

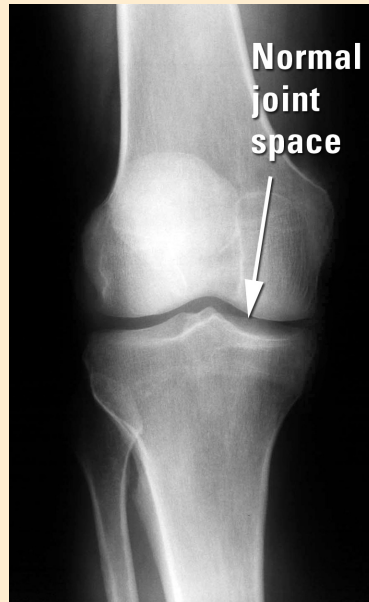
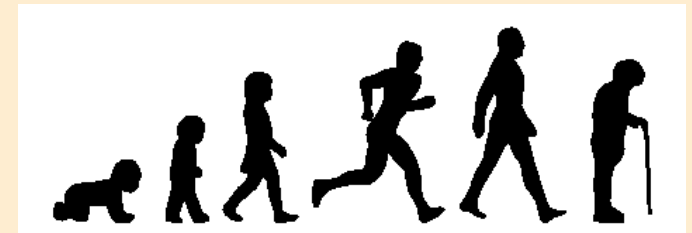
Arthritis of the knee

Arthritis of the knee is a condition in which the smooth gliding surfaces of your knee joint (articular cartilage) have become damaged. This usually results in pain, stiffness, and reduced flexibility. The most common type of arthritis, *osteoarthritis*, typically develops in older patients due to a lifetime of wear and tear. It can also occur in someone whose knee did not develop normally.

Less common forms of arthritis include *traumatic arthritis*, which develops as a result of an injury, such as a fracture in the knee joint that does not heal properly, and *rheumatoid* or *inflammatory arthritis*, which results from an inflammatory condition or autoimmune disease.

In total knee replacement surgery, the portions of the knee joint that contain the damaged surfaces are replaced with biocompatible devices that provide a smooth and painless range of motion. Your surgeon will make every effort to restore your knee to a condition that resembles its healthy preoperative status and to correct any deformity that may have existed. You should discuss what realistic outcome to expect with your surgeon.

Patient Guide to Knee Arthritis and Arthroplasty Surgery



Normal knee

In an x-ray of a normal knee, the articular cartilage (the area labeled "normal joint space") is clearly visible.



Arthritic knee

On this x-ray, the joint space has been greatly reduced. Wherever there is complete loss of cartilage, the condition is known as "bone-on-bone."



Total knee replacement

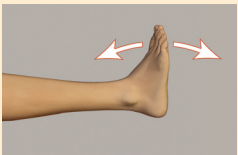
Implants anchored inside the femur (thigh bone) and tibia form a new joint that is held in place by muscles and soft tissues. Implants may be secured to your bone by cement or they may have textured surfaces to encourage bone ingrowth.

Mr Achan - Consultant Orthopaedic Surgeon

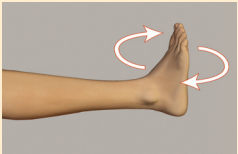
Early postoperative exercises

These exercises are important for increasing circulation to your legs and feet to prevent blood clots. They also are important to strengthen muscles, improve your knee movement, and prevent the formation of scar tissue that would make the knee stiff. Do not give up if some exercises feel uncomfortable at first: they will speed your recovery and reduce your postoperative pain. All exercises should be done SLOWLY.

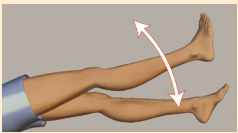
Not every exercise is appropriate for every patient. Your therapist will check off the exercises that are right for you. Unless otherwise indicated, do these exercises every day in three sessions: morning, afternoon, and night.



