PERCUTANEOUS CORONARY INTERVENTION
ST. MARY'S DULUTH CLINIC HEART CENTER
DULUTH, MINNESOTA
December 18, 2007

00:00:08
NARRATOR: Welcome to St. Mary's Duluth Clinic Heart Center in Duluth, Minnesota. Today's presentation, a live webcast of a percutaneous coronary intervention will be performed by an SMDC interventional cardiologist and moderated by Dr. Michael Lucca and Dr. Kathleen Braddy.
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ALBERT DEIBELE III, MD, FACC, FSCAI: What we do is we put a large IV into the blood vessel of the leg and we then thread catheters up into the heart and we inject contrast and take x-ray pictures of the heart and its blood vessels, looking for troubles with blockages, as well as evaluating the strength of the heart.
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NARRATOR: After identifying affected arteries, the doctor takes steps to relieve the blockage.
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ALBERT DEIBELE III, MD, FACC, FSCAI: We use a device to open that blood vessel up. Typically what we'll do is we'll start opening it up with a balloon first and I'll…oftentimes we use a stent. That's a little mesh stainless steel tube that we implant in the coronary with the balloon. And we drive it into the walls of the blood vessel to prop that blood vessel open.
00:01:15
NARRATOR: Several related topics will also be discussed, including prevention, recovery and electrophysiological treatments. Now, lets' go ORLive.
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KIM KAISER: Good evening and thanks for joining us. You're watching a live surgical webcast that's featuring St. Mary's Duluth Clinic Heart Center. My name is Kim Kaiser. I work here at SMDC Health System and I'll be helping to guide us through a discussion today of a percutaneous coronary intervention. And, luckily, I'm joined by two experts who will help to explain what's going on and also answer questions from people who are viewing at home. I'm joined by Dr. Kathleen Braddy, also an interventional cardiologist here at the St. Mary's Duluth Clinic Heart Center. And Dr. Michael Lucca, one of our other interventional cardiologists here at St. Mary's Duluth Clinic Heart Center.
00:02:06
As I said, please feel free to e-mail in questions if you are interested about what's going on. And now is our opportunity to get into the cardiac cath lab, which is what we're really all here to see. I'd like to introduce you to Dr. Albert Deibele. Dr. Deibele?
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ALBERT DEIBELE III, MD, FACC, FSCAI: Good evening. I'm Albert Deibele, an interventional cardiologist. I'll be performing the procedure tonight. And I'll be assisted here by Brad Hart, an x-ray technologist. We have several technologists in the background – Sherri and John. And, Nancy will be our registered nurse; will be assisting us tonight in performing the procedure. What we will be doing initially is a diagnostic angiogram and

taking pictures of the blood vessel of the heart. To do that, we have catheters that we slide up through the IV that we've already put in the patient's femoral artery, or the blood vessel of the leg, and will be taking those up into the heart. Brad do you want to grab the catheter?
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And let's show them what a right coronary catheter looks like. Now that's what we'll be starting with tonight. And you can see that it has a special shape that's designed to seat in that particular coronary. And as we put the catheter up, we advance a wire out, initially. This is a very floppy wire, so that we don't injure the artery at all. And you can see it has a nice curve on the wire and it will guide us up to the coronary artery. So shall we get going?
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KIM KAISER: Now, Dr. Deibele, how much time has it taken for you to prepare the patient up until this point? Have they been in the cath lab for very long?
ALBERT DEIBELE III, MD, FACC, FSCAI: Typically, they'll be prepped and have the surgical area draped; and that takes probably fifteen to twenty minutes. And then, it will take me probably five to ten minutes to get this IV catheter in so that we can get going.
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KIM KAISER: All right. So we'll just watch and let you begin this first stage of the procedure.
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ALBERT DEIBELE III, MD, FACC, FSCAI: Okay, Brad, are you ready.
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KIM KAISER: Now, for all of us viewing at home, Dr. Braddy, I think it's kind of an amazing thing to think that this can guide up and just go exactly where it needs to go. How does…how much of that is the doctor, how much of that is just our anatomy? How do you…how do you get that catheter up to the heart without it going someplace it's not supposed to be?
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KATHLEEN BRADDY, MD, FACC: Our anatomy helps quite a bit. And so we're entering at the femoral artery, which is the main blood vessel going to the leg. And in the absence of significant disease in those leg arteries, that catheter should travel up, follow the big aorta up around and to the heart and then, again, the curve that Dr. Deibele showed on the catheter that he's going to place in the right coronary artery helps guide it. Dr. Deibele watches that under x-ray and actually knows where he's leading his catheter, and so that's what he does.
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KIM KAISER: Let's go back and see what Dr. Deibele is doing now.
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ALBERT DEIBELE III, MD, FACC, FSCAI: Okay, what we're doing right now, you can see our catheter and it's spinning into the coronary. And now we're seated in the coronary. The catheter is moving with the heart cycle. And, we're going to do the angiography in a newer method here. Typically, what we've done in the past is we have gotten many pictures of the coronaries, and we take these two dimensions. With a rotational angiography where we rotate our camera, we can get the angiogram done with many fewer pictures and we image the blood vessel in many, many planes, so that as we do that…We have to drop down here a little bit, Brad. Yeah, maybe just a hair more. Yep, that looks good.
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So that we can get an entire picture of what's going on with the coronaries. And that uses less contrast as well as radiation, so that makes it safer for the patient. I want to start LEO here. I want to set us on 3-D.

