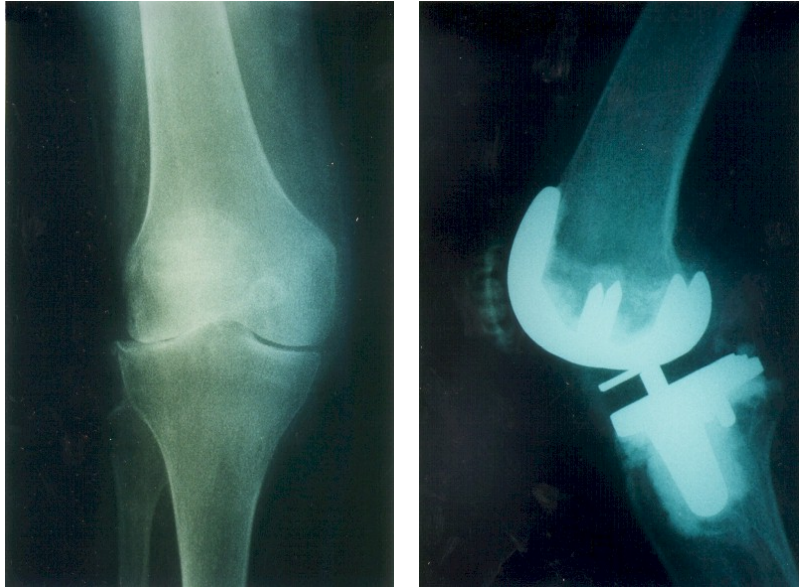




## Total Knee Replacement



Total knee replacement, or total knee arthroplasty as it is sometimes called, is a type of major surgery in which the diseased parts of the joint are removed and replaced with artificial parts called the prosthesis. Over the last 30 years, since total knee replacement was first done in the United States, there have been many changes in the design of different types of prostheses. In fact, at this point in time there are so many companies making a wide variety of prostheses that it is almost like trying to select a new car. Every company, of course, claims that their particular model is the best and has the longest life expectancy, so to speak. There are literally dozens of different types of total knee replacement prostheses on the market today. They seem to be increasing in number as years go by.

Therefore, how does the particular surgeon make a choice as to what prosthesis would be best in your individual case? What usually happens is that the joint replacement surgeon selects one or two companies whose products appeal to him because of their particular design and how they suit his particular surgical technique. The surgeon becomes very familiar with all of the intricacies of the particular type of knee replacement prosthesis. It could be compared very much with our selection of automobiles. Owners are often very loyal to one particular company, such as General Motors or Ford, and perhaps through their whole driving lifetime may never go outside that particular company for a vehicle. We all are very familiar with this occurrence. So, if a particular surgeon has chosen a good company that meets his needs and he becomes very familiar with their product and very comfortable with the technique necessary to implant it, he or she can become very good at inserting that type of total knee replacement prosthesis.

Another limiting factor is financial because it is impossible for any hospital to have more than a few of the different types of total knee replacement systems. All of the instrumentation for inserting a particular prosthesis is different, one prosthesis from the other. The inventory of prostheses that the hospital needs to keep on hand can be daunting. Joint prostheses are very expensive, as one can imagine, and it would not be unusual for a prosthesis to cost anywhere from \$4,000 to \$6,000.



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Major advancements in total knee replacements over the past 25 to 30 years have offered patients with severe knee joint pain the ability to lead a reasonable full and active life with minimal or no pain in the affected knee joint.

A replacement prosthesis for the knee joint includes a rounded, somewhat U-shaped part that fits over the end of the femur or the upper part of the joint. A flatter piece, which is also metal like the upper portion, is placed on the lower aspect of the knee joint and this has a stem that fits down into the bone. A very special type of polyethylene plastic is inserted between the two metal portions of the new knee joint. This keeps the metal portions from touching and is the middle component of the system. In most cases, the surface of the patella or knee cap is also replaced with a polyethylene piece.

It would be a mistake to think that a replacement knee joint is ever as good as a normal knee joint. You have to follow directions and take good care of it for it to be able to do a good job for you for as long as you will need it. We find that those patients who are able to strengthen the operated leg adequately and take proper care of the new knee joint do the best over a long period of time. The prosthesis is an amazing solution to knee pain that has stood the test of time, but it still cannot withstand the same amount of force as a normal knee joint.

One of the most important things for a patient to remember about having knee replacement surgery is that you will be making a commitment to work extremely hard to restore full straightening of the knee as well as bending the knee back to a right angle or 90 degrees. The patient will need to work very hard on strengthening the muscles on the operated leg as this is what makes the total knee replacement work. To have a total knee replacement and very inadequate muscles in the operated leg is much like having a new car with no motor in it. It frequently takes 6-12 months for the person to really be able to restore full strength and functioning to the operated lower extremity. Some patients of course, will be able to do this sooner than others. It also depends a lot on a patient's overall condition before surgery takes place.

When a person decides it's time to have a total knee replacement, it is extremely important to become an active participant in his or her own care. We welcome patient's questions and feel that the person is entitled to know what alternative treatments may be available to them. False expectations about recovery and life after surgery can cause frustration and disappointment and affect the progress of recovery and rehabilitation.

A walker or two crutches are always required after a total knee replacement and are used for at least a month, and possibly longer, after the surgery is performed.

Joint replacement surgery has been successful in more than 9 out of 10 people.

Complications can and do develop after knee replacement surgery and include infection and blood clots, to name two of the most serious. Fortunately they only occur in a small number of patients, but to be well informed a patient must be aware of these things as possibilities.

We encourage patients to increase activities as able based primarily on muscle tone. It is usually three or four months before a person can resume low impact aerobic activities such as walking, golfing, bowling and swimming. Jogging and high impact activity sports are never permitted. The new knee joint is artificial and although it is made of very durable materials, it can be subjected to wear and tear changes.

