superior aspect of her acetabulum up top there. And this has led to some fairly disabling pain. We have tried nonoperative measures to control her pain and these have failed, and at this time she is wishing to undergo hip replacement, which is what we're going to do today.
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SCOTT SCHNEIDER, MD: Matt, could you -- before you leave the x-rays there, actually, could you maybe show us a little bit of templating and how you determine before surgery.
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MATTHEW BONG, MD: Sure. Before surgery, we have a series of templates that correspond to the implants we'll be putting in position. And you can see here we have a template of a

stem that I think we will be using today. That stem corresponds with the anatomy of the patient. As you can imagine, with varying size and shape people, we have a variety of different implant shapes that we have to employ. So not only the stem, but we have the cup, which I've drawn in in pencil here. So it does take some time preoperatively to plan the surgery.
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SCOTT SCHNEIDER, MD: Okay. So I guess a good point that Matt's made is that we have various options as far as implant size. We're able to fit the implant to the patient, and this provides us the best ability to provide an implant that's stable, will do the job that it needs to do. Now, if we could -- Matt, if we could go back to Matt again, and if you could orient us to how we're seeing the patient on the table there and perhaps outline where the incision is and some anatomical landmarks.
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MATTHEW BONG, MD: Okay. I'm standing to the patient's right. She is laying on her back, or what we call the supine position. Up towards the anesthesiologist is the patient's head. Her foot is down at this end covered with some sterile drape, and you can actually see her foot during the procedure. Maybe if we come in with the boom camera, we can show some landmarks here. This is the crest of her pelvis that curves back this way. And this is her thigh bone heading down in this direction. And based on anatomic landmarks, we draw about a 10-centimeter incision right here. So again --
00:08:36
SCOTT SCHNEIDER, MD: Matt, could you just point out to people where the outside of the thigh is, where the groin is, just to again give us -- and where the head is, just with this close-up view?
00:08:45
MATTHEW BONG, MD: I'm running my hand right now on the outside of her thigh. Here's the point of your hip that you can sometimes feel on the outside part of your hip. The crest of her pelvis runs up this way. And her groin is right in here.
00:08:56
SCOTT SCHNEIDER, MD: Now, is that going to be a pretty typical incision that you have, size-wise?
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MATTHEW BONG, MD: Yes. It's usually about 10 centimeters, and that's what we've measured out. That's about 4 inches. I think we can -- I think we can proceed now. The first we'll be cutting through the skin and the subcutaneous fat.
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SCOTT SCHNEIDER, MD: And coming from the front, what advantages have you seen as far as the incision? I guess what I'm going for is maybe give a little description of what you've seen with different body habituses and the depth of that incision and the ease in which that incision can be made with different size people.
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MATTHEW BONG, MD: Well, the nice thing about this approach is that it's a part of the body that has a tendency to have very little fat. And as you'll see, we get down to the muscle quite quickly. This is all the subcutaneous fat that's normally encountered. And even in some obese patients, they actually don't have as much fat here as you would see on the posterior aspect or the lateral side or the side of the hip.
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SCOTT SCHNEIDER, MD: And I would agree that that's been my experience as well is that really almost regardless of the size of the patient, this approach is very simple: very easy to find their landmarks, very easy to find and locate the tissues deep that we need to determine to find our appropriate muscle interval. And just to talk as he's preparing this to get to the muscle interval, where this is different than a posterior approach or a lateral approach is we're going through an intermuscular plane, or an internervous plane. So we're

not cutting through muscles, we're actually moving muscles out of the way to expose the hip joint. In fact, it's -- as Joel Matta, who's really been the gentleman who taught us how to do these, he would say that this is the easiest approach to the hip, and I would have to agree. As you go through that first muscle envelope that he's now incising, we give access to the hip joint quite readily. And Matt, could you just describe a little bit what you're cutting through and what we're seeing there anatomically?
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MATTHEW BONG, MD: Sure. This is the fascia, or enveloping envelope, of the muscle. And what we've done is we've peeled it off the underlying muscle. This is the underlying muscle here. This is the fascia. And by coming through here, believe it or not, we're basically down to the hip joint. We have to move one muscle out of the way, which is this tensor muscle here. We pull it to the side, and my finger is right on the front part of the hip. Can we have a hips, please?
00:11:33
SCOTT SCHNEIDER, MD: So a good point he's making there is that -- so the white tissue to the right of the screen there, that's the fascia. So that's an envelope around the muscle. It's almost like the casing of a brat. And all you Wisconsin folks out there can appreciate that. As he goes through that, the muscle belly's right there. We elevate that fascia off the muscle belly, move the muscle belly out of the way, and boom, we're right on top of the hip capsule. And so what you see Dr. Bong doing right now is he's placing some retractors around the neck of the femur. And let me grab a model to show you exactly what we're seeing. So as he's come through the front of the hip here, he's -- well, I guess, unfortunately, we don't have muscle on this, but that muscle comes from what we call the ASIS, which is the portion of your pelvic bone that you can feel. So he's pulled that muscle out of the way and he's coming down directly on the anterior, or the front of the hip capsule. The retractors you see -- those are the metal objects -- one is around the medial aspect of the neck and the other is around the lateral aspect of the neck, and that will give us excellent visualization of the hip capsule. If we could maybe go back to Matt and he can describe what we're doing at this stage in the game.
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MATTHEW BONG, MD: Right now we found some little perforating vessels that are very consistently found in this location. We're cauterizing them and we're going to cut them.
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SCOTT SCHNEIDER, MD: Matt, do you find those are pretty consistently in the same location and pretty easy to localize?
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MATTHEW BONG, MD: Yes.
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SCOTT SCHNEIDER, MD: And I think this is a very important step for us where we're able to minimize any bleeding. Now, granted, this would not be a significant amount of blood loss needing a transfusion, but it just makes the operating field drier, we can see better, and it's obviously a very good thing for us to see what we're doing when we're in there. And so as you ligate those vessels, Matt, what's the next step you're going to be proceeding with?
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MATTHEW BONG, MD: Well, what I've got now is after those vessels have been ligated, we have a very good view, if you can give me a [Frier] elevator I can show -- if you can see into the wound here, I'm having some difficult seeing the [boons].
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SCOTT SCHNEIDER, MD: Would if be helpful to use the laparoscopic camera at this point?
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MATTHEW BONG, MD: I think it might be at this point. Maybe we can switch over to that camera. Okay. Now, it might be a little shaky, but in here you can see this retractor up here, which I'm pointing to, this retractor there on either side of the neck of the femur. And

perhaps after I'm done explaining this, Scott can show you what that looks like on the model. I know it's a little difficult to see. But what we're going to do is we're going to open the capsule right here, which is the thick covering over the joint. When that's open, we should be inside the joint and you'll be able to see bone.
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SCOTT SCHNEIDER, MD: Okay. Well, how about you come back to me and I'll show you what he's talking about. So again, what we're seeing is this hip capsule right here. So his retractor -- again, one was underneath in what we call the medial neck. The other was over the lateral neck. And so this capsular tissue, this is really essential. What the capsule is, is a sac around the joint. It encompasses the joint, it holds in the joint fluid, and we need to get through that to get to the hip joint. And what you'll see is, as he does what we call a capsulotomy, he'll take that electrocautery, which is essentially like a thermal knife, go down through the capsule, take it down along what we call the intertrochanteric ridge as well as over what's called the shoulder of the trochanter, and that will give us an excellent view of the hip joint. And if you're at that point, Matt, maybe show them what we're talking about.
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MATTHEW BONG, MD: So right now you can see here this is the incision that I'm making in the joint. And once we have this reflected out of the way, you'll be able to see the bone much more clearly.
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SCOTT SCHNEIDER, MD: Yeah, I have a great picture of that with that laparoscopic camera.
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MATTHEW BONG, MD: Can I have a stitch, please? So we're going to put a stitch in this capsule.
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SCOTT SCHNEIDER, MD: So what he's doing is he's now split that capsule in a T-like fashion and he's putting sutures in. It's just more than anything to tag it so he can move them out of the way. He'll then see the retractors go inside, and again, we'll see an excellent view of the hip. And this, again, as we discussed earlier, and I think this reiterates it, is that this is a very easy exposure of the hip. Minimal blood loss at this point in the game, and it gives excellent access so we can do the work. So you're just still putting the stitches in there, Matt?
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MATTHEW BONG, MD: Yeah.
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SCOTT SCHNEIDER, MD: Well, let me show you some models just to kind of give you a little preview of what he's going to be doing next. So again, looking at the femur, what we're doing is removing the entirety of the femoral heads. And I'll show you a pelvis here, all these come in left. So the pelvis with the hip joint there. What he'll do at the next stage is we'll do what we call the femoral neck osteotomy. He'll cut the neck, and that will then remove the ball, femur will be moved out of the way, and this will give us access to the acetabulum. And typically, he'll expose and prepare the acetabulum first. So again, the acetabulum's the cup. There's going to be worn-out cartilage in that area that we'll need to remove. And as we get along in the operation, we'll show you some of the equipment we use to remove that cartilage. The idea with the reaming is in removing that cartilage, as we get down to bleeding bone, we're able to put in a press-fit implant. And actually, maybe while he's doing this I can show you some of our implant choices and what we're able to provide for folks. And so let me just kind of get that a little closer to the camera. And so it's a press-fit cup. So this is made with cobalt chrome. There you go. So it's cobalt chrome with a roughened surface. And this roughened surface -- okay, you can go ahead and pan out there. The roughened surface, what that allows for us to do is we actually just wedge the prosthesis into the cup, or into the acetabulum. Over time that -- let me back up. I guess