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KIM KAISER: Well, we'll let you continue working there, Dr. Deibele, while you're completing that part of the procedure. I'm curious to know…maybe you can talk a little bit about, Dr. Lucca, of what might bring someone in to the cath lab in the first place. Why would someone need this procedure?
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MICHAEL LUCCA, MD, FACC: Well, generally patients will develop chest pain. And usually when we see them in the office they're referred to us for chest pain, or patients will come into the emergency department with chest pain. Usually, when we see people we try and arrange for a stress test to see what area of their heart is at risk. If we find certain areas if the heart are at risk, then we can consider bringing them for angiography to find the blockages and then try and either fix them with interventional techniques that we use or consider bypass surgery, or even consider just placing them on more medications.
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KIM KAISER: Now, are there times when someone is not a candidate for this particular procedure, Dr. Braddy?
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KATHLEEN BRADDY, MD, FACC: Depending on other conditions the patient might have. If the patient is exceedingly old, and that is determined by each individual patient, so someone in their late nineties or even in their hundreds. We do this procedure on patients in their nineties, especially if they're function, moving around, living their full lives. Patients that have certain types of cancers or low blood counts are also patients that are at higher risk for this procedure.
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KIM KAISER: Well, let's go back into the cath lab right now and see where Dr. Deibele is at.
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ALBERT DEIBELE III, MD, FACC, FSCAI: Okay. Here we have our initial picture. This is of the right coronary. And you can see what this rotational angiography allows us to do. We see the blood vessel in many, many planes and it gives us a more accurate view of…of what's actually going on with the coronaries. And we can see that there are some…some little…little bumps there in the blood vessel, but there really aren't any tightened air rings at all. So now what we're going to do is we're going to bring this catheter out and we're going to get ready to do what we call a ventriculogram, and that's taking a picture of the pumping chamber of the heart.
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KIM KAISER: Dr. Deibele, we just had a question emailed in asking if there is a difference between catheters. Someone had noticed that you had mentioned that you were using the right coronary catheter before. Are you using a different one now?
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ALBERT DEIBELE III, MD, FACC, FSCAI: Yeah. Right now what we're going to use is what we call a pigtail catheter. And that is a catheter that's geared towards placing in the pumping chamber of the heart so that we can get a picture of that pumping chamber.
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KIM KAISER: Okay. We'll let you keep working. And we actually have also here, back in…in the moderator's room, a look at what one of these catheters would be. Not actually being used in a procedure, obviously, but I think that this helps to give folks an idea of what it's like. It's actually a very small device.

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KATHLEEN BRADDY, MD, FACC: Um hmm. This catheter is actually shaped differently the one…than the one Dr. Deibele was holding up. And I'm trying to have it here in my hand. This catheter is a left coronary catheter and it is shaped to be able to access the left coronary artery, which Dr. Deibele will be showing us in a few moments for the

interventional portion of this procedure. And so catheters are shaped differently to help access the different arteries that we're going to take a look at today.
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KIM KAISER: What are you looking at now, Dr. Deibele?
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ALBERT DEIBELE III, MD, FACC, FSCAI: Okay. Right now we have that pigtail catheter. You can see that it comes down, it goes right across the valve and then it's got a little loop and that is now in the pumping chamber of the heart. So, we make some pressures and to…some measurements to assess pressures in the heart. And that will tell us about some of the status of the…fluid status of the patient. And then we'll take pictures of the pumping chamber.
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KIM KAISER: While Dr. Deibele is doing that, I do have another question here that has been emailed in from people viewing at home. Why do you need to put the tube in through the leg, is the question? Would it be easier to go through the arm or the chest? Why is the leg preferred, Dr. Lucca?
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MICHAEL LUCCA, MD, FACC: The leg is…the leg is preferred. The femoral artery is preferred because it's actually…the artery is a large artery, it's easier to access. We think it's generally safer; although, it's…it's probably not any safer than using some of the arm arteries. And it's also safer for the operators and we get less radiation exposure by…by being at…at the leg and going through the femoral artery. So we much prefer to use the femoral artery for angiography and coronary intervention.
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KIM KAISER: Now did you have something that you wanted to mention, Dr. Braddy, about the devices that are being used in this first part of the procedure?
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KATHLEEN BRADDY, MD, FACC: Saying the pictures---
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KIM KAISER: The wires that were being used?
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KATHLEEN BRADDY, MD, FACC: The pictures that we're actually seeing of the patient, looking at her chest, you can see some circular devices, or circular wires, and those are actually prior sternal wires. This patient's actually had open heart surgery as a much younger person to correct a congenital heart defect. And so, those of us who have not had heart surgery do not have those types of wires that you see right down the middle of her chest.
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KIM KAISER: Okay. Well, thank you for explaining that. Let's go back to Dr. Deibele now.
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ALBERT DEIBELE III, MD, FACC, FSCAI: Okay, now we're ready to go ahead and get the ventriculogram, or picture of the pumping chamber of the heart. Are you done? Inject? So now we're seeing the heart and its pumping capacity. And, we can see here that all the walls of the heart – the anterior wall, the apex, the inferior wall – are all working very well. Her heart is nice and strong. Her pumping capacity is normal. There's a little bit of leaking of blood back through the mitral valve that we can see there, but that's very…a very small amount.
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KIM KAISER: What's your next step, Dr. Deibele?
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ALBERT DEIBELE III, MD, FACC, FSCAI: Next what we'll be doing is taking pictures of the left coronary artery. That starts with the left main and then it splits into two major blood vessels. And, the heart has three blood vessels. We've taken pictures of the right

coronary. That supplies the inferior wall. And the LAD supplies the front wall of the heart and the circumflex supplies the side wall. So we need to get pictures of the other two coronary arteries right now. So what we're going to do now is we're…we've taken the pigtail catheter out and we're going to use a special catheter that's geared towards imaging…or, geared toward seating in the left main coronary artery. And you can see that this catheter has a….has a different shape. Can you see that?
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KIM KAISER: Oh, that's great. Thank you.
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ALBERT DEIBELE III, MD, FACC, FSCAI: Okay.
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KIM KAISER: Now I do have a question while you're proceeding with that portion. This person writes in, this surgery seems to have been scheduled awhile ahead of time, but I thought this was more often done on an acute basis? This is a great…a great question, because I understand that sometimes this procedure is done when someone is having a heart attack and also sometimes it is scheduled. Can you explain the difference there, Dr. Braddy?
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KATHLEEN BRADDY, MD, FACC: Frequently this procedure is done immediately when the patient's having a heart attack or they're having their first episodes of chest pain, which we call unstable angina. It's called unstable because it's happening to a severe degree or happening when the patient is at rest. At other times we do a stress test, like Dr. Lucca talked about, to try and better quantify and qualify what the patient's heart muscle that's at risk is involved, and then we bring the patient in for a coronary angiogram.
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Frequently when we take the diagnostic pictures we move right ahead to do an intervention, to use a balloon or a stent. In certain circumstances, though, we actually stop to want to be able to talk to the patient, talk with them about the medications that they might need to use, talk whether they want us to go ahead and do a stent procedure or whether we should be considering bypass surgery. Other times where this is more of a scheduled procedure is if we're working on one blood vessel that is blocked, but there's another blood vessel that has a significant blockage and we think that it would be too high risk to try and treat all the heart at one time. We'll work on one, in one setting, and bring the patient back a few weeks or a month later.
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KIM KAISER: Well, I'm sure Dr. Deibele is getting more information as he is continuing with this angiogram. What are you seeing now?

