

## ***ADVANTAGE ORTHOPAEDICS, P.C.***

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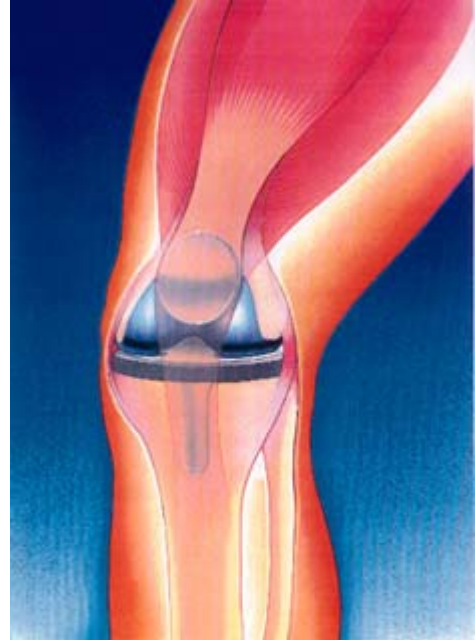
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### **Total Knee Replacement**

If your knee is severely damaged by arthritis or injury, it may be hard for you to perform simple activities such as walking or climbing stairs. You may even begin to feel pain while you're sitting or lying down.

If medications, changing your activity level, and using walking supports are no longer helpful, you may want to consider total knee replacement surgery. By resurfacing your knee's damaged and worn surfaces, total knee replacement surgery can relieve your pain, correct your leg deformity, and help you resume your normal activities.

One of the most important orthopaedic surgical advances of this century, knee replacement was first performed in 1968. Improvements in surgical materials and techniques since then have greatly increased its effectiveness. About 267,000 total knee replacements are performed each year in the United States. Whether you have just begun exploring treatment options or have already decided with your orthopaedic surgeon to have total knee replacement surgery, this booklet will help you understand more about this valuable procedure.



### **Common Causes of Knee Pain and Loss of Knee Function**

The most common cause of chronic knee pain and disability is *arthritis*. Osteoarthritis, rheumatoid arthritis, and traumatic arthritis are the most common forms.

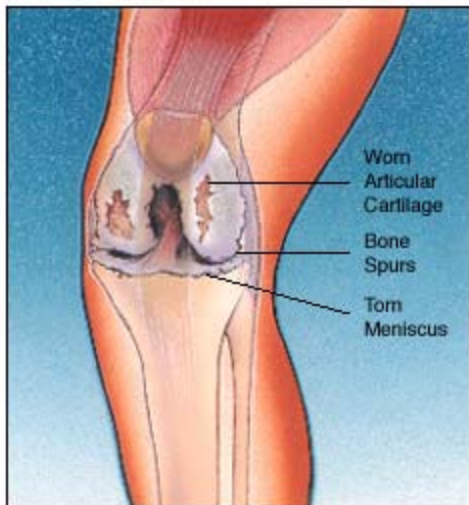


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Knee with Arthritis

**Osteoarthritis** usually occurs after the age of 50 and often in an individual with a family history of arthritis. The cartilage that cushions the bones of the knee softens and wears away. The bones then rub against one another causing knee pain and stiffness.

**Rheumatoid Arthritis** is a disease in which the synovial membrane becomes thickened and inflamed, producing too much synovial fluid which over-fills the joint space. This chronic inflammation can damage the cartilage and eventually cause cartilage loss, pain and stiffness.

**Post Traumatic Arthritis** can follow a serious knee injury. A knee fracture or severe tears of the knee's ligaments may damage the articular cartilage over time, causing knee pain and limiting knee function.

### **Is Total Knee Replacement for You?**

The decision whether to have total knee replacement surgery should be a cooperative one between you, your family, your family physician, and your orthopaedic surgeon. Your physician may refer you to an orthopaedic surgeon for a thorough evaluation to determine if you could benefit from this surgery.