initially we get excellent stability by wedging that in. We use a reamer, which is what we see here. It's again, our little Wisconsin innuendo here, it looks like kind of a cheese grater on steroids there. And what it does is when we get into the acetabulum -- so again, looking at the cup there -- we have it on a handle and he's going to grind that away. So it grinds away any residual cartilage, gets down through some of the residual subchondral. So subchondral bone is the bone right beneath the cartilage. Get to a bleeding bed. And once that's shaped and bleeding to what we feel is an adequate amount, or an adequate degree, he's then able to impact this prosthesis in.
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So the prosthesis is initially wedged, and over time the bone will grow into it. As far as liner choices, unfortunately, I don't have a polyethylene liner, but in the past, these hips have been -- we've primarily used polyethylene as the acetabular liner, and that's where the ball articulates. And here we have a metal liner, but just to give you an idea of what I'm talking about. So we have the cup, and inside here is a metal liner. So again, in the past we used polyethylene. The concerns with -- you can pan up to me. The concerns with the polyethylene is that over time it would wear, and when it would wear it would kick up debris. And this wear debris will then cause a process called osteolysis. This osteolysis would lead to erosion of the bone around the prosthesis and that would often lead to the prosthesis failing. So over time we've come up with a number of different bearings, or hard-on-hard surfaces. And the idea with these hard-on-hard surfaces is that the wear characteristics are much better. Hopefully that increases our longevity and hopefully decreases our risk of osteolysis. The options that we have available to us today, we still have traditional polyethylene. We also have something called cross-linked polyethylene, which still is the plastic, but better plastic. The wear is less, the wear debris is less. Another option is what we'll be using today and what I think Matt and I have probably used more routinely than anything else is the metal liner. And so this is just the liner of the acetabulum. Again, cobalt chrome, highly polished. That is going to then articulate with the metal ball. The advantage with the metal articulation is that, again, the wear characteristic is much better, less wear than the polyethylene. Also, it allows us and even encourages us to use a larger ball. That larger ball is going to aid us in stability, it's going to aid us in range of motion. And the third bearing surface that we have available is a ceramic. Now, the ceramic has had some bad press in the past. There's been concerns of fractures and bursts of the polyethylene. But these -- I'm sorry, bursts and fractures of the ceramic. However, our hope is that some of the new ceramics are stronger, more resilient, and won't have those concerns. So Matt, are you at a point that we can do the osteotomy?
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MATTHEW BONG, MD: Yeah, I'm just cleaning a little off of the rim of the acetabulum here. Okay. What I'd like to do is I'd like to bring in the x-ray machine.
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SCOTT SCHNEIDER, MD: Matt, is there any way you could get a little bitter exposure medially so we can see that hip? Maybe that small Holman you have going in? I think that's better. And maybe a little squirt would help wash out some of the blood so we can see.
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MATTHEW BONG, MD: Irrigation bulb. Hold that right there.
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SCOTT SCHNEIDER, MD: Then if you're able --
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MATTHEW BONG, MD: And then I can kind of orientate people before we make this cut.
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SCOTT SCHNEIDER, MD: I guess while he's -- Matt, I'm going to answer a question while you're -- let me know when you're ready to make the osteotomy so we can bring it back to you. But the question I have here is, when the joint fascia is ruptured, how does that affect the patient postoperatively in their mobility? Now, I guess I'm not quite understanding --

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MATTHEW BONG, MD: When the joint what?
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SCOTT SCHNEIDER, MD: When the joint fascia. Now, I'm not sure if they're referring to the joint capsular or perhaps the fascia over the tensor, but essentially, how does that affect the patient postoperatively in their mobility. And I'll go ahead and answer this one while you're doing what you're doing. Now, really, the disruption of the fascia over the tensor I think will have no effect postoperatively. We're not disrupting the muscle; this is just a compartment that encases the muscle. So the muscle itself is intact and still functional. Now, with regards to the joint capsule, the joint capsule does have -- or especially anteriorly has what's called the Y ligament of Bigelow. It's this very stout ligament on the front of the hip. But going through that, I don't think we're affecting the function of the hip at all nor the mobility, for that matter. And again, that is one of the advantages of this approach is we're not violating the muscle, I believe the posterior capsule, or joint capsule, is more important than the anterior capsule with regards to stability, and that's I think one of the advantages of this approach is that people are able to get up, they're able to get going much quicker than we're seeing with the traditional hip replacements. So Matt, are you at a point where we can show the osteotomy?
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MATTHEW BONG, MD: Well, what I'm going to do is I'm going to mark it quickly.
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SCOTT SCHNEIDER, MD: So what Dr. Bong is doing right now is he's using some x-ray to determine where he's going to make that femoral -- [audio drops out 00:22:56 to 00:22:59]. And so as you can see there, he has the cautery with the x-ray showing the level of his cut, and that's based on his template. And that's going to be important with regards to our leg length and our offset and hopefully re-create what he's templated on the preoperative x-ray. [Audio drops 00:23:21 to 00:23:23] the question that I'll go ahead and answer while you're still working, Matt. But the question is, with such a small incision, how are you able to bring the femur out to work on it? And that -- and actually, we're stealing a little thunder there. We have that coming up. What it is, it's really the specialty. It's the table that allows us to do this. This table is a Hanna table. It's developed by OSI, and I believe Dr. Matta also had a hand in helping design it, if not a major role. And what it does is it allows us -- and there's a picture of the table for you. The legs are on two mobile spars, and that will allow us to position the hip and position the leg in space. And the anterior approach, our approach to the acetabulum is actually very easy. The exposure you get of it, or the visual you get of it is excellent. And the trouble with the anterior approach has been that of exposing the femur. And it's been difficult to mobilize the femur. And this table -- and again, I think we'll show it a little bit when we get more down that road so as not to interrupt what Matt's doing, but we have a hook that goes behind the femur. And actually, I think I have one over here I can show you. Are you ready for me, Matt?
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MATTHEW BONG, MD: Yeah, I think that we're going to be ready here in a second to do our cut.
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SCOTT SCHNEIDER, MD: Well, then I -- we'll hold off on that hook until we get to that part. That way we can kind of show my hook as well as what you're doing with it on the patient. So what he's doing now is he's taking that skid and he's taking it around the femoral head in hopes of ligating what's called the ligamentum teres, and that is a ligament that actually is coming from the inside of the acetabulum. And perhaps if you could come back to me and I'll show folks where that's coming from. So again, looking at the acetabulum, or the cup, on end, the ligamentum teres -- trying to follow myself in the camera here -- comes from the center of the fovea. And that actually then comes out to the femoral head and it provides some blood supply to the femoral head. And so if we could go back to Matt, what

he did with that skid is he put it around the head with hopes of ligating, or transecting, that ligament to help with dislocation of the head and removal of the head. So Matt, at this point could you maybe tell people what you're proceeding with here?
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MATTHEW BONG, MD: Yeah. What we're about to do is we're about to do our cut in the femoral neck. I've marked that on x-ray over here. And our cut is going to proceed across the neck here. After that's cut, I'll remove the head.
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SCOTT SCHNEIDER, MD: Matt, can I interrupt you real quick?
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MATTHEW BONG, MD: Sure.
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SCOTT SCHNEIDER, MD: Is there a way you could adjust your retractors? We're having a hard time seeing medially. Kind of where that suture's coming out of the wound.
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MATTHEW BONG, MD: Give me the bent Hohmann. I think part of it is the positioning of our camera here. We'll try to get the best view possible.
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SCOTT SCHNEIDER, MD: We needed to tape it to your head, didn't we?
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MATTHEW BONG, MD: Yes.
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SCOTT SCHNEIDER, MD: And maybe even a little bit more inferior. Is there a potential -- could you use the laparoscopic camera maybe?
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MATTHEW BONG, MD: Yes. We'll use that during this portion. You can see it? Okay.
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SCOTT SCHNEIDER, MD: All right. We're getting the message from mission control that our view is fine.
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MATTHEW BONG, MD: Okay. All right, so here's going to be our cut right across here. And this is the head in the acetabulum. The femur bone runs down here, and I'm going to make the cut now.
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SCOTT SCHNEIDER, MD: Okay. So what he's going to do here is the head is -- go ahead, Matt, and I'll just talk while you're doing it. The head is to the right side of your screen. I'm sorry, the head of the femur and the groin is to the right side of the screen. The outside of the thigh is to the left of your screen. And so what he's doing is he's doing that osteotomy, so using the saw to cut through the neck to remove the arthritic ball. Now, he'll take some care here to avoid injuring a structure in the back called the greater trochanter, and we'll show that to you a little later. And as he gets through the bone -- and I guess this is one aspect I want to touch on when we talk about minimally invasive surgery. And I would have you look at this and try to convince me that this is minimally invasive. We're still using saws and hammers and pretty ugly-looking instruments to get the work done. And I think the minimally invasive aspect of this surgery, if you want to call it that, is really what we do under the skin in sparing the muscle. By not cutting the muscle, not cutting the posterior structures, I think that really has a positive effect on how patients are able to rehabilitate postoperatively.
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And it's -- I guess while he's doing this, I'll perhaps take another question. And the question, and this is a good one, is everyone a candidate for the anterior approach or are there contraindications? Now, by and large, most patients will be excellent candidates for the anterior approach. Folks that I think we should probably avoid are those who have any