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ALBERT DEIBELE III, MD, FACC, FSCAI: Well, right now we have the catheter seated in the left coronary artery. You can see how the catheter comes up the aorta and around and it's seated in the left coronary. I'll give you a little bit of contrast here and you can see the blood vessel quite nicely there. Yep. So now we're going to do two pictures here of the left coronary. One is geared towards imaging the blood vessel towards the front wall of the heart and the other the left. Actually, Brad, let's…let's re-center this a little bit here and….
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KIM KAISER: Well, while they're continuing to work on that, I have a question for you, Dr. Braddy. This person who writes in is curious about the type of imaging. And, obviously, you have to see what you're doing and you have very specialized imaging to allow you to do that. If this is…Is this fluoroscopic imaging? Is that what it's called? And how is the doctor and the patient shielded in this situation? What's…what's…How much radiation are you receiving?

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KATHLEEN BRADDY, MD, FACC: Fluoroscopy is a type of imaging that we're doing when we're watching catheters move or trying to set up the shop, just like Dr. Deibele was. And then [CINE?] is the term that we use where we actually put something on film, and it's slightly higher radiation to both the patient as well as to the provider. It provides a crisper, more detailed picture. The patient is on the table and we're focused on their heart, and so they're shielded by having us try and limit the radiation beam to only the area that we're interested in. The provider…both the physician and the technician that's assisting the…the doctor that's performing the procedure, are shielded by some lead shields, or clear…what look like clear plastic or clear glass in there, but they're actually lead-based shields that prevent the radiation from coming directly towards us.
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KIM KAISER: Well, it's helpful to know the kind of protection. Is there something that you wanted to add, Dr. Lucca?
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MICHAEL LUCCA, MD, FACC: Yeah. Everybody in the room also wears lead…leaded gowns, leaded aprons to reduce the radiation exposure to the body, as well as leaded glasses to reduce exposure to the lens, as well as thyroid collars to reduce exposure to the thyroid. And we adhere to the…the principle of as low as reasonably achievable for radiation exposure to everyone in the lab, including the patient and the attendants.
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KIM KAISER: While we've been talking about the fluoroscopy imaging, what is it showing you now, Dr. Deibele?
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ALBERT DEIBELE III, MD, FACC, FSCAI: Okay. We're ready to get this initial picture. Ready, Brad? Okay. Let's get a picture of the left coronary. And this picture is geared towards evaluating the left main and the LAD primarily. And, you can see the LAD comes down along the front of the screen and the circumflex goes across the horizon. Now if I go back and run this for you, you can see, again, the LAD has a few minor areas of narrowing, but there isn't anything that looks real dramatically tight.
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This patient is a sixty-one year old woman who had been having a burning-like chest discomfort and a stress test suggested that the inferior lateral wall wasn't getting enough blood flow. That wall of the heart became weak with exercise. So, we would expect with this particular patient that we would find an area in the circumflex causing troubles. Ready Brad? Should we give this a look here? Yeah. A caudal. 3D caudal.
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KIM KAISER: I think it's interesting for the…the laymen to be watching this and to see just the level of…of imaging that you have to be able to make those sorts of diagnostic decisions. Do you always know what you're going to find, Dr. Lucca, when you do a diagnostic angiogram, or what kind of blockages you may see?
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MICHAEL LUCCA, MD, FACC: Sometimes you have a clue, but most of the time you go in you…you don't know what you're going to find until you actually take the pictures. We can sometimes be guided by our stress tests, or our…our CT angiograms, but most of the time we…we don't know what we're going to find until we do actually take the pictures.
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KIM KAISER: Now what's happening for you now, Dr. Deibele?
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ALBERT DEIBELE III, MD, FACC, FSCAI: We need to get a picture of the circumflex at this point. So here we go. See, here in the circumflex, we have the…Actually, this is the left main. The blood vessel starts off nice and big. The circumflex comes down across the screen here and we can see that the blood vessels are pretty big there. But then it's

narrowed right here and the blood vessel becomes big again. SO this is the area that's causing the trouble for her and we'll be working to fix it. And, what I'd like to do right now is head over to our other monitors and we will be working on doing a 3D reconstruction of this blood vessel.
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And what the 3D reconstruction does is that it allows us to spin the blood vessel, it allows us to measure the blood vessel and we can plan our intervention a lot better when we have this type of extra information. So, John and Sherri right now are working on doing the reconstruction. And that will take us just a…just a few minutes.
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KIM KAISER: Well, while you are taking a better look at the artery using that 3D reconstruction, I have a question here from someone wondering if the patient is awake. This person says, I think I was awake. I've had a procedure done there, but I can'…I'm not a hundred percent sure. So is that….How much…how much is the patient aware of what's going on?
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KATHLEEN BRADDY, MD, FACC: Exactly what that patient described. The patient is awake. They snooze usually in and out, but the patient's easily awoken, can answer questions. But after the procedure their memory is quite foggy. We use what's called conscious sedation. It's a combination of medicines that not only have an analgesic or a pain relieving effect, but also an amnestic effect so the patient is comfortable, able to participate if we need them to take a deep breath or cough, or answer whether or not they're having any discomfort. But for the most part the procedure, the memories of the procedure, will be quite foggy. Ad usually at the end of the procedure the most common question that we get is asked is, what do you mean you're done? We didn't know you started yet. I didn't realize you'd actually done anything yet. Even if we've been working for an hour to open up a couple of arteries, most patients memories are quite foggy.

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KIM KAISER: Well, Dr. Lucca, I see you have a model there. Are you…Can you sort of help us…to show us the area that we've been working on or looking at?
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MICHAEL LUCCA, MD, FACC: Yeah, what I'd like to do is, if we can…if we can zoom in here a bit, just to show you where Dr. Deibele is actually working on. This is a model of the heart. And I would like to show the…This is the artery on the…on the front of the heart that he was referring to as…as the LAD that comes down in front of the heart.
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KIM KAISER: If you maybe just turn it a little bit. Oh, perfect. That's great.
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MICHAEL LUCCA, MD, FACC: And then he…the actual artery that he's going to be intervening on is the artery on the back of the heart that comes around this groove, the AV grove of the heart, and comes around to the back. Now he also took a picture of the right coronary artery, which is over here. And all…and comes down to the right side and the bottom of the heart.
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KIM KAISER: Yeah, but just tilt it just a little bit more. Oh, that's great.
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MICHAEL LUCCA, MD, FACC: And then the…the catheters are coming through over the aorta and into these…into the start of these arteries where they come off. And that's where we're able to get the pictures by…by putting these catheters into these arteries. And just…this just gives you a little bit different perception. This is…this is actually what the heart would look like and what we're dealing with, even though this prob…this is a heart

model and is actually much bigger than a normal heart, which is only about as big as your fist.
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KIM KAISER: Now how blocked does an artery have to be before you would put a stent in? This is a question that we had emailed to us.
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MICHAEL LUCCA, MD, FACC: The usual…the usual thing that we look at is that an artery has to have at least a seventy percent blockage of the artery before we would consider doing any kind of intervention.
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KIM KAISER: Why seventy percent?
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MICHAEL LUCCA, MD, FACC: At seventy percent you start to get some decrease in pressure and flow into the artery.