Reasons that you may benefit from total knee replacement commonly include:



- Severe knee pain that limits your everyday activities, including walking, going up and down stairs, and getting in and out of chairs. You may find it hard to walk more than a few blocks without significant pain and you may need to use a cane or walker.
- Moderate or severe knee pain while resting, either day or night.



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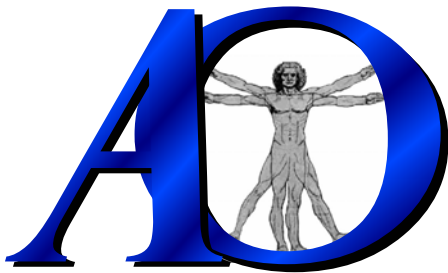
- Chronic knee inflammation and swelling that doesn't improve with rest or medications.
- Knee deformity—a bowing in or out of your knee.
- Knee stiffness—inability to bend and straighten your knee.
- Failure to obtain pain relief from non-steroidal anti-inflammatory drugs. These medications, including aspirin and ibuprofen, often are most effective in the early stages of arthritis. Their effectiveness in controlling knee pain varies greatly from person to person. These drugs may become less effective for patients with severe arthritis.
- Inability to tolerate or complications from pain medications.
- Failure to substantially improve with other treatments such as cortisone injections, physical therapy, or other surgeries.

Most patients who undergo total knee replacement are age 60 to 80, but orthopaedic surgeons evaluate patients individually. Recommendations for surgery are based on a patient's pain and disability, not age. Patients as young as age 16 and older than 90 have undergone successful total knee replacement.

### **The Orthopaedic Evaluation**

The orthopaedic evaluation consists of several components:

- *A medical history*, in which your orthopaedic surgeon gathers information about your general health and asks you about the extent of your knee pain and your ability to function.
- *A physical examination* to assess your knee motion, stability, and strength and overall leg alignment.
- *X-rays* to determine the extent of damage and deformity in your knee.
- Occasionally blood tests, an MRI (Magnetic Resonance Imaging) or a bone scan may be needed to determine the condition of the bone and soft tissues of your knee.



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Your orthopaedic surgeon will review the results of your evaluation with you and discuss whether total knee replacement would be the best method to relieve your pain and improve your function. Other treatment options including medications, injections, physical therapy, or other types of surgery also will be discussed and considered.

Your orthopaedic surgeon also will explain the potential risks and complications of total knee replacement, including those related to the surgery itself and those that can occur over time after your surgery.

## Realistic Expectations About Knee Replacement Surgery

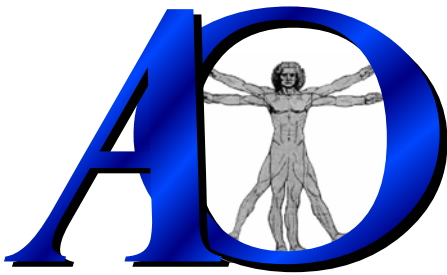
An important factor in deciding whether to have total knee replacement surgery is understanding what the procedure can and can't do.

More than 90 percent of individuals who undergo total knee replacement experience a dramatic reduction of knee pain and a significant improvement in the ability to perform common activities of daily living. But total knee replacement won't make you a super-athlete or allow you to do more than you could before you developed arthritis.

Following surgery, you will be advised to avoid some types of activity for the rest of your life, including jogging and high impact sports.

<b>Dangerous Activity After Surgery</b> jogging or running • contact sports jumping sports • high impact aerobics
<b>Activity Exceeding Usual Recommendations After Surgery</b> vigorous walking or hiking • skiing tennis • repetitive lifting exceeding 50 lbs. repetitive aerobic stair climbing
<b>Expected Activity After Surgery</b> recreational walking • swimming golf • driving • light hiking recreational biking • ballroom dancing normal stair climbing

With normal use and activity, every knee replacement develops some wear in its plastic cushion. Excessive activity or weight may accelerate this normal wear and cause the knee replacement to loosen and become painful. With appropriate activity modification, knee replacements can last for many years.