significant previous trauma to the hip or they may have some bad deformity of the femoral head or the acetabulum. And that's simply because I think this exposure is an extensile, meaning to go through a lot of scar, to go through a lot of previous surgical fields may be difficult to get our exposure. And unlike the traditional approaches, the lateral and the posterior approach, we're able to make that incision bigger and get more extensive with our releases to get into the hip. So deformity is one. I think there should be some caution in very osteoporotic bone. Though I'll tell you, I think we have -- both Matt and I have done some patients that are well into their 80s with some soft bone, and I think it more than anything just takes caution on our part. Another concern is a very overweight patient. And a concern I would have is with that pannus, or kind of the fatty tissue on the abdomen, overlying the skin crease in the groin or where the incision is --
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MATTHEW BONG, MD: Hey, Scott?
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SCOTT SCHNEIDER, MD: Yes, sir.
MATTHEW BONG, MD: I think we're going to get to the point now where we're going to dislocate the head. I'm going to ask Jen to externally rotate the femur and I'm going to [refrain from] moving the legs of the table basically to position the patient's leg differently. Take this, please. This sometimes can take a little bit of force.
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SCOTT SCHNEIDER, MD: Dan, can you describe what that thing is coming out of her femoral head?
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DAN HOLUB, MD: Right. Dr. Bong drilled a hole in the femoral head and put what we call a corkscrew in there, and it's a kind of a tapered screw type device and it gives him good leverage where he can actually pull and twist and maneuver until the femoral head pops out.
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SCOTT SCHNEIDER, MD: Okay. Which, as I'm sure Matt and both Dan could comment on, this sometimes is not the most fun part of the case. That head can be somewhat of a stubborn son of a gun getting it out.
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MATTHEW BONG, MD: It can be.
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SCOTT SCHNEIDER, MD: So while you're doing that, I'll finish answering my question. So again, we have a little bit of concern with folks that are very overweight. And more than anything, it's not access to the hip, it's not actually performing the procedure itself. I think that's still quite simple and straightforward. But it's more an issue for me with the wound healing afterwards. And okay, I'll cut back to you there, Dan.
00:30:59
MATTHEW BONG, MD: Yeah, we've got it out. We can show people this head. Um, got a good look at it here. This is the head. Right now Dan is holding up on the ligamentum, which is a ligamentous structure, also has some minor blood supply to the femoral head that attaches to the acetabulum. I don't know if -- it's somewhat difficult to see because of the shine on the light here, but you can see that this head is worn away. There's very little to no cartilage. It's very -- you can hear that. It makes a solid noise as opposed to a soft noise. A lot of what we call bone spurs, or osteophytes, on the head. So this is a very diseased head. I'll bring the hip to 45 degrees of --
00:31:47
SCOTT SCHNEIDER, MD: So where are you going at this point?
00:31:50
MATTHEW BONG, MD: At this point we're going to head into the acetabulum to do -- and you can relax all traction. We're going to prepare our acetabulum at this time.
00:31:59

SCOTT SCHNEIDER, MD: Okay. And again, while he's getting that prepared, just to remind everybody, again, I think sometimes as docs, and I think you've probably seen in your own doctors' offices, we sometimes forget you guys may not know exactly the structures we're talking about. So the acetabulum, again, is the socket. So he's removed the femoral head. This has provided him access to the socket, or the acetabulum, where he's going to now prepare that to put in the prosthesis. And what you'll see, again, is those reamers that I showed you. And perhaps I can get a handle to put it on here. Whoop.
00:32:35
MATTHEW BONG, MD: Dr. Holub and I have now switched positions. We have a very good view of the hip socket. I think that if we go in here with the arthroscopic camera -- this is the hip socket, and we'll irrigate that out. Can I have a [Frier]? And this is some of the labrum, or cartilage tissue, which we will be removing. Here's the socket in here.
00:33:04
SCOTT SCHNEIDER, MD: If I could interrupt, could you wipe? There's a water drop on the camera.
00:33:07
MATTHEW BONG, MD: Oh, okay.
00:33:11
SCOTT SCHNEIDER, MD: It was a great view, it just had the water obscuring it.
00:33:16
MATTHEW BONG, MD: Okay, can I have the long knife and the pickups. And what I'm going to do is I'm going to start clearing out some of the soft tissue around the rim of the socket.
00:33:28
SCOTT SCHNEIDER, MD: And so the socket that you're seeing, that is going to be that white material at the base of the wound is the acetabulum. And so what he's doing now is he's removing, again, some of the soft tissue from the periphery from the cup. And this really is again more for access to the cup, allows him to ream and not get caught up on the soft tissue. And just to orient us, the top of the screen is the front of the -- or is the belly of the patient. The bottom of the screen is the buttocks. Again, the patient is lying flag on their back just so we can orient everybody to what we're seeing there.
00:34:10
MATTHEW BONG, MD: Can I have the Bovie? I'm now going to take some of the soft tissues out of the middle, or what we call the pulvinar region. Those soft tissues cover the wall, or the inside wall, of the acetabulum. And by taking these out, we can get a good visualization of where we need to put our socket component.
00:34:32
SCOTT SCHNEIDER, MD: Now, why is that important to see that medial wall?
00:34:36
MATTHEW BONG, MD: Well, I mean, ideally when we template and when we implant this, we want the implant to be as medial as possible up against that medial wall. That allows for better coverage and also provides for a consistent place for seating of the component. In most patients, that shouldn't be a problem. In some patients with some bad deformities in their hip socket, it might be more of an issue.
00:35:02
SCOTT SCHNEIDER, MD: Now, you look like you've been able to expose his acetabulum pretty easily. Is this a pretty typical exposure for you?
00:35:09
MATTHEW BONG, MD: I think this one is -- the acetabulum doesn't tend to be -- or the hip socket doesn't tend to be the problem. It's usually the femur is more difficult. But this seems pretty straightforward. Okay, what we're going to do now is we're going to start the reaming process. Actually take these out. And we'll -- I like to do this under x-ray. So if we can bring in the x-ray machine.
00:35:38

SCOTT SCHNEIDER, MD: Okay, so what you're seeing in the wound right now is that little apparatus I showed you earlier, and maybe we can kind of show everybody what we're looking at now. It's loaded on a power gun. But this is the reamer. So again, kind of a real aggressive cheese grater that has cutting edges. It's going to cut into the bone.
00:35:56
MATTHEW BONG, MD: Yeah, we'll use the arthroscopic camera. Do you want to put that in there, Dan, and people can get a view? Okay, x-ray. [Audio drops] -- try to medialize, or put the cup in as far as we can. So we've put it in a little bit of an abnormal angle. [Audio drops.]
00:36:20
SCOTT SCHNEIDER, MD: So as you can see, as he's [audio drops] -- cartilage to shape our acetabulum. Our acetabulums are not hemispherical or a perfect hemosphere, though our prosthesis is, so Matt's essentially shaping her acetabulum to accept the appropriate size component. And again, what -- Matt, maybe I didn't hear, but did you touch on why you're using the [audio drops]?
00:36:53
MATTHEW BONG, MD: -- use the x-ray because I like to ream in the orientation of where I'm eventually putting my cup. X-ray.
00:36:59
SCOTT SCHNEIDER, MD: And I think this is a good time to add a particular point -- [audio drops] particular advantage of it is with the patient supine, or lying on their back, it makes doing x-rays doing very easy. In addition to that, it's radiolucent, meaning we can x-ray through it. And this is very important just in that it helps us confirm our component position, our component orientation, as well as size intraoperatively, so there's no surprises in the recovery room. And I think that's been an excellent -- [audio drops] -- with this approach. So you can see there on the x-ray, you see the reamer. You can see how he's trying to manipulate his position -- [audio drops]. Do you feel like you end up using a lot of x-ray with these cases? [Audio drops.]
00:37:55
MATTHEW BONG, MD: It just depends on my feeling and how things look. But I guess my feeling is that if I've got the technology to make this as perfect as possible --
00:38:05
SCOTT SCHNEIDER, MD: Go that route. You've got to.
00:38:07
MATTHEW BONG, MD: Yeah. X-ray. [Audio drops.]
00:38:09
SCOTT SCHNEIDER, MD: -- a little bit when we get to the femoral component, but these reamers are actually -- there's different sizes. And you can see the little 4 and the 7 on there when he stops, so that's a 47 mm reamer. And he'll increase that size of reamer by about 2 mm each time until he feels he has an excellent purchase around the periphery of the cup -- or around the periphery of the acetabulum. And that's what's going to provide us excellent stability just from impacting the prosthesis.
00:38:38
MATTHEW BONG, MD: I think we have room to do one more.
00:38:39
SCOTT SCHNEIDER, MD: Well, while he's doing his -- oh, kind of finalizing his reaming, let me answer a few more questions. One of which is, why the spacesuits versus the mask and goggles? Well, that -- personally, I like to use them because, number one, it's -- [audio drops]. And as you'll see -- [audio drops] with the impacting or the using of the tools and whatnot, there can be some blood spatters. So that protects us -- [audio drops] exposure, but I think it also adds -- [audio drop] too. I mean, we are what you call shedders. [Audio drop] millions of bacteria you shed per minute or hour. I can't -- can't quote me on that. I can't quite remember the numbers. [Audio drop] my concern. Because that spacesuit is

