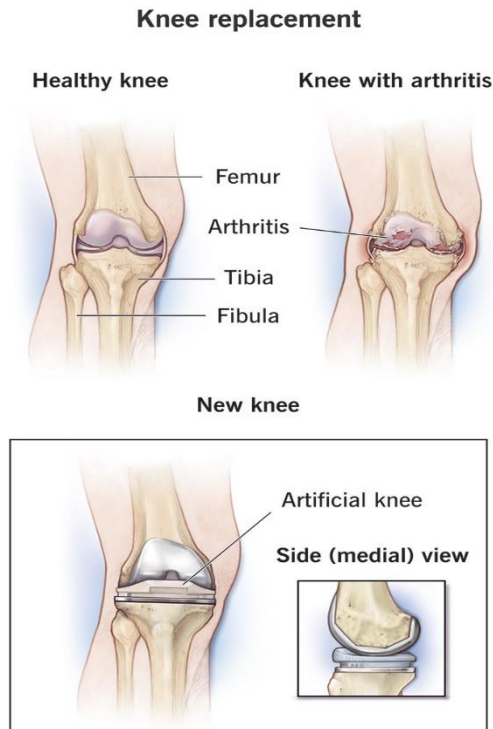




Shohada Educational & Treatment Hospital

Knee Arthroplasty

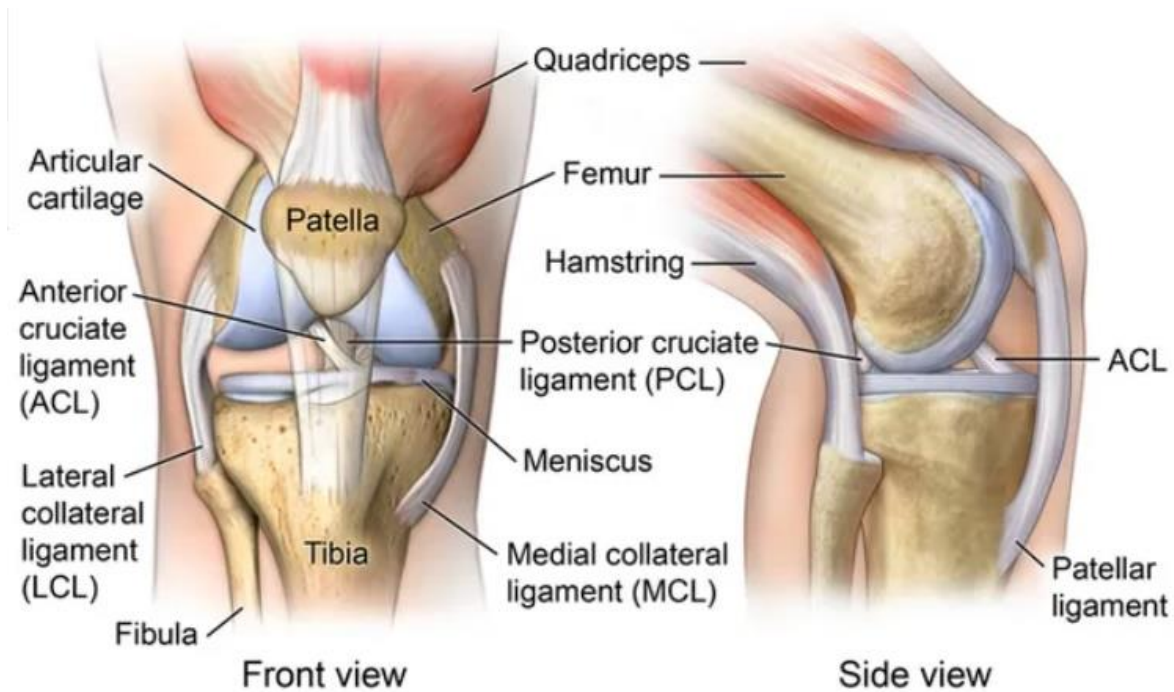


What is a knee replacement surgery?

Knee replacement, also called knee arthroplasty or total knee replacement, is a surgical procedure to resurface a knee damaged by arthritis. Metal and plastic parts are used to cap the ends of the bones that form the knee joint, along with the kneecap. This surgery may be considered for someone who has severe arthritis or a severe knee injury.