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### **How Your New Knee is Different**

You may feel some numbness in the skin around your incision. You also may feel some stiffness, particularly with excessive bending activities. Improvement of knee motion is a goal of total knee replacement, but restoration of full motion is uncommon. The motion of your knee replacement after surgery is predicted by the motion of your knee prior to surgery. Most patients can expect to nearly fully straighten the replaced knee and to bend the knee sufficiently to go up and down stairs and get in and out of a car. Kneeling is usually uncomfortable, but it is not harmful. Occasionally, you may feel some soft clicking of the metal and plastic with knee bending or walking. These differences often diminish with time and most patients find these are minor, compared to the pain and limited function they experienced prior to surgery.

Your new knee may activate metal detectors required for security in airports and some buildings. Tell the security agent about your knee replacement if the alarm is activated.



After surgery, make sure you also do the following:

- Participate in regular light exercise programs to maintain proper strength and mobility of your new knee.
- Take special precautions to avoid falls and injuries. Individuals who have undergone total knee replacement surgery and suffer a fracture may require more surgery.
- Notify your dentist that you had a knee replacement. You should be given antibiotics before all dental surgery for the rest of your life.



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- See your orthopaedic surgeon periodically for a routine follow-up examination and X-rays, usually once a year.

## **Preparing for Surgery**

**Medical Evaluation** If you decide to have total knee replacement surgery, you may be asked to have a complete physical by your family physician several weeks before surgery to assess your health and to rule out any conditions that could interfere with your surgery.

**Tests** Several tests, such as blood samples, a cardiogram, and a urine sample may be needed to help your orthopaedic surgeon plan your surgery.

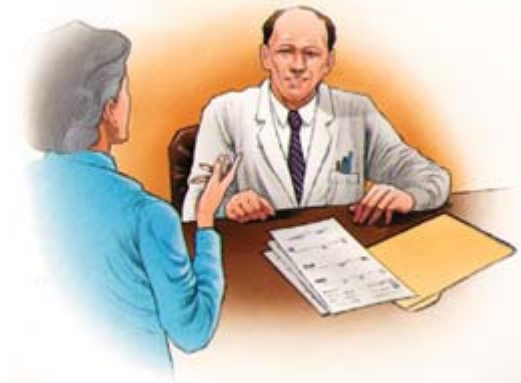
**Preparing Your Skin and Leg** Your knee and leg should not have any skin infections or irritation. Your lower leg should not have any chronic swelling. Contact your orthopaedic surgeon prior to surgery if either is present for a program to best prepare your skin for surgery.

**Blood Donation** You may be advised to donate your own blood prior to the surgery. It will be stored in the event you need blood after your surgery.

**Medications** Tell your orthopaedic surgeon about the medications you are taking. He or she will tell you which medications you should stop taking and which you should continue to take before surgery.

**Dental Evaluation** Although the incidence of infection after knee replacement is very low, an infection can occur if bacteria enter your bloodstream. Treatment of significant dental diseases (including tooth extractions and periodontal work) should be considered before your total knee replacement surgery.

**Urinary Evaluations** A preoperative urological evaluation should be considered for individuals with a history of recent or frequent urinary infections. For older men with prostate disease, required treatment should be considered prior to knee replacement surgery.





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***Social Planning*** Though you will be able to walk on crutches or a walker soon after surgery, you will need help for several weeks with such tasks as cooking, shopping, bathing, and doing laundry. If you live alone, your surgeon's office and a social worker or a discharge planner at the hospital can help you make advance arrangements to have someone assist you at home. They also can help you arrange for a short stay in an extended care facility during your recovery, if this option works best for you.

***Home Planning*** Several suggestions can make your home easier to navigate during your recovery. Consider:



- Safety bars or a secure handrail in your shower or bath.
- Secure handrails along your stairways.
- A stable chair for your early recovery with a firm seat cushion (height of 18-20 inches), a firm back, two arms, and a footstool for intermittent leg elevation.
- A toilet seat riser with arms, if you have a low toilet.
- A stable shower bench or chair for bathing.
- Removing all loose carpets and cords.
- A temporary living space on the same floor, because walking up or down stairs will be more difficult during your early recovery.