sterile in its entirety. His face is sterile, his head is sterile, and so I have less concern about shedding bacteria into the wound and causing an infection. I think it's just a nice step I know Matt and I like to use to help prevent infection. Now, granted, I'll admit a lot of surgeons don't use them, and I think that's not inappropriate. I don't think there's been the literature to support using the spacesuits as a true prevention of infection. So that's why we use them. You're at a point where you're putting in a trial, Matt? [Audio drops.] Can you explain to folks what you're doing right now, Matt?
00:40:16
MATTHEW BONG, MD: Yeah. Can we -- [audio drops]
00:40:24
SCOTT SCHNEIDER, MD: So what he has there is he has a trial prosthesis. And Dan, maybe you can explain a little bit what he's trying to accomplish there with the trial.
00:40:34
DAN HOLUB, MD: Yeah, he's just reamed the socket up to 49 mm. And this is a trial to approximate the size of the eventual cup that he's going to put in. Just want to make sure that this gives a good snug fit, and it does. And he's wiggling it right now and it seems to grab the bone of the acetabulum. And that gives us a good idea that when we put the real cup in, it's going to stay where we put it.
00:41:01
SCOTT SCHNEIDER, MD: Now, is that the same size as the prosthesis?
00:41:03
MATTHEW BONG, MD: It's 1 mm below. So if we get a good fit with this, we can be fairly 50 -- 100 -- we can be fairly well assured that this will have a good fit with the true prosthesis.
00:41:20
DAN HOLUB, MD: We try to -- excuse me -- underream slightly and make the opening a little bit smaller than the real prosthesis that's going in. And that's how we get what we call a press fit, or a really tight fit.
00:41:34
SCOTT SCHNEIDER, MD: I think to follow that up, Dan, I have a question here that I hope maybe you can answer for us. But it says, what are the pluses and minuses of a screw holding the acetabulum in place? And do you typically use it, and if you do, when do you usually employ the use of a screw?
00:41:50
DAN HOLUB, MD: Well, several cups that we use have a solid back, meaning they don't have holes in them, so those are the ones that we intend not to use screws with, obviously. Some have prefabricated screw holes in different directions and different angles, and that -- we use that sometimes when the quality of the bone isn't quite as good as it seems to be today. What that does is it gives a couple anchoring points for that cup where the screws will hold it additionally tight, and that will allow the body to grow into it in the position that we implanted.
00:42:22
SCOTT SCHNEIDER, MD: Okay. And Dan, if I could interrupt you, Matt, could you maybe go to the arthroscopic camera?
00:42:30
MATTHEW BONG, MD: Yeah, [audio drops] started here.
00:42:34
SCOTT SCHNEIDER, MD: Okay. Can you just describe to people what you're looking for and what you're seeing there with your x-rays as you impact this prosthesis?
00:42:41
MATTHEW BONG, MD: What I'm trying to do is I'm trying to accomplish this component [audio drops]. X-ray. And that orientation is [audio drops] and about 20 degrees aversion. And you might be able to show them that on the mon-- [audio drops].
00:43:01

SCOTT SCHNEIDER, MD: Show them what you're talking about. Guys, if you could bring the camera on me maybe and I can show them -- okay. And so what he's talking about is really the orientation of the component in the pelvis. And so let me just bring the pelvis up like this. This is looking head-on. And so the inclination is how much this acetabular component is tilted. So that's vertical, that's horizontal. And so what he's going for is approximately about 45 degrees of inclination or abduction. This is really what's found to be the best for the wear characteristics of the bearing. In addition to that, the stability of the hip. Now, the other aspect he's looking at is [eversion]. And probably the best way to look at this is from the top. So this is how the cup is tilted from anterior to posterior. And what he's going for is, oh, anywhere from 15 to 25 degrees of anteversion. And so if this is zero anteversion, so vertical -- so back of the pelvis, front of the pelvis. We're tipping towards the front to approximately 15 degrees. Now, where you get into trouble is if you're too retroverted, the hip will pop out the back, too anteverted, it'll pop out the front. So the component position is vital to our stability. Despite the approach we use, the component position needs to be quite accurate, and that's where his x-rays are really coming in handy. What he's doing is using, oh, something that's been determined on x-ray to represent the adequate anteversion [audio drops] -- x-ray where that opening is where it's not quite as dense. That's showing us appropriate anteversion. And then --
00:44:47
MATTHEW BONG, MD: Well, we're going to put in the arthroscopic -- [audio drops] that, if we go to that. This is our cup in here. We can look through here and it just shows that we're down solidly to bone. So we're well positioned on x-ray and our cup is down. So if we can go back to the regular camera now.
00:45:11
SCOTT SCHNEIDER, MD: And so what's that you're putting in now, Matt?
00:45:12
MATTHEW BONG, MD: This is the liner. The first part that we put in is the shell, which is what fits into the bone. The liner allows the hip kind of a -- Frier --
00:45:27
DAN HOLUB, MD: To have a nice smooth surface.
00:45:28
MATTHEW BONG, MD: Yes. It provides the bearing surface for the actual hip replacement. Can I have a tamp?
00:45:35
SCOTT SCHNEIDER, MD: And when do you -- Dan, maybe you can comment on this. How do you decided which bearing surface you use, and who do you feel is a good candidate for metal versus the polyethylene? And do you ever employ the use of ceramics?
00:45:48
DAN HOLUB, MD: Traditionally, the polyethylene liners, lately I've been trying not to use them in really young people. Although the polyethylene liners have improved greatly just in the molecular structure of them, we still try to put the metal bearing surfaces and possibly ceramic bearing surfaces in younger people that might be more active. Machinery can only take so many millions of cycles before it wears out. Metal and ceramic surfaces may have some longevity benefits over the polyethylene liners. So younger people, more active people tend to get the harder bearing surfaces.
00:46:26
SCOTT SCHNEIDER, MD: Is there anyone you wouldn't put a metal liner in?
00:46:31
DAN HOLUB, MD: Oh, well.
00:46:33
SCOTT SCHNEIDER, MD: I guess that's kind of a loaded question.
00:46:34

DAN HOLUB, MD: Women of childbearing age probably shouldn't have a metal bearing surface. Is that what you're getting at?
00:46:40
SCOTT SCHNEIDER, MD: Yeah, that's what I was getting at. Sorry, loaded question.
00:46:44
DAN HOLUB, MD: I'm not taking my boards today, Scott. I already did that.
00:46:47
SCOTT SCHNEIDER, MD: I gotcha. Yeah, I can show them. If you could bring the camera back towards me, I'll show the metal bearing. And so what we're seeing here, this is the liner that he's inserting. And what it does is we have the acetabular component here. You can see this is one with some holes in it if any screws are needed. And then this will -- no, this doesn't fit this shell. Lovely. Maybe this one does. They're size-specific. So that fits into the shell. And actually, much like everything else we're doing here today, we impact it in. There's what's called a [Morris] taper, and that holds the shell in place. And then to coincide with that is going to be a metal ball that will articulate, and we'll show that in conjunction with the prosthesis in a little bit. Now, Matt, what size liner were you able to use?
00:47:40
MATTHEW BONG, MD: This is going to be a 36 liner.
00:47:44
SCOTT SCHNEIDER, MD: Okay. And if you could just comment a little bit on the advantages of the larger liner that you've seen.
00:47:49
MATTHEW BONG, MD: Well, I think that it provides increased stability, for one, and it may have some improved wear characteristics. Let's take the suction tip thing and put it on here, the inserter.
00:48:05
SCOTT SCHNEIDER, MD: And so what he's doing here is just insuring that that liner is appropriately impacted into the acetabular component. It takes a little bit of wrangling to get it seated exactly correct. And so what he was getting to with the diameters of the acetabular liners is as we get a larger cup, we can do a larger ball. And the advantage of that larger ball is that it's going to have better stability. And things we're looking at, why is that the case. And really, simply put, it's just harder to get a bigger ball out of a bigger socket. It's what we call a jump distance. And so it's harder to pop that ball out. In addition to that, and I'll show you, this is not necessarily the femoral prosthesis we're using today but something that we call the head-neck ratio. And so as we're able to put in a larger ball, there's a larger clearance for this neck. And what that provides us, or what that keeps us from doing is impinging on the acetabular component and essentially levering the ball out of the socket. So as you can see, much larger ball, a much greater range of motion than we'd see with a smaller ball. So we have more motion until we impinge on the neck. And in fact, as we get a larger ball, the impingement's not going to happen at the prosthesis but is more going to happen at the interface with bone. And let me show you this. This is a model of a total hip in place. And so with these larger balls, rather than the neck infringing on the prosthesis, the bone's going to hit bone. So we have an anatomical impingement. And so that has really been an advantage of using the larger balls, and these hard-on-hard bearings have actually made that possible. Now, that being said, in addition to the stability with a larger metal ball, the thought is that the bigger ball even has less wear. Now, we are able to use larger balls with the cross-linked polyethylene. That's going to be very surgeon-specific. Some surgeons, it makes them a little nervous because that polyethylene can get very thin, and there's a concern with increased cross-linking of the polyethylene that the durability or the brittleness of the polyethylene can get worse, and so the needle strength is lower, meaning that polyethylene can fracture and cause a failure of the bearing. Maybe we can go back to Matt and he can explain what he's doing at this juncture.
00:50:37

