



Episode 357 – Joint Replacements | whistlekickMartialArtsRadio.com



Jeremy Lesniak:

Hey there welcome, [whistlekickmartialartsradio](http://whistlekickmartialartsradio.com) episode 357. Today, I'm going to give you an overview of joint replacements. Yeah, were going completely different direction today. Hold on a minute I'll tell you little bit more about what and why. If you're new to the show, head on over to whistlekickmartialartsradio.com for show notes, other episodes, transcripts, videos, audio, sign up for the newsletter or head on over the whistlekick.com, you can sign up for the newsletter there too and you can save 15% in the store on everything with the code `podcast15` and thanks for doing that it helps us. Helps pay the bills, there are bills. We gotta pay them.

Alright, so if you've been training for a while you probably know the strain the martial arts can take on the joints and some people elect to replace those joints. We have that technology which let me just say as an aside, that's amazing. Here let's cut open your body and take part of it out and take a man-made part that's gonna work better and put it in their and then you're gonna keep using it. Mind blowing to me but it happens, it happens all the time and quite a few people who've been on the show have had joint replacements. In fact some of them have had multiple joint placements, but when do you know it's time? Well, only a doctor can really tell you that but today I'm gonna give you some information it might help you understand a bit more about the process, the what, the why and so if it does seem like that's a path that you want to explore we've got a little bit more foundational information or if someone's talking to about joint replacements you can have a bit more of an elevated conversation.



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Joint replacement or replacement arthroplasty is a type of surgical procedure that replaces the joint surface that was destroyed by joint diseases such as arthritis. It is intended to alleviate joint pain that cannot be treated by less invasive medical procedures. According to statistics from 2009, around 773,000 United States people had undergone joint replacement surgeries particularly on the hip or the knee. The joints on the hips and knees are those most commonly damaged, and as an aside its shoes, there's an episode brewing below the surface about shoes, I've talked on the show about shoes bare feet. Background, a surgeon named Dr. Steven S Hudak of New York City started researching bone healing in 1936. In 1939 he experimented with joint surgery on animals by using artificial joints made of plastic and steel. The experiments were in part successful, a dog that he experimented on began jumping and dashing six months after the surgery without showing any signs of being limp the first human he performed joint surgery on the 38-year-old woman whose upper left leg was ready to be amputated months after the surgery woman was able to walk properly again. Doctor Hudak's next patients were a farmer who suffered from degenerative arthritis, a 64-year-old woman who had a broken hip, and an Air Force veteran who had very limited mobility because of arthritis. In the last few decades, the most successful type of arthroplasty is joint replacement with a prosthesis. One example is the hip replacement surgery in which the hip joints can be partially or totally replaced by prosthesis. The shoulder joint can be replaced and it's usually an option in severe cases of arthritis. Two major approaches are used to perform this procedure, Delta pectoral and trans-deltoid. Delta pectoral requires the supraspinatus to be cut in order to have access to the shoulder joint. Trans deltoid approach gives direct access to the glenoid however, it could potentially damage the deltoid. The risk associated with shoulder joint replacement surgeries is relatively low less than 5%. The risks however would only include the usual risk of surgery like infection, dislocation stuff like that. Hip joint replacement is one of the most common surgeries undergone by patients who suffer from osteoarthritis and very popular in martial arts world. Two types of hip replacement are total hip replacement and hemi or half hip replacement. Total hip replacement replaces both the socket and the femoral head. The latter hemio arthroplasty only replaces the femoral head. And there's several risks associated with hip replacement surgery like infection, dislocation, fracture, vein thrombosis chronic pain and others. It can also result in death in very very rare cases with probability far under 1% and of course you probably know someone who's had a hip replaced. Knee joint replacement surgery is performed by exposing the front of the knee through detaching a part of the quadriceps muscle from the kneecap. Afterwards, the patella is moved to one side of the joint to expose the distal the far end of the femur and the proximal near end of the tibia once the ends of these two bones are sufficiently exposed they are cut accurately following the cutting guides. Knee parts will be removed such as cartilage and the anterior cruciate ligament or ACL. The posterior cruciate ligament, PCL, may also be removed. Study show that patients who had the PCL removed and patients who retained their PCL had almost similar results in range of motion knee pain and overall quality of life after removing the ligaments the metal components are placed using PMMA cement. There's a full word for that but I'm not gonna read it it's a lot of letters. Cement less techniques also exist such as using porous metal prosthesis made from tantalum or titanium which both have very high biocompatibility. Risks in knee replacement include deep vein thrombosis, which is the most



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common risk, fractures which is more common in aging patients, a loss of motion, instability, you know, dislocation of the kneecap and of course infection. In the United States, 4.6% of all operating room procedures in 2011 involved knee arthroplasty with a number of more than 700,000 hospitalizations. Which tells you, this is not an uncommon procedure and if it's not an uncommon procedure it's probably a fairly safe procedure. Ankle replacements are an option to patients and used to restore the original range of motion of the ankles. At present the procedure is favored over arthrodesis because it provides better overall function with the use of more modern designs as compared to the initial design in the early 70s. I don't know anybody's had ankle replaced. Finger joint replacement is the simplest of all joint replacement surgeries, the procedure takes about 30 minutes however, there are months of subsequent therapy for the patient use the implanted prosthesis and that whether it's finger or any other joint have talked to a number of people had joint placements it's that balance between letting things heal but maintaining range of motion and it's a very difficult balance and I know people that have gone back for multiple surgeries to try to repair and improve range of motion after procedure like this.