KIM KAISER: Okay.
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MICHAEL LUCCA, MD, FACC: And that causes the symptoms that the patients have with… for chest pain. So, we don't really consider it before, or…before they reach that level.
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KIM KAISER: Okay. Well, I understand that we're able to see the results of that 3D imaging. What is that showing you, Dr. Deibele?

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ALBERT DEIBELE III, MD, FACC, FSCAI: Well, right now we're back here and here is our 3D reconstruction of the blood vessel. And you can see we can spin that blood vessel around so that we can see it many, many planes, and it allows us to plan our procedure better. The blood vessel is very blocked right in here. And on both ends we have a nice big blood vessel. This part of the image, what that does is that suggests the best area for us to be working in. So that's actually be a very useful bit of information with this brand new technology that we're working with. Want to click…click on the length there.
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We can see that that blood vessel is .7 millimeters in diameter. And normally that blood vessel, at least in this particular patient, should be probably about 2.5 millimeters in diameter. So, that blood vessel is very, vary narrowed. And, the length of the stent that we're going to need is also information that we can get from this, and that's 10 millimeters. So, we'll head back to you, Kim, now and we'll get ready to work on prepping for the intervention and the stent.
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KIM KAISER: All right. Thanks, Dr. Deibele. While you're getting ready for the next phase of the procedure, I have to point out that, of course, patients don't want to end up in the cath lab, if they can avoid it. And that's why the message of prevention is so important. Let's learn now a little bit more about preventing heart disease.
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NARRATOR: The St. Mary's Duluth Clinic Heart Center offers programs geared specifically towards prevention of heart disease by focusing on risk factor reduction.
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KAREN WALLI, MA APRN BC NP: A vascular disease is a preventable disease process, is a message we need to make sure that everybody hears. That waiting for events, waiting for people to have their heart attacks when nearly forty percent of people die. Thirty percent of women can die in the first year after a heart attack. Twenty-five percent of men can die in the first year after a heart attack. Nearly fifty percent of women are disabled after a heart

attack. We don't have second opportunities. And we need to really invest our interest, time and money into preventative care.
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NARRATOR: SMDC's Heart to Heart Program identifies and helps patients at risk before they have a catastrophic event.
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MICHAEL LUCCA, MD, FACC: Yeah, the Heart to Heart Program is a therapeutic lifestyle management program where patients are referred from their physicians to this program, which is…which is run by nurses. These…and exercise physiologists. And these people also happen to be the same people who do part of our cardiac rehabilitation. Now, and their job in the Heart to Heart is to help people monitor their own risk factors and try and reduce stress, blood pressure, make sure their diabetes is controlled, make sure their cholesterol is controlled through a diet. This is…this program is more of a mentoring approach to risk factor modification, where we identify those risk factors that people have and then we encourage them through repeated visits and through phone calls, and through some exercise training to try and reduce those risks for heart disease.

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NARRATOR: Women are also at particular risk, because heart disease has traditionally been associated with men.
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KAREN WALLI, MA APRN BC NP: We specifically have a preventative program that's identified to be access for women, as women in particular have not identified vascular disease to be an issue for them. So we have a women's heart program, which is a vascular risk assessment evaluation where we screen women for their risk factors, including BMI, waist circumference, fasting blood sugar, fasting lipid profile, blood pressure, review of personal and family history and an assessment of their stress management. Then we coach them on how they can lower their risk.
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NARRATOR: St. Mary's Duluth Clinic Heart Center, the soul and science of healing.
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KIM KAISER: Helping our patients to lead a heart healthy lifestyle is obviously very important. Just one aspect of the range of services that are offered here at the heart center. There are other doctors who help deal with problems with the heart's rhythm. Let's learn more abut Those services.
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NARRATOR: In addition to their award winning cardiac care, St. Mary's Duluth Clinic Heart Center offers comprehensive electrophysiological services.
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MICHAEL MOLLERUS, MD, FACC: We have a full service electrophysiology suite here with a electrophysiologist always present here. And we have all the contemporary or current equipment that will allow us to treat the full spectrum of arrhythmias that people might present with.
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NARRATOR: These services include pacemakers, defibrillators and ablation .
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MICHAEL MOLLERUS, MD, FACC: A pacemaker is a device that we can plant underneath the skin. We use a large vein in the arm to feed the leads through those veins inside the heart and attach them within the heart in the upper and the lower chambers, usually. And a small amount of energy will be delivered through a battery which attach to the leads, which stimulate the heart muscle to contract. A defibrillator is a larger device that can serve as a pacemaker, but more importantly its function is to shock people out of life

threatening arrhythmias. An ablation too uses catheters, but these are special electrical catheters and we use them to localize the source of the arrhythmia and it's called mapping. And from there we're able to apply energy in the form of radio frequency which turns into heat, and that burns or cauterizes the abnormal area causing the arrhythmia to cure the person of that problem.
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NARRATOR: Another reason why St. Mary's Duluth Clinic Heart Center has been named on the top one hundred heart centers n the U.S. eight times.
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KIM KAISER: It is amazing all the technology available to doctors and patients today. Let's go back now to the cath lab and see what's happening with Dr. Deibele. What's going on there?