MATTHEW BONG, MD: Yeah, we're just -- can I have the impactor one more time? To get these liners in, they have to be absolutely perfect. It looks like we are. Can I have a [Frier]?
00:50:50
SCOTT SCHNEIDER, MD: Then maybe I can take a few more questions while you're doing that. So a question I have here is does the Hanna table help in getting the implant leg -- so the implanted or the operated leg -- the same length as the other leg? And I think that does help, and where that helps is just the fact that we're able to take live x-rays. And we'll see this a little bit later in the case, but what Matt will do is he'll get, based on his preoperative templating, will get the implants in at -- let me back up a little bit. He did that at his femoral neck osteotomy at predetermined level, so that's one tool we're using to help with our leg length. Using the radiographs, what he'll do after the trial implants are in place is to get an x-ray of the well hip, or the non-operated hip, along with an x-ray of the operated hip and have them be mirror images of each other so they're exactly the same picture. And then really, very simply, he'll overlay them, look at them, and make sure everything lines up appropriately. And I'll have to point it out to you on the x-ray, but perhaps I could show you on the model what he'll look for is -- I don't know if we can get you to see that very well, but the lesser trochanter and where that lines up in comparison to the other hip. So that's really where the table is able to help us get our leg length appropriate and equal. And also the offset. And I guess let me just take this opportunity to describe what that is, just in case we run out of a little time later. But that offset, that is essentially looking at how far off the greater trochanter is from the center of rotation, and perhaps I should show you it on the normal, or the full pelvis to get a true appreciation of it. And so as we're looking at the pelvis, we're looking at where the greater trochanter is in comparison to the midline of the body, or the center of rotation. So as you can imagine, as we increase or displace it laterally, we're increasing that offset. Or displacing it medially, or towards the inside, we're decreasing that offset. And why is that offset important? That offset is important because that is what tensions the muscles. I guess I'm putting this model away too quickly. The muscles to the hip are going to be coming to the brim of the pelvis along the wall of what we call the ilium. They're going to go and attach to the greater trochanter as well as those short external -- I got it backwards. This is the left hip, went in the right. Here we go. So as well as the short external rotators in the back. And so as we get further away with that hip -- or closer with that hip, we're changing the tension on that muscle. So by maintaining any native offset, hopefully we're maintaining the native tension of that muscle and the hip will feel more normal and rehabilitate quicker. Okay, are you ready for us, Matt?
00:53:38
MATTHEW BONG, MD: Yeah. We just had a little trouble getting -- you know, that liner has to fit absolutely perfectly in.
00:53:44
SCOTT SCHNEIDER, MD: Ah, the joys of live surgery, huh?
00:53:46
MATTHEW BONG, MD: Yeah. Okay, let's bring the leg down, take all traction off, traction off.
00:53:55
SCOTT SCHNEIDER, MD: Matt, before -- can I just have them come back to me, and I just want to show them that hook you're putting in. And so this is the hook he's putting around the femur. And what that is -- and that is a tool with the table, and this is another advantage with the table. And this goes back to that question earlier, how do we get the femur into view. And so this hook is going to go around the femur, he's going to drop the leg, externally rotate the leg and bring it across the midline a little bit. And that's just going to pop that femur up out of the wound and provide us the exposure to prepare the femur. And you can go back to Matt now and maybe show him the live action there.
00:54:34
MATTHEW BONG, MD: Can I have the Bovie, please? This could do a little more releasing of our capsule from before.

00:54:42
SCOTT SCHNEIDER, MD: Could you maybe go to the arthroscopic camera just to give us a look on the inside and maybe point out some anatomy for the folks at home?
00:54:50
MATTHEW BONG, MD: Okay. What we've got here is a little bloody right now. Let me just get our retractor positioned.
00:55:02
SCOTT SCHNEIDER, MD: While you're doing that, just to give people -- again, kind of reorient you on where we are on the screen, on the left is the hook, and that is coming from the outside the body, going around the posterior, or the back of the femur. There we go.
00:55:17
MATTHEW BONG, MD: Okay, and this is the femur right here.
00:55:18
SCOTT SCHNEIDER, MD: I think you need to bring it over the wound a little bit, into the wound a little bit better there.
00:55:24
DAN HOLUB, MD: Let me just clean it off.
00:55:25
SCOTT SCHNEIDER, MD: Okay. Thanks, Dan. All right, maybe we can try the arthroscopic camera again.
00:55:33
MATTHEW BONG, MD: Okay. So here is the femur. Now we've got a pretty decent position there. I'm going to try and elevate this up out of the wound.
00:55:44
SCOTT SCHNEIDER, MD: Now, do you do this primarily by hand or do you use the mechanical aspect of the table to bring that out of the wound?
00:55:51
MATTHEW BONG, MD: We use the table. Can I have the Hohmann retractor? Now, this retractor is going to be put on the other side of the trochanter. I'm just going to release a little more of our capsule here. Can I have a Hibbs, please?
00:56:06
SCOTT SCHNEIDER, MD: So when you're saying you're releasing, can you describe a little bit of what you're trying to accomplish?
00:56:09
MATTHEW BONG, MD: Yeah. Hibbs. What I'm doing is this capsule has a tendency to tether the femur in a position that makes it less accessible. And hopefully by releasing that capsule with the electric cautery here --
00:56:29
SCOTT SCHNEIDER, MD: And do you feel you have to do that on most patients or is that kind of --
00:56:31
MATTHEW BONG, MD: Yes.
00:56:33
SCOTT SCHNEIDER, MD: Okay.
00:56:33
MATTHEW BONG, MD: Well, the capsule we do.
SCOTT SCHNEIDER, MD: The capsule. Okay, I'm sorry. So you're not yet doing the external rotators.
00:56:36
MATTHEW BONG, MD: No, we're not releasing any muscle.
00:56:40
SCOTT SCHNEIDER, MD: And so just to describe what he's doing a little bit more, so that lateral capsule, so that capsule that, again, the joint sacked in the front, we've done that

capsulotomy to get into the hip. He has already elevated it off the front of the hip, or the anterior and medial aspect of the hip. And now he's just releasing it a little bit more laterally. We have better exposure of it with the femoral neck osteotomy or taking away the bone, better exposure to that by elevating it with the hook. And what it'll do when he releases that is allow the femur with a little bit more ease to pop out of the wound. That retractor that he's putting in there, are you putting that over the greater trochanter?
00:57:16
MATTHEW BONG, MD: I am. We have a little more capsule on the way here, which I'm going to -- pick up. Release.
00:57:24
SCOTT SCHNEIDER, MD: Okay. I think while you're doing that, maybe I can answer another question. The question is I have here is, "How soon can someone with mostly a sedentary job return to work after anterior hip replacement?" And that is very variable, actually. As far as my perspective and when do I feel it's safe to go back to work is really whenever patients are very comfortable. And what we've seen with this approach is the narcotic use seems to be less. In fact, Matt, do you still use a PCA at all or are you doing all oral narcotics?
00:57:55
MATTHEW BONG, MD: It's a patient-by-patient basis. It depends on, you know, how I feel their pain is going to be managed. But for the most part, no, people don't need to have a PCA.
00:58:06
SCOTT SCHNEIDER, MD: And that's been my experience as well. We've been using primarily oral narcotics with some intravenous Toradol, which is kind of like ibuprofen's big brother. But the pain control seems to be enhanced with this exposure, and I think part of that is just not cutting the muscle.
00:58:22
MATTHEW BONG, MD: Correct.
00:58:23
SCOTT SCHNEIDER, MD: In addition to that, maybe you can comment what you've experienced, but it seems as if patients are discarding the walker, discarding the cane, or any assistive device much quicker. So I think all that together is -- so to kind of get back to the question, getting back to a sedentary job, I wouldn't be surprised within a week or two. And maybe I'm being a little bit more optimistic about it than appropriate, but do you think that's a fair statement, Matt?
00:58:49
MATTHEW BONG, MD: I do. I think that -- you know, what we've seen is obviously pretty preliminary results for us, but I think that's been pretty well -- the sentiment has been echoed in other people doing it throughout the country. It just seems patients are doing better when they come in see us. They're quicker to return to work.
00:59:18
SCOTT SCHNEIDER, MD: Can I maybe interrupt you and have you -- it's just that you're at something I think people are going to want to explain exactly what you're doing there.
00:59:24
MATTHEW BONG, MD: What we're doing right now is we're broaching in the femoral component. And what a broaching is is gradually increasing the size of the femur to accept the stem. We don't glue in these components. These are actually press-fit in. So like the cup, they're pressed into the bone. And we use these broaches to impact the soft spongy bone on the inside and make a channel for the true stem.
00:59:59
SCOTT SCHNEIDER, MD: Now, Dan, maybe you could comment on just your preference. There was a question that came in, just the choice of cemented versus uncemented