### **Your Surgery**

You will most likely be admitted to the hospital on the day of your surgery. After admission, you will be evaluated by a member of the anesthesia team. The most common types of anesthesia are general anesthesia, in which you are asleep throughout the procedure, and spinal or epidural



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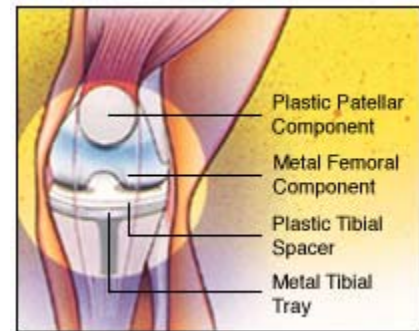
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anesthesia, in which you are awake but your legs are anesthetized. The anesthesia team with your input will determine which type of anesthesia will be best for you.

The procedure itself takes about two hours. Your orthopaedic surgeon will remove the damaged cartilage and bone and then position the new metal and plastic joint surfaces to restore the alignment and function of your knee.

Many different types of designs and materials are currently used in total knee replacement surgery. Nearly all of them consist of three components: *the femoral component* (made of a highly polished strong metal), the *tibial component* (made of a durable plastic often held in a metal tray), and the *patellar component* (also plastic).



After surgery, you will be moved to the recovery room, where you will remain for one to two hours while your recovery from anesthesia is monitored. After you awaken, you will be taken to your hospital room.

## Your Stay in the Hospital

You will most likely stay in the hospital for several days. After surgery, you will feel some pain, but medication will be given to you to make you feel as comfortable as possible. Walking and knee movement are important to your recovery and will begin immediately after your surgery.

To avoid lung congestion after surgery, you should breathe deeply and cough frequently to clear your lungs.

Your orthopaedic surgeon may prescribe one or more measures to prevent blood clots and decrease leg swelling, such as special support hose, inflatable leg coverings (compression boots), and blood thinners.

To restore movement in your knee and leg, your surgeon may use a knee support that slowly moves your knee while you are in bed. The device, called a continuous passive motion (CPM) machine, decreases leg swelling by elevating your leg and improves your venous circulation by moving the muscles of your leg.

Foot and ankle movement is encouraged immediately following surgery to also increase blood flow in your leg muscles to help prevent leg swelling and blood clots. Most





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patients begin exercising their knee the day after surgery. A physical therapist will teach you specific exercises to strengthen your leg and restore knee movement to allow walking and other normal daily activities soon after your surgery.

## **Possible Complications After Surgery**

The complication rate following total knee replacement is low. Serious complications, such as a knee joint infection, occur in less than 2 percent of patients. Major medical complications, such as heart attack or stroke occur even less frequently. Chronic illnesses may increase the potential for complications. Although uncommon, when these complications occur they can prolong or limit your full recovery.

Blood clots in the leg veins are the most common complication of knee replacement surgery. Your orthopaedic surgeon will outline a prevention program, which may include periodic elevation of your legs, lower leg exercises to increase circulation, support stockings, and medication to thin your blood.

Discuss your concerns thoroughly with your orthopaedic surgeon prior to surgery.

## **Avoiding Problems After Surgery**

***Blood Clot Prevention*** Follow your orthopaedic surgeon's instructions carefully to minimize the potential of blood clots which can occur during the first several weeks of your recovery.

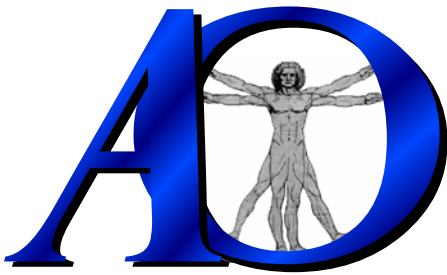
Warning signs of possible blood clots in your leg include:

- Increasing pain in your calf.
- Tenderness or redness above or below your knee.
- Increasing swelling in your calf, ankle, and foot.