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ALBERT DEIBELE III, MD, FACC, FSCAI: Well, we're ready to get started here now, Kim. What we have is the tools of the trade, so to say, for coronary angioplasty. We have a wire, and our wire is sticking outside the catheter. It's 14,000th in diameter. It's a very floppy, very soft wire that we use to navigate through the coronary. We put a little bend on it. You can see the bend right here. And, that helps us steer through the coronaries. This is a balloon catheter, right here. We have a little silver band here and a little silver band there. And, those bands are markers so we know where the balloon is, so we can inflate it in the proper position in the coronary. So, let's head on up into the coronary.
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KIM KAISER: We'll keep watching you here as you complete this next step.
00:32:29
ALBERT DEIBELE III, MD, FACC, FSCAI: Okay. So, what we do here at this point – You want to pull the wire back, Brad – is we place our balloon catheter into the catheter we have seated in the coronary and we just run it up so that it's just within the interventional catheter. And we have markers on our balloon so we know exactly where we are. And…you can see that coming into the field of view now here is our wire. Our wire is very radiopaque, so we're able to see that. And then, our balloon markers, I'll slide our balloon down so we can see that. We have the two additional markers right there and there. This is where our balloon is and that's the wire.
00:33:35
So, let's go ahead and get into the coronary here, Brad. Let's come about 10L and about 10 caudal, I think to work in. That should be a good view for us. That's what's suggested as being a good working view and should show everything very well.
00:33:54
KIM KAISER: And while Dr. Deibele and the crew there in the cath lab are working, we have another question. I think people are very curious about how that catheter knows where to go. And…and how is it that it doesn't damage the artery as it's sliding up through? Is that something you might be able to explain? I know we have some different props here that we can show while Dr. Deibele continues on there. What is that that we're looking at?
00:34:20
KATHLEEN BRADDY, MD, FACC: So, through the catheter we place a wire that has a soft floppy tip. And so this wire is the length that can get us all the way from the leg, up around the aorta and into the heart. But what's important is to look at – and I'll get this centered better – the tip of this wire has a soft tip on it and it also has a "J". And so if it runs into anything, it's going to bend or prolapse. And so, we watch this wire go up, the wire leads the catheter because it's softer than the catheter with this tip that's quite flexible. We take that up around the aorta and we watch where it's going. And so, if we see it go someplace we don't want it to go, most likely it's going to bend and kind of fold back on itself, but we

also just pull it back. And so we're watching it and guiding it b our hands as we're coming up into the coronary arteries.
00:35:06
KIM KAISER: I appreciate you mentioning that, because I think that is something that a lot of people wonder is how that all works. Let's go back now to Dr. Deibele and see where you're at in the procedure, Dr. Deibele.
00:35:16
ALBERT DEIBELE III, MD, FACC, FSCAI: Okay, and maybe let's slide the catheter. Well, right now we have our catheter seated in the left main coronary, can see our wire coming across the area of narrowing and we're ready to bring the balloon in. Are you ready, Brad? Let's bring the balloon in. Give me a little test here, Brad. We're across the area of narrowing there. Let's just document that with a picture here. Ready? Inject. Good. Hope you got a nice position there. Okay. Yeah, let's look at where our balloon is and the narrowing. Our balloon is here and down here we're in the big parts of the blood vessel. And the area of narrowing that we're going to fix is right here.
00:36:16
KATHLEEN BRADDY, MD, FACC: What size balloon did you choose?
00:36:18
ALBERT DEIBELE III, MD, FACC, FSCAI: So, we have Brad working here. He has what we call an indaflator. And he's applying pressure to that balloon. Let's go to six, Brad.
00:36:29
KIM KAISER: One question, Dr. Deibele.
00:36:31
ALBERT DEIBELE III, MD, FACC, FSCAI: And you can see the balloon inflating here now. Yeah?
00:36:34
KIM KAISER: Dr. Braddy asked what size balloon that you chose, and…and how much pressure do you use to try to expand it?
00:36:42
ALBERT DEIBELE III, MD, FACC, FSCAI: We're using a 225 here and I thought the…I usually size the balloon a little bit smaller than what I think the blood vessel is and then size up just a hair for when we put the stent in.
KIM KAISER: Sure.
00:36:59
ALBERT DEIBELE III, MD, FACC, FSCAI: And down. So we had our balloon inflated there. You can see that's expanded there. And then let's bring the balloon back and we'll get a picture and we'll see how things look.
00:37:18
KIM KAISER: Well, as you keep working there, Dr. Deibele, maybe one of the two of you could explain what it is that the balloon is trying to press against or…or get out of the way. That the plaque that's causing…I know I'm not describing it quite right, but perhaps you can sort of explain what the balloon is doing.
00:37:34
MICHAEL LUCCA, MD, FACC: What the balloon actually does is it…it puts pressure against the wall of the artery and the plaque. And it actually…what we hope it does is make a crack in the plaque so that…that the artery walls kind of spring open. The problem is, is that when we just did balloon angioplasty, if we did that we left an artery that basically has a tear in…in the wall of the artery. And a lot of times we had an excellent result and got away with it, but we found that stenting the artery really keeps the artery open and…and we get much better results with stents than we did with balloons.
00:38:14
KIM KAISER: Okay. Well, let's see if…how that balloon procedure is continuing for you, Dr. Deibele.

00:38:18
ALBERT DEIBELE III, MD, FACC, FSCAI: Okay. Well, let's show our picture here. We'll run that for you. And, got to back up on. There we go. We can see now in that blood vessel that…that area of restriction really has been reduced. And, the area where it was narrowed, right in here, is nice and wide open now. So, what we're doing currently, Brad's prepping the stent balloon so that we can bring that into the coronary artery. And, when we have that read here, let's show them what a stent looks like before it goes in.
00:39:06
So it's very similar to our previous catheter. A stent…or, balloon catheter. And we can see that on it is a little stainless steel mesh tube that's crimped on the balloon. It's squeezed right on the balloon and it will stay there. And, when we are in position, what we do is we inflate the balloon and that drives that stent into the wall of the artery and it holds it open.
00:39:36
KIM KAISER: Now, Dr. Deibele, we also have a stent here in our room that we'd like to show the folks at home.
ALBERT DEIBELE III, MD, FACC, FSCAI: Okay.
00:39:42
KIM KAISER: This stent actually is expanded. Maybe you could explain what we're looking at, Dr. Braddy.
00:39:47
KATHLEEN BRADDY, MD, FACC: This is actually a peripheral arterial stent, so it's a larger size than the one that Dr. Deibele is using in the other room on a coronary artery that's smaller than a leg artery, which is what this might be placed in. But what you can see here, and I'll hold it up against my hand, is you've got a mesh wire, kind of scaffolding network over a clear balloon. And, you inflate that balloon and expand the stent and place it…press it into the wall of the heart artery and then you pull the balloon out and leave the stent in place. And we can actually come done on this balloon. Kim, if you want to hold that.
KIM KAISER: Sure.
00:40:17
KATHLEEN BRADDY, MD, FACC: We promised Kim she could take this home.
00:40:19
KIM KAISER: Right. My little souvenir.
00:40:20
KATHLEEN BRADDY, MD, FACC: So this has been inflated with the balloon. And this is an inflation device similar to the inflation device you might use on a bike tire. And we go to pressures anywhere from six atmospheres up to twenty-two atmospheres, in the same type of measurement as what you place in your bike tire or your care tire. So we'll come down on this balloon. And it will take a few moments to come down.
00:40:40
KIM KAISER: Oh, I can see that it's going down.
00:40:43
KATHLEEN BRADDY, MD, FACC: It's a big balloon. Yeah. So it takes a few moments to…Yeah, and you can pull that stent off. And so, we'd wait in the body to take the balloon all the way down before taking it out.
00:40:53
KIM KAISER: And this…you said this is a larger stent than the one that's being used in today's procedure?
00:40:58
KATHLEEN BRADDY, MD, FACC: Yes. Based on the size---
KIM KAISER: Because it seems---
00:40:59
KATHLEEN BRADDY, MD, FACC: The stent is based on the size of the artery, and so…
00:41:02