implants and kind of how you pick which one, and do you think there's an advantage of one over the other?
01:00:13
DAN HOLUB, MD: Well, some surgeons press-fit everybody's components, some cement everybody's, but most of us probably mix and match a little bit. The younger, more active people that have healthy bone and good bone stock, maybe are not osteoporotic or don't have thinning of the bone are best served with a press-fit component, one that we impact into the bone. And the surfaces of these press-kit components have various porous surfaces that small bones, [picules] and scar tissue can grow into to stabilize the prosthesis in the bone. So generally, younger people get the press-fit components, maybe somebody 80 years old or somebody that's had a hip fracture that we have to put a partial hip replacement into to treat the hip fracture would get a cemented type of prosthesis. That allows for really quite immediate stability of the prosthesis in the bone and they're able to stand and walk and start taking care of themselves a little bit quicker perhaps in that situation.
01:01:15
SCOTT SCHNEIDER, MD: Okay. If I could maybe have the camera come back this way and I can show everybody a little bit on what he's doing with the broach. We have a broach handle here with a broach. So again, what he has here, and this comes on a handle, is the broach. And they're different sizes. And they increase in width as well as -- well, you know [unintelligible] mediolateral, so both width and length and diameter. And so what he's going to do is, as he's impacting this down into the bone, this is a little bit different than other broaches. And this is the [Karai] stem. It's made by DePuy. It's a little bit different than other broaches, where rather than removing bone that we're replacing with prosthesis, this is what's called impacting broaching. So these are not cutting teeth, but what they do is they jam the bone onto the walls of the femur and it gives us this nice solid base for the prosthesis to sit in. And again, we're going for immediate fixation with the press-fit and essentially wedging of the prosthesis into the bone. Long-term, the bone growing into the prosthesis. I think when we get into the implant placement, we'll show you what the real implant looks like. But again, they have increasing sizes, so we're matching the implant to the patient's femur.
01:02:33
MATTHEW BONG, MD: I'm just nibbling away a little excess bone here, nibbling away a little excess bone here. Can I have the calcar planer, please? What I'm doing is I'm just going to plane this down a little bit.
01:02:49
SCOTT SCHNEIDER, MD: And so what he's doing here is again just kind of shaping the bone to match the prosthesis. And that calcar planer, what it is is there's cutting teeth on the base of that, and it's shaving the top of the femur to allow our prosthesis to sit flush on the remaining cortical bone. And it has a collar, again, which we'll show you in a little bit. And maybe while you're doing that, Matt, I'll answer another question. And one of that is just discussing bilateral total hip replacement. And I think, and I'll go ahead and answer this one, I think that is an advantage of this approach. And the reason for that is, again, the table keeps patients supine, or on their back, and so we're not having, for example, to do a bilateral hip replacement. This is a simultaneous -- doing them at the same time -- of a posterolateral approach. My concerns are, one, to flip them, and then you're laying on this fresh wound, and number two, when they're laying on their side, they're dependent on their lung, meaning they're laying on one side of their chest and that lung is not inflating as well. And then to flip them over and put them on the other side, my concern would be they're not just a pulmonary issue. So again, I think that's why this table really facilitates doing bilaterals or supine. Pulmonary concerns aren't there. Now, who's a candidate for bilateral total hip replacement? Well, I think there are some risks with doing them both at the same time. It's two major operations simultaneously. There's going to be the concerns with blood

loss. I would extrapolate some of the data with simultaneous bilateral total knee replacements that there is an increased though still very low mortality risk with the simultaneous procedures, particularly with patients in the cardiopulmonary disease. Now, that being said, assuming medically the patient is ideal, what type of arthritic picture would be bilateral total hip replacement. And my impression or my opinion on that would be if the other hip is of enough severity and causing enough pain the rehabilitation of one hip would be significantly detrimented. Matt, do you have any comments, or Dan, on doing bilateral total hip replacements?
01:05:08
MATTHEW BONG, MD: Well, I guess one comment I would make is that obviously you spoke to, this approach lends itself nicely to bilateral total hip replacement. I think people have been hesitant in the past to do it through a standard approach, although that was being done, just because of the logistics of having to flip the patient over and approach the other side. So I think that --
01:05:34
SCOTT SCHNEIDER, MD: Your head's kind of in the way of the camera there, Matt, if you could maybe scoot it out.
01:05:38
MATTHEW BONG, MD: I think that this lends itself nicely to doing that. Again, it has to be the right patient. Not everyone is a candidate for having a bilateral total hip replacement, just like everyone is not a candidate to have a total hip replacement.
01:05:55
SCOTT SCHNEIDER, MD: Now, could you maybe just describe what you just did there. I probably should have interrupted you in the middle of it.
01:05:59
MATTHEW BONG, MD: What we're doing now is -- can I have the [Muehler]?
01:06:02
SCOTT SCHNEIDER, MD: And I'll grab a trial here.
01:06:03
MATTHEW BONG, MD: Hold this, please. We're putting on the trial head. The stem is in place. All these trials are completely modular so that we can trial various size heads, necks. And I just want to get this. Once we get this head on here, we'll be ready to --
01:06:22
SCOTT SCHNEIDER, MD: Okay. While you're doing that, if maybe you could bring the camera back my way and I'll show you what he's doing.
01:06:33
MATTHEW BONG, MD: Can you externally rotate a little bit, if you can? Good, good.
01:06:39
SCOTT SCHNEIDER, MD: There's a good view of the table. You can see that leg is now dropped down so they're extended. You can see at the foot. Dan, if you could maybe point out the foot there. Okay, we'll watch what Matt's doing. That's okay.
01:06:53
MATTHEW BONG, MD: What we're going to do now, Scott, is we're going to reduce the hip, meaning put it back in socket. And at this time we're going to be able to judge our lengths and compare it to the other hip. Can I have a head pusher, please? Bring the leg up.
01:07:09
SCOTT SCHNEIDER, MD: You can see when he brings that leg up how that femur kind of falls back into the wound, and you can see the advantage of using the table for this approach.
01:07:21
MATTHEW BONG, MD: And we're in. You can relax all traction.
01:07:25

DAN HOLUB, MD: Get a little view with the arthroscopic camera. You can see what that trial looks like in the top if I can switch to the arthroscopic camera. There you go. The green thing is the trial ball. You can put different size and different length balls attached to the stem, which is the silver thing down below. And you can see the edge of the cup. And this is a good view on the inside of the hip.
01:07:56
MATTHEW BONG, MD: Okay. What we're going to do now is we're going to shoot some corresponding x-rays of both hips, and this will allow us to judge our lengths. Push in. Okay. X-ray. Come south just a little bit towards the foot. Okay.
01:08:23
SCOTT SCHNEIDER, MD: Matt, could you maybe explain what you're trying to achieve with your x-rays?
01:08:27
MATTHEW BONG, MD: What I'm trying to do is I am trying to [audio drops] that we got. Okay, good. X-ray. [Audio drops] and then what we want to do obviously is we want to [audio drops] on the other hip.
01:08:46
DAN HOLUB, MD: We can take an x-ray and then flip it over and superimpose it on an x-ray of the opposite hip and make sure the femur relationship is similar to the pelvis in both of the hips.
01:08:58
SCOTT SCHNEIDER, MD: In addition to matching your leg length and your offset, what other things will you do to assess their stability and ensure that you're happy with where your prosthesis is.
01:09:09
MATTHEW BONG, MD: What we can do is we can actually do that now. [Audio drops] just to give people an idea of what we're talking about. We'll get that positioned in just a second. Suck in there. And what we can do is we can actually externally rotate the hip. Okay, we have a good view there. Now start externally rotating and call it out.
01:09:37
SCOTT SCHNEIDER, MD: And so what he's doing now is so that where this hip will be at risk for dislocation is in extension and external rotation, so they're externally rotating --
01:09:45
MATTHEW BONG, MD: And right now, Scott, we are 90 degrees externally rotated and the hip is still stable, so that's a good sign.
01:09:52
SCOTT SCHNEIDER, MD: So you're happy with that.
01:09:54
MATTHEW BONG, MD: Yeah, I'm very happy. Bring the x-ray to the other hip. Other side, yeah.
01:10:02
SCOTT SCHNEIDER, MD: So while he's doing that x-ray to the other side, if you can bring the camera back this way and I'll explain a little bit of the modularity he was talking about. So this is -- this is the trial prosthesis that he has in. There's different necks, neck geometries associated with this particular prosthesis. And actually with most prosthetics, there's variations in the geometry of the stem. And so what we're doing is he has the standard -- well, actually, I think he has the KLA neck, which is a little varus, but they're coxa vera. And then where we get some modularity in addition to the neck is in the head. And you can see how this -- there's a recess in the head. And as we -- there's different neck lengths, which essentially what that'll do is take this ball further and further away. And granted, this is a little bit extreme, but further and further away from the prosthesis. And what that does is increases the length, increases the offset. And you may wonder how we get changes in the leg length with a total hip replacement. Essentially what it is is again