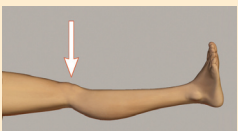
Ankle pumps: Slowly move your foot up and down. Do this exercise several times as often as every 5 or 10 minutes. This exercise can be done while you are either lying down or sitting in a chair. You can begin this exercise immediately after surgery in the recovery room. Keep doing it periodically until you are fully recovered.



Ankle rotations: Move your ankle inward toward your other foot and then outward away from your other foot. Repeat 5 times in each direction. This exercise can be done while you are either lying down or sitting in a chair.

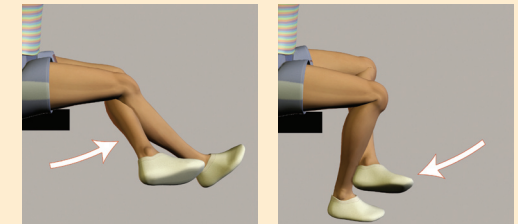
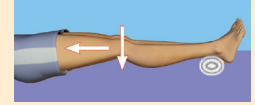


Straight leg raises: Tighten your thigh muscle with your knee fully straightened on the bed. As your thigh muscle tightens, lift your leg several inches off the bed. Hold for 5 to 10 seconds, then slowly lower your leg. Repeat this exercise 10 times for each leg (not just your operated leg).



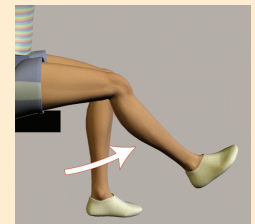
Quad set: Tighten your thigh (quadriceps) muscle. Try to straighten your knee while pushing the back of your knee to the bed. Hold for 5 to 10 seconds. Repeat this exercise 10 times for each leg (not just your operated leg).

Knee-straightening exercises: Place a small, rolled-up towel under your leg just above your heel so that your heel is not touching the bed. Tighten your thigh. Try to fully straighten your knee and to touch the back of your knee to the bed. Hold fully straightened for 5 to 10 seconds. Repeat until your thigh feels fatigued.

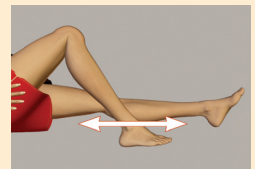


Sitting supported knee bends: Sit on a bed or chair with your thighs supported. Alternately straighten and bend your knee, using the foot of your unoperated leg to push your operated leg up (left-hand illustration) and back (right) as far you can. Hold your knee in the full bent/straightened position for 5 to 10 seconds. Repeat several times until your leg feels fatigued or until you can completely bend and straighten your knee.

Sitting unsupported knee bends: Sit on a bed or chair with your thighs supported. Bend your knee as far as you can until your foot rests on the floor. With your foot lightly resting on the floor, slide your upper body forward in the chair to increase your knee bend. Hold for 5 to 10 seconds. Straighten your knee fully. Repeat several times until your leg feels fatigued or until you can completely bend your knee.



Bed-supported knee bends: Bend your knee as much as possible while sliding your foot on the bed. Hold your knee in a maximally bent position for 5 to 10 seconds and then straighten. Repeat several times until your leg feels fatigued or until you can completely bend your knee.



Advanced exercises and activities

A full recovery will take time. The pain from your problem knee before your surgery and the pain and swelling after surgery have weakened your knee muscles. The following exercises and activities will help your knee muscles recover fully.



Standing knee bends: Standing erect with the aid of a walker or crutches, lift your thigh and bend your knee as much as you can. Hold for 5 to 10 seconds. Then straighten your knee, touching the floor with your heel first. Repeat several times until fatigued.



Assisted knee bends: Lying on your back, place a folded towel over your operated knee and drop the towel to your foot. Bend your knee and apply gentle pressure through the towel to increase the bend. Hold for 5 to 10 seconds. Repeat several times until fatigued.

Knee exercises with resistance: You can perform any of the early or advanced exercises with light weights around your ankle. (Inexpensive wraparound ankle weights with Velcro straps can be purchased at most sporting goods stores.) These resistance exercises usually can begin four to six weeks after your surgery. Use one- to two-pound weights at first; gradually increase the weight as your strength returns.