KIM KAISER: Well, thank you for helping to help us all visualize this. Let's go back to Dr. Deibele.
00:41:07
ALBERT DEIBELE III, MD, FACC, FSCAI: Okay. Yeah. What we're going to do now is we're going to run that stent up into the catheter, so I'm just going to slide it up. And we'll bring it all the way up and then we'll start imaging when we get a little bit closer. So, right now you can see the stent right at the tip of our guiding catheter. Here's our markers. Our wire down in the coronary. Now we're going to insert that stent into the coronary, into the area where the narrowing was.
00:41:55
KIM KAISER: Well, we'll keep watching what you're doing there, Dr. Deibele. In the meantime, I do have a question that was emailed in asking, how do you decide whether to do a stent or a bypass? Dr. Lucca?
00:42:06
MICHAEL LUCCA, MD, FACC: Oftentimes that's…that's a difficult question. Usually if…if there are focal blockages that we can easily get a balloon or a stent down, we would prefer to use a stent. If a patient has disease in all three of their vessels, including one in the LAD artery, the artery that goes in the front of the heart, oftentimes we would prefer to send them to a bypass surgery.
00:42:38
KIM KAISER: What are you seeing now, Dr. Deibele?
00:42:40
ALBERT DEIBELE III, MD, FACC, FSCAI: Well, the coronaries are often very calcified and our stent got halfway through the area of narrowing, but it hung up in the calcium a little bit. So what we're going to do is we're going to exchange wires for a different style of wire so that we can get that stent in there.
00:43:03
KIM KAISER: Well, we'll let you work on that. I do have more questions that keep getting emailed to us, which is great. We really appreciate that. The question for you, Dr. Braddy. Do diabetics do well with these types of procedures? Do the have any greater risks?
00:43:17
KATHLEEN BRADDY, MD, FACC: Diabetics do well with these types of procedures, but diabetics overall as a general population of all diabetics have more heart artery disease, smaller vessels and more diffuse nature of disease. Meaning that there's not just one focal blockage that we can place one stent in. They're more likely to have longer lesions or longer areas of disease.
00:43:38
KIM KAISER: And I just think this is great that so many folks are coming in with different ideas about this. Is the type of stent that's being used in this procedure a drug coated stent or a plain stent? I don't know if either of you know?
00:43:52
KATHLEEN BRADDY, MD, FACC: Great question.
00:43:52
MICHAEL LUCCA, MD, FACC: I don't know.
00:43:52
KIM KAISER: Perhaps it's a question for Dr. Deibele.
00:43:56
ALBERT DEIBELE III, MD, FACC, FSCAI: Yeah. What we had intended to use, actually, was a drug coated stent. So….
00:44:04
KIM KAISER: Okay. We'll let…We'll let you keep working on that and that's something that we can come back to, certainly, as you continue to get the stent placed. Is there something---

00:44:13
KATHLEEN BRADDY, MD, FACC: Maybe we can follow-up a little bit on that. So we make a decision whether to use a drug coated stent versus a…what we call the bare metal stent based on a patient's anatomy, as well as other risk factors. And so, after a drug coated stent we need to have patients on a medication called Plavix, which is a super aspirin, for at least a year. If a patient has an upcoming surgery or a reason why they can't be on blood thinners for a year, we prefer to use a bare metal stent, because we can use that Plavix for just one month. But the type of anatomy, the size of the vessel, the length of lesion all help us to decide whether or not patients should get a drug coated stent or a bare metal stent.
00:44:49
MICHAEL LUCCA, MD, FACC: And the…and the reason that we went to drug coated stents is that even with bare metal stents there is a significant number of those that will block up again, called a restenosis. And so the…the drug coated stent's advantage is that they reduce the change of that reblockage, or restenosis, to less than ten percent. Whereas, with the bare metal stents it was about thirty percent. With…with arteries that are greater than 3.5 millimeters, there's no advantage to using a drug coated stent and so we use bare metal stents in arteries that are…that are larger than 3 ½ millimeters.
00:45:25
KIM KAISER: Well, that's helpful. I think that's…people have a lot of questions about this particular topic.
00:45:28
KATHLEEN BRADDY, MD, FACC: And the drug coated stent, Dr. Deibele was choosing that because of the small size of this vessel. But one thing that sometimes happens in procedures, that both Dr. Lucca and I, and everyone else here do, is that if we have difficulty delivering a stent, our drug coated stents can be a little bit more difficult to get down arteries and we might then need to change our mind based on the fact that we're having difficulty with the anatomy and go to a bare metal stent.
00:45:51
KIM KAISER: And that might be something that is occurring…is occurring here is to change and use a different…a different stent. How are things going in there? What's happening now, Dr. Deibele?
00:46:00
ALBERT DEIBELE III, MD, FACC, FSCAI: Well, we got our wire exchanged out and we're just going to dilate one more time before we bring our coated stent up. If…if it doesn't go up with this time, we may switch to a stainless steel stent. And I heard you talking about the advantages and disadvantages of those a little bit.
00:46:26
KIM KAISER: Exactly. While you continue with that procedure, we have another question about stents that I'll pose to Doctors Lucca and Braddy. The question here is, will a stent eventually become plugged up with plaque itself? How long might that take to happen and…and what do you do to try to correct that?
00:46:45
KATHLEEN BRADDY, MD, FACC: So as Dr. Lucca alluded to, our stents have replaced what's called plain old balloon angioplasty. And so they help us keep an artery open for longer. And drug coated stents usually help with that more than our bare metal stents. That said, that type of re-narrowing is restenosis, or a re-growth of cells within the stent itself. Over the longer term, if someone does not address their risk factors for heart artery disease – so controlling their high cholesterol, controlling their high blood pressure, controlling their diabetes - they may get re-narrowing, which is plain old cholesterol build up and not a restenosis inside that stent. Do you have anything else you want to say about that, Dr. Lucca?
00:47:23