Total knee replacement certainly has stood the test of time and is one of the more common procedures that we do. Some of our most grateful patients have been total knee replacement patients. Joint replacement surgery is one of the most gratifying procedures that we do, both for



the patients and for myself as a joint replacement surgeon. With continued advancements of surgical techniques and materials, the future should hold even greater promise than the present.

### Partial Knee Replacement

Partial replacement of the knee joint is often referred to as unicompartmental or unicondylar knee arthroplasty. In 2001 about 10 thousand unicompartmental knee arthroplasties were performed in the United States.

These partial knee replacements have been around for 25 years or more. It has however only been in the last few years that procedure has been made less invasive.

As most patients know, traditional knee replacement is done through a fairly long incision in the front of the knee with a hospital stay of 4 to 5 days and a period of recovery of at least 1 or 2 months and sometimes extending to 3 months. A significant part of this time is spent using a walker or crutches.

Minimally invasive or partial knee replacement allows the prosthesis to be inserted through a smaller incision and usually with a faster recovery than the complete knee replacement procedure.

The partial knee replacement is not for everybody. Most of our patients with arthritis have disease in all three of the knee compartments. This partial knee replacement applies only to patients who have disease in 1 of the knee compartments either the inner or outer aspects of the knee termed medial or lateral.

Additional information can be obtained by patients at the following web site:  
[www.orthop.washington.edu/faculty/Leopold/miniknee/](http://www.orthop.washington.edu/faculty/Leopold/miniknee/).

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## FAQs

### QUESTION:

**How many total knee replacements are done each year?**

### ANSWER:

It seems like an awful lot of people are having their knee replaced.

About 267,000 total knee replacements are performed in the United States each year.

Over the years, we who do total knee replacements have noticed the number of total knee replacements has greatly outpaced the number of total hip replacements. At this point, most orthopaedic surgeons who do joint replacements of the knee and the hip, perform about 6 or 7 knee replacements for each total hip replacement. This has been my personal experience also.

### QUESTION:

**How does a normal knee work?**

### ANSWER:

First, it must be stated that a normal knee is not a hinge. The knee is the largest joint in the



body. The knee is composed of the thigh bone or femur, which moves on the upper end of the shin bone (tibia) and the knee cap (patella), which moves in a groove on the front of the femur. Very large ligaments called collateral ligaments surround the knee provide stability as do the anterior and posterior cruciate ligaments, which are deep inside the knee.

The long thigh muscles give the knee strength. The joint surfaces within the knee are covered with articular cartilage, a smooth and tough substance that cushions the bones and enables them to move easily on one another.

The lining of the knee joint also called the synovial membrane, produces joint fluid that lubricates the knee and reduces friction in a healthy knee to less friction than on wet ice.

The meniscus, or joint cartilage as patients call them, are gristle like discs or wedges that help stabilize the knee and also keep the bone of the femur and tibia separated.

The knee is not a hinge. Although it does bend through a range of motion sometimes reaching 140 degrees, it also slides one surface on the other and rotates significantly.

The knee's function is extremely complicated compared with the more simple ball and socket relationship of the hip.

### **QUESTION:**

**How long do I have to stay in the hospital after knee replacement surgery?**

### **ANSWER:**

It varies quite a lot in my experience, and it is only possible to give some generalizations. I have had some patients go home as early as the third day after surgery. I would say the average is 4 days in patients under 65, and I find that older patients frequently need to go to the rehab section of the hospital where they might spend up to an additional week regaining strength and range of motion in the operated knee.

The less invasive surgery technique that I try to use in all of our patients has made a big difference in how quickly people are able to go home.

### **QUESTION:**

**I have heard that blood clots can occur after total knee replacement surgery. What do you do to prevent them?**

### **ANSWER:**

Blood clots in the legs can occur following total knee replacements and are a very serious complication. The medical name for this condition is deep vein thrombosis. It can occur either in the operated leg or the non-operated leg.

There has been an increasing awareness of this problem in recent years.

This is what I personally do to try to prevent and or reduce the complication of blood clots:

I try to keep the foot of the bed elevated postoperatively at all times for several days. Elastic support stockings are worn by the patient and a pumping device is used on both lower extremities from the ankles to the thigh, which intermittently compresses the legs to move blood



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along and prevent pooling. Coumadin, a blood thinner, is given on the night of surgery for the first time and is continued for 30 days after surgery.

I get the person up walking as soon as possible, which helps reduce the incidence of blood clots. Continuous passive motion machine (CPM) is used to help decrease leg swelling by elevating the leg and improving venous circulation by moving the muscles of the leg.

We also instruct patients to move the feet and ankles immediately after surgery to increase blood flow in the leg muscles and prevent swelling and blood clots.

## **QUESTION:**

**When will I be able to drive a car after total knee surgery?**

## **ANSWER:**

Most of my patients resume driving about 4 to 6 weeks after surgery. At this time, the knee is bending sufficiently so the patient can enter and sit comfortably in the car and control of the muscles is sufficient to allow for movement of the knee and the lower extremity for operating the vehicle.

## **QUESTION:**

**Do I need to take antibiotics after total knee replacement when I go to the dentist?**

## **ANSWER:**

The most common cause of infection following total knee replacement surgery is from bacteria in the blood stream that might enter the body during dental procedures, urinary tract procedures, or through skin infections.

These bacteria, carried to the knee in the blood stream, can lodge around the knee prosthesis and cause infection to begin in the joint.

My policy is that following total knee replacement surgery the patient should take antibiotics before dental work or any surgical procedure that could allow bacteria to enter the blood stream. This should be done for the rest of the patient's life.



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