



## Polio Survivors' Page

# TOTAL JOINT REPLACEMENT IN POST-POLIO

*by Marny Eulberg, M.D.*

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My qualifications are that first I am a physician, a family practice physician not an orthopedic surgeon, so I'll give you the generalities of the surgery not the nitty-gritty of how many parts there are or where the screws go. Secondly I am a polio survivor and had a total joint replacement done in March of this year (1992).

The primary reason for a total joint replacement, in fact pretty much the only reason is severe arthritis of the affected joint. Occasionally the same procedure is used for a severe fracture that cannot be fixed any other way. Several joints can be replaced the most common are hip, knee and finger. There are some physicians who are doing replacements of wrists, shoulders and ankles. The technology for the last three is still being developed so physicians have not had as much experience but it is a possibility.

There are limitations about total joint replacement in folks who've had polio; when a joint is removed, part of the bones and ligaments holding the bones together are removed and replaced with plastic or metal parts. It now depends on your muscles to hold the joint in place and keep it from dislocating. So it is not generally appropriate nor will it be as useful and work for you if you have a joint replacement in a polio affected extremity, unless you have fairly decent muscles around that joint. If you have a very weak leg and you have arthritis in that knee or hip a total joint replacement may not be a good choice.

Fortunately joints that have not carried much weight do not get arthritis nearly as often, particularly the wear and tear of degenerative arthritis. Total joint replacement can be useful for folks who had polio if it is in their good leg, a joint that's wearing out from doing work for two legs all these years. It's not the total answer, it's not without problems and risks. We don't know how long the parts last. They have been doing total hips for 25 years, total knees for 15-20 years before they wear out. We're not exactly sure how many times it can be redone...each time some bone is removed so there's probably some limit as to how many times a joint can be replaced. In general orthopedic surgeons are going to want you to wait as long as possible, be as old as possible and still be in good health in order to survive the surgery and recover from it well. Surgeons are reluctant to do surgery on anyone less than 40 or 50 because we don't know how long the parts will last.

After the surgery intensive physical therapy is required to learn how to use the joint and to strengthen the muscles around the joint to get the range of motion back.

There are risks as it is a big surgery: 1) 50% chance of getting blood clots, so anticoagulants are used to thin the blood; 2) there is a chance of infection and if we get infection where we have replacement hardware it is difficult to get rid of and sometimes to get rid of the infection we have to take all the parts out then wait six months to a year before another total joint replacement can be done. Surgeons do use antibiotics before and after surgery, they wear all kinds of fancy headgear, the air is recirculated through

**ANSWER:** In a joint replacement you'll lose the bone and nerve fibers in the bone, but you still have nerve fibers in the skin and muscle around that joint. So you may not get total pain relief. One of the signs if the joint is loosening up is pain.

**QUESTION:** Sometimes surgeons use ground bone graft in re-replacement of the joint. Why don't they use ground bone instead of cement in the first place?

**ANSWER:** It takes longer to heal. The cement hardens fast, within a day or two and allows the joint to be weight bearing quicker. The ground bone has to heal just like a broken bone so it takes longer before it can bear weight. If you had polio you're going to have to be hopping on your weak leg or trying to walk with crutches or a walker, so you need to have that leg fairly functional as soon as possible.

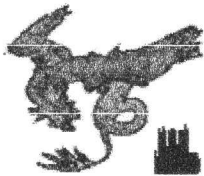
**QUESTION:** What are antibiotic marbles?

**ANSWER:** Antibiotic marbles are just another way of getting the antibiotic right into the joint rather than trying to give it in the vein where it has to go all through the body and hope it gets the right concentration into the right joint. Antibiotic marbles are a way of slowly releasing the antibiotic over a period of time.

**QUESTION:** How soon can you expect relief from pain after surgery?

**ANSWER:** In hip surgery it's usually much faster than knee surgery. Sometimes after hip replacement the pain is gone immediately. In knee replacement it will probably take three to six months before you can say, "Ahh, yes, that's better. I'm glad I did it."

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This site is now maintained by Chris Salter [Email [linpolioweb@loncps.demon.co.uk](mailto:linpolioweb@loncps.demon.co.uk)] of the [Lincolnshire Post-Polio Network](#).

Original Document Preparation: [Tom Dempsey](#).

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special filters in the room. 3) Joint replacement surgery is a bloody surgery so surgeons have their patients donate two or three pints of their own blood before surgery. 4) Also parts can loosen, they are put in with glue but over time normal bones around the glue tend to loosen so over the years there is a 10-15% chance of parts loosening.

It's not all bad. Obviously if you're hurting a lot, getting so you can't do the things you want to do, have restriction of motion so you can't bend down to get things anymore or sit comfortably anymore, or get in and out of the car comfortably anymore. If the surgery is successful, which it is 90 to 99% of the time, you lose the pain and gain more mobility. But you lose the ligaments that were there for stability so it's not quite the same. It's going to feel and be a little more wobbly, it's more likely it may give out in extreme positions. You also lose proprioception [which] is in a joint and also the muscles where you have nerves that tell you where you are in space; tell you whether that joint is straight or bent or partially bent. You can relearn to use some of the other sensors in your muscles but you'll probably feel a little more unsteady on that leg. That can be a problem if that's been your good leg, the one you've always depended on.

Unlike some of you who had orthopedic surgery when you were children or younger, 30 or 40 years ago you were put in a cast for six weeks to six months to heal; now orthopedic surgeons are aware of how important motion is and how joints get stiff. Now, shortly after surgery, there are machines called CPM's continuous passive motion, that will start bending your knee up and down continuously for several hours a day; there also are CPM machines for shoulders and other kinds of joints.

Some of the parts of joint replacement are put in with cement, some are cementless. There are advantages and disadvantages of both. Cemented, the joint is weight bearing much more quickly because it's pretty solid within a few days after surgery. Cementless, the bone has to grow into the metal parts and takes the same amount of time to weight on it as a bad break - three to six months before it's full weight bearing.

As smart as we think we are, we are not as good at doing anything as the Creator was when he made the parts in the first place. None of the things we do work as well. We try to duplicate a joint, we try to get close, but the original parts were designed best.

**QUESTION:** Why don't they do as many wrist replacements?

**ANSWER:** A wrist is not a weight bearing joint so if it is affected with arthritis it's usually rheumatoid which can affect the whole hand. A wrist is a more complicated joint unlike the hip, which is a ball and socket joint. A knee is actually a lot harder than the hip because a knee is not just bending and straightening when you step on it each time, you also turn it in a little bit and out a little bit so it's been hard to duplicate that internal and external rotation. With a wrist you go up and down, sideways and all sorts of combinations of those movements. In the forearm there are two bones; in your wrist there are six so to duplicate that has been a difficulty.

**QUESTION:** Is anyone doing any joint replacements in the spine?

**ANSWER:** No, not that I know of.

**QUESTION:** What are some of the consequences of knee joint replacement surgery?

**ANSWER:** The major consequences despite weakened muscles, is the knee may be a little more likely to dislocate, may pop apart and not line up right. But, in three to six months after the surgery you're going to know that. You'll probably do okay unless you get into a real extreme situation where you start falling and putting unusual forces around your knee that might dislocate somebody's normal knee too.

**QUESTION:** Will total joint replacement eliminate all the pain in the joint?