Stationary bicycle exercise: Exercising on a stationary bicycle is an excellent activity to help you regain muscle strength and knee mobility. Adjust the seat height so that the bottom of your foot just touches the pedal with your knee almost straight. Pedal backwards at first. Pedal forward only after a comfortable backwards cycling motion is possible. As you become stronger (at about 4 to 6 weeks) slowly increase the tension on the pedals. Pedal forward 10 to 15 minutes twice a day, gradually building up to 20 to 30 minutes 3

Getting around after your surgery

Walking with a walker or crutches: Stand comfortably and erect, with your weight evenly balanced on your walker or crutches. Move your walker or crutches forward a short distance. Then move forward, lifting your operated leg so that the heel of your foot touches the floor first. As you move forward, your knee and ankle will bend and your entire foot will rest evenly on the floor. As you complete the step, allow your toe to lift off the floor. Move your walker or crutches again, and reach forward with your hip and knee for your next step. Remember, touch your heel first, then flatten your foot, then lift your toes off the floor. Walk as rhythmically and smoothly as you can, but don't hurry. Adjust the length of your step and speed as necessary to walk with an even pattern. As your muscle strength and endurance improve, you may spend more time walking. Gradually, you will put more and more weight on your leg.

Walking with a cane or single crutch: A walker is often used for the first several weeks to help your balance and to avoid falls. A cane or single crutch is then used for several more weeks until your full strength and balance have returned. Use the cane or crutch in the hand *opposite* the operated knee. You are ready to use a cane or single crutch when you can walk and stand for more than 10 minutes.

Climbing and descending stairs: Going up and down stairs requires both flexibility and strength and so should be avoided if possible until healing is complete. If you must use stairs, you may want to have someone help you until you have regained most of your strength and mobility. Always use a handrail for support **on the side of your unaffected leg** and move up or down the stairs one step at a time:



Going up stairs:

1. Step up on your unaffected leg.
2. Next step up on your operated leg.
3. Finally bring up your crutch(es) or cane(s).

Going down stairs, reverse the process:

1. Put your crutch(es) or cane(s) on the lower step.
2. Next step down on the operated leg.
3. Finally, step down on the unaffected leg.

Remember to always lead **UP** the stairs with your unaffected leg, and **DOWN** the stairs with your operated leg.

Risk factors and complications

There are risks in any type of surgery, not just knee replacement surgery. The *general* risks of knee replacement surgery—such as a bad reaction to anesthesia or heart attack—are no greater than in most other types of surgery. To help prevent your developing a blood clot, your surgeon may prescribe a blood-thinning drug (such as Coumadin or Lovenox). Alternatively, or in addition, pump-driven compressive devices may be applied to your legs following surgery to reduce the chances of clot formation.

The following are among the possible complications following knee replacement surgery. While this list is not complete, it includes complications you should be aware of.

Implant loosening and wear. The typical knee replacement has a 90-95% probability of functioning well for more than 10 years. This is still not forever. Over time the implant may show signs of wear, or it may loosen, and so may require a second replacement (“revision”). Continuing research promises to increase implant lifetimes and make replacement even easier in the future. Feel free to discuss the current state of technology with your surgeon regarding implant designs.

Infection. Although infection in a knee replacement is relatively rare, it is a serious complication that requires urgent, aggressive treatment. Many infections can be avoided. For example, standard dental procedures, including routine cleaning, carry the risk of bacteria entering your bloodstream and infecting your knee implant. Taking an antibiotic approximately an hour before your procedure can greatly reduce or eliminate this risk. The same rule applies to medical procedures such as surgery or even a colonoscopy. Ask your surgeon for guidance when you are scheduled for one of these procedures.

Nerve or blood vessel injury. There is a risk of damage to nerves or blood vessels in knee replacement surgery—as in any other kind of surgery—but it is extremely low. After surgery, sometimes just the position of your leg on the bed or on the CPM machine may cause pressure against a nerve along the outside of your knee. If you experience sudden numbness or weakness in your leg or foot in the days following surgery, notify your nurse or doctor immediately.
