

Robotic Joint Replacement with Dr. Tarity

Melanie Cole: Welcome to the podcast series from the specialists at Penn Medicine.

Melanie Cole (Host): I'm Melanie Cole and joining me today is Dr. David Tarity. He's an assistant professor of clinical orthopaedic surgery at Penn Medicine, and he's here to highlight robotic joint replacement surgery. Dr. Tarity, tell us a little bit about robotics and how the utilization of robotics has really changed the landscape of medicine, and specifically orthopaedic surgery.

Dr. Tarity: Well thanks for having me Melanie. We're always looking for ways to improve outcomes with the surgeries that we perform to make sure that they are of value to our patients, and robotics is on the spectrum of ways to improve patient outcomes. It's very exciting in what robotic technology is able to bring to the operating room and customize these implants.

Melanie Cole (Host): So how does it differ from some of the other methods of performing joint replacement? I'd like you to speak about some of the advantages and the benefits to the patient, but not only the patient, Dr. Tarity, but for the surgeon as well.

Dr. Tarity: That's a question that I field pretty much every day in the orthopaedic surgery clinic when I'm informing patients about their surgical treatment options. I always say I'm not in a room somewhere else with a handheld device. Typically, I like to phrase it as it's a tool, in that it helps me perform the surgery.

It's basically a way to help plan before the surgery and before we do any bone cuts or to change the joint. It allows me to very accurately and precisely make bone cuts so that I can reproduce what I planned surgically to give the patient the optimal component position, ultimately, for their hip or knee replacement. So it's really an adjunct. The surgeon is still an integral part, but it does make life easier because anytime that you can do the planning ahead of time, you can then implement that plan with a lot more confidence in the operating room and a lot more reproducibility. It certainly makes the day a little bit more straightforward, which is always nice when you're performing surgery.

Melanie Cole (Host): Dr. Tarity, with all the new robots coming on the market, tell us a little bit about the learning curves that are involved and the technical considerations for other providers.

Dr. Tarity: I think that for most surgeons, there is a learning curve for any kind of new technology or new technique that you bring into your workflow. I think that most surgeons want to start with a little bit more straightforward procedures. But once you have an understanding of what the data means that you're able to acquire in the operating room, I think the technical aspects come pretty soon thereafter. Most surgeons, I would say probably within five to 10 cases or procedures, are able to improve their efficiencies throughout the operating room.

There have been several studies that have looked at the time required in the operating room, as well as the time for the patient who's undergoing surgery. You want to make that as efficient as possible, not as fast as possible, but as efficient. So, I think that after about five to 10 cases, most surgeons have adopted a workflow with the robotic technology and can most times get back to time neutral or actually can be time saving—and sometimes, particularly with more challenging anatomy, when you have a plan, the robot is able to help you implement that plan very efficiently and effectively.

Melanie Cole (Host): So tell us what hip and knee conditions that you're treating with robotic technology. What types of surgeries are you performing at Penn Orthopaedics?

Dr. Tarity: So we perform hip replacements and knee replacements currently using robotic technology. And the conditions that most typically we would perform those for are primary osteoarthritis of the hip or the knee. That's the condition typically described as wear-and-tear arthritis, when the cartilage at the end of two joints wears out and you have exposed bone, which is very painful particularly in the lower extremity, because we all are trying to be as mobile as we can, and walk. And so, that is the most common reason for utilizing robotics.

Other conditions robotics does play a role for, particularly helping to correct some deformities around the joint, and maybe somebody's had a prior fracture or another injury—that has possibly another role.

Melanie Cole (Host): Then speak about patient selection for us. Are there any contraindications for the robotic technology?

Dr. Tarity: Well, I think that when we're talking about patients who have hip or knee arthritis, we always try conservative treatment first. And for patients who have marked impairments in their quality of life, and are not happy with the level of pain they're in despite conservative treatment, usually for several months, then we start thinking about surgical management. There are certain

patients where robotic technology is indicated. It depends on what you're trying to accomplish in terms of how to get the implants to last as long as possible.

So someone that has very good bone quality, a younger patient where I'm trying to avoid a complication in the future, I think robotic technology could be very helpful. For instance, for knee replacements, if someone has good bone quality, a little bit younger, I want to make sure this is going to last as long as it can and try to avoid one of the main complications of loosening down the road.

Melanie Cole (Host): Dr. Tarity such an exciting time to be in your field. Please speak as we wrap up about when should physicians refer their patients to Penn Medicine?

Dr. Tarity: Anytime physicians have patients who they think could benefit from hip or knee replacements, certainly we welcome to see how we can help take care of those patients. We have robotic technology at multiple hospitals under our health system. It's an area that continues to develop and I think we're poised with our interests, our faculty, to continue to bring innovation to our patients, both in the greater Philadelphia area as well as nationally, who want to have their care performed here at Penn Medicine.

Melanie Cole (Host): Thank you so much Dr. Tarity for joining us and sharing your expertise in this matter. And to refer your patient to Dr. Tarity at Penn Medicine, please call our twenty-four seven provider only line at 877-937-Penn. Or you can submit your referral via our secure online referral form by visiting our website at pennmedicine.org/referyourpatient. That concludes this episode from the specialists at Penn Medicine. Please always remember to subscribe, rate, and review this podcast and all the other Penn Medicine podcasts. I'm Melanie Cole.