having our normal femur here, or our Sawbones femur here. You can imagine the deeper we sink this prosthesis, the shorter the leg is going to be, versus if it's more proud, the longer that leg is going to be. And so really how high or how deep our prosthesis is in the bone as well as the head and the neck are going to change our leg length, change our offset, and that's where we get what we call our modularity, and we're able to really fine-tune your anatomy with hopes of regaining your native anatomy. And that's what Dr. Bong is doing right now with the x-rays, trying to get a mirror image of the other side. He's going to overlay those x-rays to get an idea if they match, if they look exactly the same, our offset's the same, our leg length's the same. He's already checked the stability, which is excellent, and that's going to be likely the component combination that he's going to want to employ for this patient. Can we maybe go back to Matt and see where we're sitting with the x-rays.
01:11:55
MATTHEW BONG, MD: Okay. What we're doing now is we're overlaying the x-rays. What we try and do is get symmetric views of the pelvis and overlay our bony landmarks.
01:12:12
SCOTT SCHNEIDER, MD: See, so simply, he's just -- it's like having two transparencies and just laying them over each other to get an idea of how we're doing with length and offset.
01:12:18
MATTHEW BONG, MD: And what we have is we do have somewhat of an increase on our offset, which is what we're going to have to correct, and that's the side to side translation. I would say that's about 5 to 7 mm, which I would like to be lessened. And then we also are a little bit long, so I think that the combination of possibly seating this prosthesis a little bit further and then going with a shorter neck should correct that. So we're going to do that.
01:12:49
SCOTT SCHNEIDER, MD: Okay. So what you see is he's obviously changing his gloves between the two because those pictures are not sterile. And so after we grab them, look at the radiographs, we change gloves, and you'll see him do that several times just to -- again, just to fine-tune the hip and get exactly what he wants. So at this point what are you doing again, Matt, if you could explain that?
01:13:12
MATTHEW BONG, MD: We're dislocating the hip so that we can -- I want to pound the broach down a little bit further, if possible. Okay, externally rotate. Okay. Bring the leg down.
01:13:28
SCOTT SCHNEIDER, MD: Well, maybe while you're doing that, I'll take this opportunity to show them the prosthesis that you're putting in. And so this is the prosthesis he's putting in. Again, it's a press-fit stem. It's coated with hydroxyapatite, which is -- the idea is that it will enhance the bony ingrowth. Again, where he was using that planar earlier is where this collar will sit, and that, again, helps with some of the axial stability, meaning how it pistons up and down in the femur. The idea is we get an excellent press fit, and I'm sure this isn't going to fit, but -- so that's not going to fit. So we get an excellent press fit just from the prosthesis itself, and then this is kind of belt and suspenders with the collar, and what that's going to do is rest on -- let me turn the bone like that -- it's going to rest on the bone right there to help keep this from it settling any further. So we have that for the prosthesis. I've shown you the acetabulum. Perhaps we can answer some more questions here. We talked about the bilateral hips. How you doing over there, Matt?
01:14:35
MATTHEW BONG, MD: Good.
01:14:36
SCOTT SCHNEIDER, MD: Okay. I'm running out of questions in here. So maybe we can talk a little bit about the postoperative expectations in the hospital. Typically, patients will be in the hospital anywhere from three to five -- or actually, probably two to four days is probably more appropriate. The median seems to be about three days. Again, we have not ourselves

done any long-term studies on this yet, but some other orthopedic surgeons who have been doing this much more extensively have looked at it. And what it appears to be is most folks are getting rid of any assisted device by about 14 days and all of them by six weeks, with perhaps a few outliers. Do you have another question there for me? No? Okay. Most folks it seems are going home after surgery. We do do -- there are risk of DVTs and pulmonary embolisms, which is a blood clot breaking off and going to the lung, after any hip replacement. And what we do for the anticoagulation for that is Matt and myself have been doing low molecular weight heparin shots in the hospital and then discharging the patients at home on aspirin only with use of some stockings and things of that nature to help prevent the DVT. Now, your surgeon may choose to use coumadin. Either way is probably appropriate. We have one question here. Is the surgical team present today a typical size? Typically what we'll use is we'll have the operating surgeon, we'll often have two scrub assistant, the surgical tech, and then the x-ray tech and the anesthesiologist will usually -- that usually involves the entirety of the operative team. So today with the filming of this, I think we're seeing a few more folks in there than usual walking around with the cameras and whatnot. So Matt, could we maybe go back to you and describe what you're doing at this point?
01:16:30
MATTHEW BONG, MD: What we're trying to do is we're trying to get this femoral head component off. It just caught on some soft tissue. There we go. And we're pulling that off now. And can I have the -- let's bring the femur all the way to the floor. Externally rotate. Yeah. And can I have the greater troch retractor?
01:17:07
SCOTT SCHNEIDER, MD: And so, Matt, I'm sorry. So have you seated the prosthesis a little more at this point?
01:17:13
MATTHEW BONG, MD: No, we're just taking out the trial now. Okay. Broach handle. And we're just going to try and seat this a little bit further. This is obviously somewhat of an art of not jamming this in too far and not breaking things you're not supposed to. But I think that we can seat this a little bit more.
01:17:46
SCOTT SCHNEIDER, MD: So are you going to stick with the same-sized trial there and just try to sink it into the bone a little bit further?
01:17:51
MATTHEW BONG, MD: Yeah. I have the same-sized trial, and then what we're going to do is we're just going to slightly augment the length of our neck.
01:18:00
SCOTT SCHNEIDER, MD: Okay. And I have a question here that maybe I can have Dan address. Typically, what are your thoughts on how long it takes the bone to adequately attach to the prosthesis?
01:18:13
DAN HOLUB, MD: Well, it used to be that after these press-fit hips, we didn't want anybody walking on it for about six weeks. Then we started seeing that the people that walked on them when we told them not to walk on it weren't doing any worse than the people that we made stay off of it. So I think the trend has been towards letting people bear immediate weight on these press-fit hips. It still probably takes several months for the bone to fully adhere to the prosthesis, but because there's some mechanical stability just based on the prosthesis being very tightly fit inside the canal of the femur and inside the cup, or the acetabulum, pretty comfortable letting people walk on these right away.
01:18:56
SCOTT SCHNEIDER, MD: Okay.
01:18:57
MATTHEW BONG, MD: Okay, can we go with that shorter neck length?

01:18:58
SCOTT SCHNEIDER, MD: And I have another question here just regarding the restrictions that a patient has after surgery, and I'll go ahead and answer that one. And really, there's -- unlike the traditional approaches, there's no precautions with regards to motion. The patient can put their hip anywhere in space. Activity-wise I think that's going to be a little surgeon dependent, more based on the ingrowth of the prosthesis. I personally ask people not to play golf or job or anything of that nature for about three months to let the prosthesis integrate. I don't know if you guys have any different thoughts on your activity level. Dan, do you change your activity for your press-fit stems for a period of time?
01:19:37
DAN HOLUB, MD: Yeah, I think -- well, traditionally with the posterior approach, we're kind of waiting on all of the ligaments in the back of the hip to stabilize more so than the bone to grow into the prosthesis. But I agree that several months of no vigorous activities would be most appropriate. Three sounds like a good number.
01:19:57
SCOTT SCHNEIDER, MD: Okay, sounds good. And then another question is what special training do the surgeons need to have. And you know, the experience that Matt and I had, and perhaps Dan's was a little bit different, is we did a learning center down in Chicago, an excellent learning center set up by our academy. And that was more didactics and some cadaver work. And then we had the honor of going out and visiting with Joel Matta in California, who's really been a pioneer in the United States with this approach. He's done, oh boy, at this point it's got to be well over 1,400, 1,500, something of that nature. Now, granted, I may be missing on that number. But again, the idea is we went and saw him and sat in with him on four procedures, four total hips, and that was invaluable in our education and our early experience with this approach. In addition to that, DePuy has been active with us in this approach and they've had [dropped audio] again, invaluable help just working through the beginning process of this and helping us with our technique and whatnot.