MICHAEL LUCCA, MD, FACC: I think that stents do block up and if…and, again, less than ten percent with these new drug coated stents. If these stents block up, we can go in and open them again with plain old balloon angioplasty. Or, we can actually put another stent inside of a stent to…to make a whole new scaffold and…and keep the artery open that way.
00:47:46
KIM KAISER: And help shore it up. One person asks, will you have any problems with future MRI imaging if you have a stent placed? Is that enough metal to cause a problem?
00:47:58
MICHAEL LUCCA, MD, FACC: MRI, most stents are not ferromagnetic so they do not… there is some interaction with the magnetic field, but it's not enough to cause any problems with the stent. So you can…you can do an MRI almost within a day or so of placing a stent and it does not affect the stent at all.
00:48:22
KIM KAISER: Okay. Well, let's see how things are going with Dr. Deibele in the cath lab. What's happening now?
00:48:27
ALBERT DEIBELE III, MD, FACC, FSCAI: Well, I think we're ready to try and get the stent in. We…I'll bring it up to the end of the guide catheter so you can see where our markers are. And you can see we have a different style wire in here. It's much darker on the screen. Much more radiopaque. But we have our…our stent markers there and our wire is down, so we're going to try and slide that stent over the wire into the coronary. And we're halfway in again. And just hanging up.
00:49:11
KIM KAISER: Well, while you're working with that, I have a question here about what drug…We keep talking about drug coated stent. What drug is on a drug coated stent, Dr. Braddy?
00:49:22
KATHLEEN BRADDY, MD, FACC: There's two drug coated stents commercially available right now. One has Paclitaxel on it, the other has sirolimus, and those are both chemotherapeutic drugs. When we talk about restenosis, that restenosis is not a cholesterol buildup or a new plaque, it's actually the body's reaction to the stent going in. And, we send blood cells, or…almost skin lining cells inside of the stent to blind that and so it's seen as a foreign body. But after placing a bare metal stent, that process can go somewhat awry and we can get an extreme buildup of these cells inside of a stent And so, the two drug coated stents that are available have these chemotherapeutic agents that stop that cell division, or that restenosis.
00:50:05
KIM KAISER: And we're continuing to watch Dr. Deibele work here. In the meantime, could you tell me what this is like for the patient? Does the patient feel any of this?
00:50:14
MICHAEL LUCCA, MD, FACC: Usually the patients don't feel any of this because they're…they're sedated enough that they really don't know what's going on. A lot....Oftentimes, even though they are sedated, if you blow up a balloon in the artery they will feel it and they will tell you that they have chest pain. They may not remember telling you that after they wake up from the procedure, but during the procedure we'll ask them and they'll tell us if they develop chest pain. And oftentimes they do.
00:50:38
KIM KAISER: We were watching earlier. To be able to get these images, we were watching that contrast show up on the screen. What is that contrast and what happens to it in the body after the procedure is done?
00:50:51

KATHLEEN BRADDY, MD, FACC: Contrast is x-ray nine, so it's dye that is used…put into the blood vessel and opacifies the heart arteries. And after the procedure our bodies excrete that usually through the kidneys.
00:51:03
KIM KAISER: I think that is something that you hear about or maybe you've seen on TV, but people don't always realize what that is or how it's used. And it looked like there was an injector that sometimes you would use to pump it in there really fast to be able to get a better image of how the whole heart is pumping. Is that correct?
00:51:18
KATHLEEN BRADDY, MD, FACC: Exactly. For that left ventriculogram, the picture that was taken with the pigtail catheter that multiple holes in the end of that catheter, we use a power injector and that puts a larger volume, usually on the order between twenty and thirty-five cc's or milliliters of contrast dye into the pumping chamber of the heart very quickly to allow us to opacify that pumping chamber. Whereas when we're taking pictures of the heart arteries, we use a hand injection, more gentle so that we're not damaging the heart arteries, and use between four to eight cc's of contract dye to opacify the heart arteries.
00:51:51
KIM KAISER: Okay. We'll go back now to Dr. Deibele.
00:51:54
ALBERT DEIBELE III, MD, FACC, FSCAI: Okay. Now we have our stent there at the end of the catheter. We're going to try and get this stent slid right in. And there we go. A little test there, Brad. Just want to be just a hair further. Let's get that down.
00:52:20
KIM KAISER: Obviously, it's important to make sure it's in the exact right location?
00:52:25
ALBERT DEIBELE III, MD, FACC, FSCAI: Yeah. Oh, exactly. And that's why we're taking the extra care in making sure that we have a perfect location for this. A little test, Brad. I think we're good there. We're definitely in the coronary. A little more test…one more test there, Brad. Yeah, I like that position even a little bit better. Okay, let's just take a quick picture and we'll document that. Okay. Here is our area of narrowing. That's right in the middle of the stent. The stent is entirely within the circumflex and I think we're ready to go out. Yep. Let's go up to ten. So we can see our balloon inflating now.
00:53:19
MICHAEL LUCCA, MD, FACC: Al, what kind of stent are you using?
00:53:21
ALBERT DEIBELE III, MD, FACC, FSCAI: We have a 2.5 micro-driver here. So, we switched over from a drug coated stent to a bare metal stent. The bare metal stents tend to be a little bit easier to deliver. And I think we were going to have trouble getting that coated stent in. Come down at thirty, Brad. Okay.
00:53:47
KIM KAISER: And I'm sure there's a lot of decision making that really happens during the procedure. As you were saying, you don't always know…Someone maybe had an abnormal stress test, but you don't always see a problem when you're actually going to do the angiogram. I have a question here wondering why does that ever happen? Why would someone have an abnormal stress test and then have an angiogram and it comes back clean?
00:54:10
MICHAEL LUCCA, MD, FACC: There are…there are several reasons. One of…Probably the most common is that…is that when we do an angiogram we're looking at the large arteries of the heart. We don't necessarily, and we're not able to image the small arteries that go into the actual muscle of the heart. And those areas can also be diseased and they…that can cause abnormalities on the stress test, the imaging part of stress tests. And that's