Procedural timeline, the patient will undergo x-rays on the areas where the surgery will be performed the x-rays must be accurate because the design of the implant will be based on these x-rays also known as templating. Yeah it's not a one-size-fits-all joint they've got to make it for your body because everybody's different. There are several preparations made for patient undergoes joint replacement surgery these include complete pre-anesthetic check to see the patient has any medical problems or diseases so the procedure can be modified accordingly, and this is to avoid complications that could arise during the surgery. In older patients, additional preparations are usually required including an ECG or EKG, urine tests, blood work all kinds of things. Blood typing or cross matching has also become part of the routine in case the patient needs blood transfusion during the procedure due to blood loss. After surgery the patient must state hospital for anywhere from a few days up to a few weeks to allow the wound to heal and that's followed by weeks of healing in rehab to not only speed up recovery but as I said maintain range of motion. Improvement in both strength and endurance take months. In modern practice, the patient is mobilized as soon as possible to reduce the chance of having any complications. After hip replacement surgery for example, the patient will be advised to use walking aids during physical therapy sessions. The materials used in manufacturing implant prosthetics are mostly ceramic including aluminum, zirconium, silica, titanium nitride, silicon nitride, and other stuff. When titanium and titanium carbide are combined results in very strong ceramic material that is also compatible with medical imaging. Titanium carbide can also be combined with some other stuff for more enduring longer-lasting artificial joints. As with any surgery, joint replacement has risks and there are chances of complication. Heart attack, stroke, thrombosis, pneumonia and then the fact that joint placements don't always work. You know, you're taking a joint and putting into the body and so depending on the skill of the surgeon that might not be perfect. Things might not work great in fact, they might not work at all and depending on again, the surgeon, the skill of the team yet there can be damage to tissue to blood vessels to the bones around. This is not a trivial thing that were talking about even though were doing a lot of them were getting really good at them. Long-term, there is still some risk. 5 to 10 years the bond



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between the bone of the components of the prosthesis can wear out and eventually break down. The components can be pushed inside the bone, which can cause a lot of pain. Ostia lysis may also occur as the wear particles from the artificial joint being cleaned up by the body resulting in reabsorption of living bone. The surfaces of weight-bearing joints such as the hip can end up getting thinner eventually and once that happens particles of polyethylene which is a common material used to manufacture prosthesis can cause other complications. Prosthesis need to be replaced eventually because the structure of the human body changes through time. For example, weight loss no occurs or weights gain, children grow, moreover prosthesis must be accurately constructed to avoid injuries and to maximize the capabilities.

Here are some guidelines on whether prosthesis needs to be replaced or not. It's no longer safe with regard to the weight of the patient, the patient feels that he or she exerts more energy while using the prosthesis instead of being at ease. The prosthesis says doesn't work anymore based on manufacturer specifications or new components come out they could replace the old one and really become an upgrade, or the size of the socket or the frame is impossible to alter without replacing the entire prosthesis. You know, talk about making some modifications that can be modified. And in martial arts, as a say prevention is better than cure while it's true that medical advances help us greatly there still nothing better than being healthy than having your original body part. For example joint placement surgeries are expensive and they need a lifetime of maintenance. We should take care of our joints and not be reckless with our techniques. Now martial arts, when you're smart about it no more dangerous than anything else you might do. Injuries can't be avoided of course but the probability of having one can be lessened through warming up through strengthening muscle and by being smart about your movement. One of the things that I get picky about when I'm teaching people is how they use their body. There are things that we do that increase the likelihood of major surgery including joint placement. And these are things that if you as a martial artist especially as an instructor or school or are not familiar with, it would behoove you to to learn some anatomies some physiology to look at what causes this stuff in our movements. It's really, it's all physics in one of the things I often say when I'm teaching, energy travels best over straight lines. So there there are times when we are trying to apply force through really silly angles can you feel it, your joints aren't happy with it and that's a sign that may be some things out of alignment, maybe something needs to be corrected.

Now if you want to go through if you want to check out the transcript for this episode, which has even more than what I read today you can find that episode 357 at whistlekickmartialartsradio.com. Sign for newsletter they are or over at whistlekick.com, and while you're at whistlekick.com, you can see all the projects that we work on including our store where you can support all of our work. You can use the code `podcast15` while you're doing so, save 15%. Follow us on social media we are @whistlekick on YouTube, twitter, Instagram and Facebook. If you want to email me it's jeremy@whistlekick.com. And I do have to say, and I left it out of the top of the show, this is not medical advice don't replace your own joints, I think there's much risk in that but I gotta have some kind of disclaimer in here, this is not medical advice, I'm not a doctor consult with a doctor. For educational purposes only. There. What a



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weird way to end the show, but that's where I'm gonna leave it. Until next time, train hard, smile, and have a great day.