01:21:10
MATTHEW BONG, MD: X-ray. Okay, make the pelvis straight up and down. [Audio drops.]
01:21:16
SCOTT SCHNEIDER, MD: [How far] did you think you impacted that further?
01:21:22
MATTHEW BONG, MD: Probably, I'd say 3 millimeters or so. Okay, can you print that, please? And we're going to go check this one on the back board. And from there, I don't think we're going to do any more trialing. What we'll probably do is, depending on how this looks, we'll impact -- either try to impact it in. It's a pretty good fit with that impaction broaching. So if we can impact a little bit more, we'll take advantage of that to implant the final component.
01:21:53
SCOTT SCHNEIDER, MD: And another question that came across here is how long did this procedure typically take, and granted, I think every surgeon is a little bit different, but does this seem to be the pretty typical duration?
01:22:03
MATTHEW BONG, MD: This is pretty typical. We've had a couple little steps that have taken a little bit longer, things that don't usually take a little bit longer. But this is fairly typical. I can do -- you know, we've probably added 10 minutes or so to the case just in our explanation and such.
01:22:23
SCOTT SCHNEIDER, MD: So at this point, if your x-rays look great and you're satisfied with your leg length and your offset, what further steps do you have to go?
01:22:30

MATTHEW BONG, MD: The next step would be to implant the final component. We may alter the broaching some, but I don't think we're going to do much of that. I'm looking now here with the components with my anatomic landmarks lined up, you know, I think we have good restoration of our leg length within offset. I'm very pleased with how that looks.
01:22:58
SCOTT SCHNEIDER, MD: I think this is an excellent example of one of the advantages of this approach using the intraoperative radiographs. You can see he was able to note that his leg length was a little bit more than he wanted, his offset was not quite where he wanted it, and able to really fine-tune it to get it symmetric with the other side, and I think that's an excellent advantage. And that may add some time. And again, with this being a live surgery, there's always little SNAFUs that we have to work through doing surgery, and I think Matt's done an excellent job of doing that today. So Matt, are you pretty happy with what you have there?
01:23:30
MATTHEW BONG, MD: I'm very happy. I think that it's just time to implant the final components. Bring the leg down.
01:23:42
SCOTT SCHNEIDER, MD: And so at this point you take out the trial, put in the final component, and close your wound.
01:23:50
MATTHEW BONG, MD: Yeah, and that's it.
01:23:52
DAN HOLUB, MD: Want to open the real one?
01:23:53
MATTHEW BONG, MD: Yeah, let's open the real stem, please.
01:23:56
SCOTT SCHNEIDER, MD: Do you do anything special with your closure?
01:23:58
MATTHEW BONG, MD: No, I don't. I think with this particular approach I'm a little -- not that we're not meticulous with other approaches, but this particular approach I really like to spend a lot of time on the wound closure. In the front, the skin here sometimes seems to be a little less robust than in other places. Can I have the broach handle?
01:24:22
SCOTT SCHNEIDER, MD: Can you guys -- every once in a while your heads are kind of popping in the way of the camera. If you could ensure that you're keeping -- that's okay, just so we can see the beautiful prosthesis going on.
01:24:33
MATTHEW BONG, MD: And I am just going to impact this a touch more if I can. If it doesn't go, that's fine, but I think if we can just correct a couple more millimeters, that we're going to try to perfect it.
01:24:46
SCOTT SCHNEIDER, MD: One question that came, Matt, and I'm guessing this is another surgeon out in Washington. Are those offset handles? Do they come in right and left?
01:24:54
MATTHEW BONG, MD: They do. They come in right and left. And they actually have been very helpful. I've been very pleased. Calcar cleaner. We were before -- I think in this lady we probably could go with a standard, but with these offset handles, it really -- you get much less soft tissue impingement.
01:25:21
SCOTT SCHNEIDER, MD: And so you're just doing a little bit more fine-tuning?
01:25:23
MATTHEW BONG, MD: Just some fine-tuning to -- you know, we're here. Let's make it as perfect as possible. Okay. Broach handle.

01:25:35
SCOTT SCHNEIDER, MD: Now, Matt, are you typically using any physical therapy after surgery or are patients primarily doing home exercises and doing it mostly on their own?
01:25:43
MATTHEW BONG, MD: You know, we do physical therapy in the hospital, and a lot of that is for gait training, retraining people how to walk. But afterwards, I just kind of let people do their normal activities. And usually by two weeks, they're doing very well. I think the more active they are, the less therapy they're going to need.
01:26:06
SCOTT SCHNEIDER, MD: And do you have any thoughts about when most folks seem to be getting back to work?
01:26:11
MATTHEW BONG, MD: Yeah. I mean, obviously it depends on your job. I know we had a previous question about sedentary work. And I think if you have a relatively sedentary job, there are people at a couple weeks, two weeks, that would be able to go back. So we're all ready to go. I'm just going to give a little squirt in the canal.
01:26:32
SCOTT SCHNEIDER, MD: Now you have the final implant open and ready to go here.
01:26:35
MATTHEW BONG, MD: Yep. Put the retractor back in. All right. And we're using that, like you said before, the [Karai] stem.
01:26:47
SCOTT SCHNEIDER, MD: Could you maybe show that to the camera for us? There we go.
01:26:50
MATTHEW BONG, MD: And this is the stem right there. They've had very long-term results -- or excuse me, they've had long-term results with this in Europe, some very good results here in the United States. And it's a prosthesis that I didn't have much exposure to before I started doing the anterior approach, and I've been very pleased with the flexibility of the system.
01:27:15
SCOTT SCHNEIDER, MD: So you're just impacting that into place there.
01:27:19
MATTHEW BONG, MD: Correct.
01:27:20
SCOTT SCHNEIDER, MD: Is there a way that you know it's all the way down?
01:27:23
MATTHEW BONG, MD: Yeah, there is a -- as you can see here, there's a little flange, and that flange will hit the bone. And once it hits the bone, it should be all the way down. Sometimes it will actually stop a little bit before. Give me that offset one. And that's just because we have such a good cancellous.
01:27:48
SCOTT SCHNEIDER, MD: So as you can see, that's a pretty solid fit. It's taking some reasonable impacting to get that back down that envelope of bone that he's created to fit the prosthesis.
01:27:59
MATTHEW BONG, MD: And I think we're basically down. Got a couple more taps. Okay. We're going with the plus two.
01:28:09
SCOTT SCHNEIDER, MD: And if you could just show the head before you put it on, that would be great.
01:28:13
MATTHEW BONG, MD: And if you can see in here, you can see that this prosthesis is all the way down to bone, sitting in a nice position there. So what we're going to do now is we're

going to clean off the trunnion, or the neck of the prosthesis, and then we'll put that metal ball in there. And you can see that right here. Pretty shiny.
01:28:33
SCOTT SCHNEIDER, MD: And what's that made out of, Matt?
01:28:35
MATTHEW BONG, MD: It's cobalt chrome.
01:28:36
SCOTT SCHNEIDER, MD: Is that the same as the acetabulum?
01:28:39
MATTHEW BONG, MD: With the meeting acetabulum, yes. Okay, can I have the -- but the [shelf] is not. The shelf of the acetabulum is titanium.
01:28:49
SCOTT SCHNEIDER, MD: Matt, could you show that head just a little bit better?
01:28:50
MATTHEW BONG, MD: Sure.
01:28:53
SCOTT SCHNEIDER, MD: And perhaps after a -- okay, so there's the ball on top of the prosthesis. And then at this point you'll just go ahead and reduce it.
01:29:01
MATTHEW BONG, MD: Correct. And let the hook down.
01:29:05
SCOTT SCHNEIDER, MD: So, Matt, excellent job. That went fantastic.
01:29:10
MATTHEW BONG, MD: Yeah, I think there were a few points where we could have gone a little bit quicker, but I hope the people at home got a good sense of what we're doing. Why don't we go ahead and give a quick squirt into the socket.
01:29:20
SCOTT SCHNEIDER, MD: So at this point, folks, what he'll do is he'll reduce the hip.
01:29:25
MATTHEW BONG, MD: I'd like to thank everyone for coming. I appreciate it, and it was a pleasure showing this to you guys today.
01:29:33
SCOTT SCHNEIDER, MD: So thanks again for joining us. I hope this was educational for everyone. Really, the steps he's doing now is he's going to reduce the hip, wash it out and close up the wound, and then the patient will wake up and go to the recovery room. So again, thank you for joining us and please feel free to contact us if you have any questions regarding this procedure.
01:29:52
ANNOUNCER: Thank you for watching this anterior hip replacement surgery from Okonomowoc Memorial Hospital in Okonomowoc, Wisconsin. OR-Live makes it easy for you to learn more. Just click on the "request information" button on your webcast screen and open the door to informed medical care.
01:30:15
[end of webcast]