Warning signs that a blood clot has travelled to your lung include:

- Sudden increased shortness of breath.
- Sudden onset of chest pain.
- Localized chest pain with coughing.

Notify your doctor immediately if you develop any of these signs.



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***Preventing Infection*** The most common causes of infection following total knee replacement surgery are from bacteria that enter the bloodstream during dental procedures, urinary tract infections, or skin infections. These bacteria can lodge around your knee replacement and cause an infection.

***Following your surgery, you should take antibiotics prior to dental work or any surgical procedure that could allow bacteria to enter your bloodstream.***

Warning signs of a possible knee replacement infection are:

- Persistent fever (higher than 100 degrees orally).
- Shaking chills.
- Increasing redness, tenderness, or swelling of the knee wound.
- Drainage from the knee wound.
- Increasing knee pain with both activity and rest.

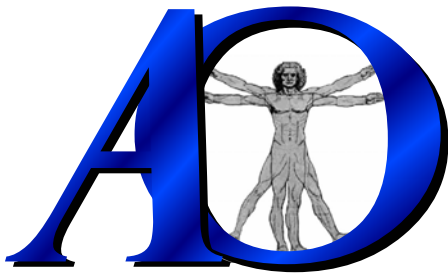
Notify your doctor immediately if you develop any of these signs.



***Avoiding Falls*** A fall during the first few weeks after surgery can damage your new knee and may result in a need for further surgery. Stairs are a particular hazard until your knee is strong and mobile. You should use a cane, crutches, a walker, hand rails, or someone to help you until you have improved your balance, flexibility, and strength.

Your surgeon and physical therapist will help you decide what assistive aides will be required following surgery and when those aides can safely be discontinued.

### **Your Recovery at Home**



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The success of your surgery also will depend on how well you follow your orthopaedic surgeon's instructions at home during the first few weeks after surgery.

***Wound Care*** You will have stitches or staples running along your wound or a suture beneath your skin on the front of your knee. The stitches or staples will be removed several weeks after surgery. A suture beneath your skin will not require removal.

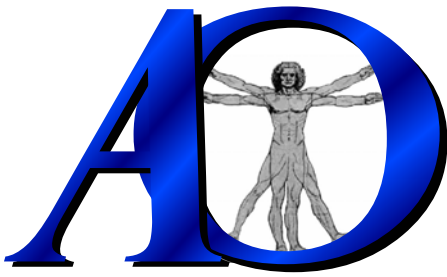
Avoid soaking the wound in water until the wound has thoroughly sealed and dried. A bandage may be placed over the wound to prevent irritation from clothing or support stockings.

***Diet*** Some loss of appetite is common for several weeks after surgery. A balanced diet, often with an iron supplement, is important to promote proper tissue healing and restore muscle strength.

***Activity*** Exercise is a critical component of home care, particularly during the first few weeks after surgery. You should be able to resume most normal activities of daily living within three to six weeks following surgery. Some pain with activity and at night is common for several weeks after surgery. Your activity program should include:

- A graduated walking program to slowly increase your mobility, initially in your home and later outside.
- Resuming other normal household activities, such as sitting and standing and walking up and down stairs.
- Specific exercises several times a day to restore movement and strengthen your knee. You probably will be able to perform the exercises without help, but you may have a physical therapist help you at home or in a therapy center the first few weeks after surgery.

Driving usually begins when your knee bends sufficiently so you can enter and sit comfortably in your car and when your muscle control provides adequate reaction time for braking and acceleration. Most individuals resume driving about four to six weeks after surgery.



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Your orthopaedic surgeon is a medical doctor with extensive training in the diagnosis and nonsurgical and surgical treatment of the musculoskeletal system, including bones, joints, ligaments, tendons, muscles, and nerves.

This brochure has been prepared by the American Academy of Orthopaedic Surgeons and is intended to contain current information on the subject from recognized authorities. However, it does not represent official policy of the Academy and its text should not be construed as excluding other acceptable viewpoints. Persons with questions about a medical condition should consult a physician who is informed about the condition and the various modes of treatment available. 35M0998 Product No. 03057