probably the most common reason that, you know, that we end up with stress tests are abnormal, but coronary angiograms that are…are read as normal, it's normal because we're looking at the main, or the large arteries.
00:54:52
Now the other thing is, is that when we look at the large arteries, we're only looking at what's in the lumen of the artery. We're not looking at the actual whole artery itself. If you cut it in cross section you may have a lot of…you may have significant blockages in the arteries, but we're not able to see that unless we do what we call intravascular ultrasound and actually see the whole dimension of the artery and see how much blockage or plaque there is.
00:55:20
KIM KAISER: Okay. Well, how are things progressing there as you just deployed that stent, Dr. Deibele?
00:55:27
ALBERT DEIBELE III, MD, FACC, FSCAI: Well, let's show where we are right now. We have the stent in place, and we can see that blood vessel is nice and wide open. So we have a good initial result here with the stent. And what I'm going to do is just one more dilation there and then we'll…I get a final picture. So in the meantime, right now, Kim, what I'd like to do is send it back to you and then we'll finish up with our last little bit and we'll get a final picture for you.
00:56:03
KIM KAISER: Alright, we're looking forward to that. Of course, recovery from this procedure is relatively quick. That's one thing that we'll talk about here in a little bit. But the patient's work isn't done as they're starting to feel better. Cardiac rehabilitation is an important part of the recovery process. Let's learn more about that.
00:56:23
NARRATOR: St. Mary's Duluth Clinic Heart Center offers several rehabilitation programs to insure the continued cardiac health of its patients.
00:56:31
KEVIN WELSH, MANAGER, CARDIAC REHABILITATION PROGRAM: The primary focus of the rehab program is to lend some support to people who just get out of the hospital. So, we see people three days a week, sometimes more frequently, and they will come and see us for up to, oh, three to four months. And in that period of time they're going to get fitter, they're going to learn a lot about their heart situation and hopefully get the tools to take better care of themselves over the long haul. We know exercise is a very potent medicine and we've shown in studies that exercise has the same beneficial effects on mortality that aspirin, beta blockers and statins have, and that's about a thirty percent reduction in mortality. I've always told people, if you can bottle the positive effects of exercise and make a prescription for them, it would be one of the most heavily prescribed pills in the world. So, we teach people to exercise, but we also teach then how to eat, how to manage their diets properly and we also work with them in stress management techniques.
00:57:37
NARRATOR: Following angioplasty, local healing in the leg or arm is usually quick and simple. While healing the heart muscle requires more time and rehabilitation.
00:57:47
NANCY HASSINGER, MD: The recovery after a procedure, like an angiogram or angioplasty or a stent placement is actually fairly uneventful and unremarkable. It's a small skin incision. Less than half an inch long. But, really, the healing takes place in a couple of days and people can get back to a healthy lifestyle, exercising and start working again. In some ways it's almost too easy, because the procedures are quite painless, so I think patients kind of forget the problems that got them to that point and…and forget that you really have to work hard to prevent coming back for more work done on the heart, because there's certainly no guarantee that it's not going to come back or get worse over time.

00:58:23
NARRATOR: St. Mary's Duluth Clinic Heart Center, the soul and science of healing.
00:58:29
KIM KAISER: From the webcast to the help that we just saw with the rehabilitation, St. Mary's Duluth Clinic Heart Center really does provide a continuum of care. Let's learn more about the tradition of excellence here.
00:58:42
NARRATOR: The nationally renowned St. Mary's Duluth Clinic Heart Center offers the northland the kind of comprehensive heart care traditionally associated with larger population areas. Our cutting edge technology and highly trained staff are second to none.
00:58:59
RON SIEBERT, DIRECTOR: We offer everything from diagnostic twelve lead ECG's to the most complete cardiac ablations in the EP lab. Stress testing, twenty-four hour ambulatory monitoring, consultative care in the clinics, tertiary care in the non…in the interventional program. Coronary stenting. A-Fib ablations.
00:59:21
NARRATOR: In 2007, the cardiac catheterization lab in the St. Mary's Duluth Clinic Heart Center provided more than 6,100 diagnostic and therapeutic services to cardiovascular patients.
00:59:33
ALBERT DEIBELE III, MD, FACC, FSCAI: If you're what we call a high volume operator, in other words, that you do these procedures on a daily basis and regular basis, I think your outcomes are better. And, our cardiologists, who do these types of procedures, special… specialize in that and they're the only physicians who do that. So, as interventional cardiologists, the recommended number of angioplasties, or PCI's as you may call them, the minimum number is seventy-five that it's recommended that you do a year. And all of our cardiologists are in the 250 to over 300 range.
01:00:24
NARRATOR: The latest technology, highly trained and experienced physicians, and comprehensive follow-up care define the St. Mary's Duluth Clinic Heart Center.
01:00:35
KIM KAISER: And now let's go back to Dr. Deibele for a final look at the images of this patient's procedure.
01:00:41
ALBERT DEIBELE III, MD, FACC, FSCAI: Okay. What we'll do is we'll take a static picture here with the wire in. Let's go ahead, Brad. You can see that we got that blood vessel nice and wide open, and we have some nice flow in the coronary. Let's get that wire out now. And then we'll do a rotational angiogram to see how…how things look in three dimensions. Let's give just a little bit more nitro. You can go to a caudal view. 150 of nitro. Let's go to 10 ½ inch and I'll need to center this up a little bit here. We have to center this up and open this up. Yeah. Good. Okay. We'll set that and we'll rotate to our start position. And looks like we have a nice position there, so let's get a final angiogram and see how this looks.
01:02:14
So here's our stented area and we can see that when we compare it to our pre-picture, we were very narrow there. We have a nice blood vessel that's nice and wide open and we have real nice results here today. So, that concludes our procedure here today and I'd like to send you back to Kim.
01:02:36
KIM KAISER: Alright. Thank you very much, Dr. Deibele. Let's talk just very quickly about recovery. How long will the patient be in the hospital and when can they get up and moving again?
01:02:45

KATHLEEN BRADDY, MD, FACC: The patient has a tube in their leg that we work through and they're on blood thinners. And so that tube usually comes somewhere between four to eight hours after the procedure. Then they need to lay flat for another four to six hours. And so usually by ten or twelve hours after the procedure the patient can be up and walking around, and most patients go home the next day.
01:03:01
KIM KAISER: Any final thoughts, Dr. Lucca, that you hope people take with them having watched this procedure?
01:03:06
MICHAEL LUCCA, MD, FACC: I think people should understand that we can fix these arteries with these techniques, but the most important part of this is the…is the management of their risk factors to prevent heart disease and also to prevent people from coming back and having to have more of these procedures done.
01:03:22
KIM KAISER: It really is a combination of the patient and the physician….
01:03:25
KATHLEEN BRADDY, MD, FACC: Exactly.
01:03:26
KIM KAISER: …working together. Alright. Well, thank you both very much for taking the time to help explain this to everyone. And, of course, thank you very much to Dr. Deibele and the crew there in the cath lab. We appreciate you watching. Have a good evening.
01:03:40
NARRATOR: Thank you for tuning in to this percutaneous coronary intervention, performed live from St. Mary's Duluth Clinic Heart Center in Duluth, Minnesota. ORLive 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. St. Mary's Duluth Clinic Heart Center,. The soul and science of healing.
01:04:13
[END OF WEBCAST]