Various types of arthritis may affect the knee joint. Osteoarthritis, a degenerative joint disease that affects mostly middle-aged and older adults, may cause the breakdown of joint cartilage and adjacent bone in the knees. Rheumatoid arthritis, which causes inflammation of the synovial membrane and results in excessive synovial fluid, can lead to pain and stiffness. Traumatic arthritis, arthritis due to injury, may cause damage to the cartilage of the knee.

The goal of knee replacement surgery is to resurface the parts of the knee joint that have been damaged and to relieve knee pain that cannot be controlled by other treatments.



Anatomy of the knee

Joints are the areas where 2 or more bones meet. Most joints are mobile, allowing the bones to move. Basically, the knee is 2 long leg bones held together by muscles, ligaments, and tendons. Each bone end is covered with a layer of cartilage that absorbs shock and protects the knee.

There are 2 groups of muscles involved in the knee, including the quadriceps muscles (located on the front of the thighs), which straighten the legs, and the hamstring muscles (located on the back of the thighs), which bend the leg at the knee.

Tendons are tough cords of connective tissue that connect muscles to bones. Ligaments are elastic bands of tissue that connect bone to bone. Some ligaments of the knee provide stability and protection of the joints, while other ligaments limit forward and backward movement of the tibia (shin bone).

The knee consists of the following:

- **Tibia.** This is the shin bone or larger bone of the lower leg.
- **Femur.** This is the thighbone or upper leg bone.
- **Patella.** This is the kneecap.
- **Cartilage.** A type of tissue that covers the surface of a bone at a joint. Cartilage helps reduce the friction of movement within a joint.
- **Synovial membrane.** A tissue that lines the joint and seals it into a joint capsule. The synovial membrane secretes synovial fluid (a clear, sticky fluid) around the joint to lubricate it.

- **Ligament.** A type of tough, elastic connective tissue that surrounds the joint to give support and limits the joint's movement.
- **Tendon.** A type of tough connective tissue that connects muscles to bones and helps to control movement of the joint.
- **Meniscus.** A curved part of cartilage in the knees and other joints that acts as a shock absorber, increases contact area, and deepens the knee joint.

Reasons for the procedure

Knee replacement surgery is a treatment for pain and disability in the knee. The most common condition that results in the need for knee replacement surgery is osteoarthritis.

Osteoarthritis is characterized by the breakdown of joint cartilage. Damage to the cartilage and bones limits movement and may cause pain. People with severe degenerative joint disease may be unable to do normal activities that involve bending at the knee, such as walking or climbing stairs, because they are painful. The knee may swell or "give-way" because the joint is not stable.

Other forms of arthritis, such as rheumatoid arthritis and arthritis that results from a knee injury, may also lead to degeneration of the knee joint. In addition, fractures, torn cartilage, and/or torn ligaments may lead to irreversible damage to the knee joint.

If medical treatments are not satisfactory, knee replacement surgery may be an effective treatment. Some medical treatments for degenerative joint disease may include, but are not limited to, the following:

- Anti-inflammatory medications
- Glucosamine and chondroitin sulfate
- Pain medications
- Limiting painful activities
- Assistive devices for walking (such as a cane)
- Physical therapy
- Cortisone injections into the knee joint
- Viscosupplementation injections (to add lubrication into the joint to make joint movement less painful)
- Weight loss (for obese persons)

There may be other reasons for your doctor to recommend a knee replacement surgery.

Risks of the procedure

As with any surgical procedure, complications can occur. Some possible complications may include, but are not limited to, the following:

- Bleeding
- Infection

- Blood clots in the legs or lungs
- Loosening or wearing out of the prosthesis
- Fracture
- Continued pain or stiffness

The replacement knee joint may become loose, be dislodged, or may not work the way it was intended. The joint may have to be replaced again in the future.

Nerves or blood vessels in the area of surgery may be injured, resulting in weakness or numbness. The joint pain may not be relieved by surgery.

There may be other risks depending on your specific medical condition. Be sure to discuss any concerns with your doctor prior to the procedure.

Before the procedure

- Your doctor will explain the procedure to you and offer you the opportunity to ask any questions that you might have about the procedure.
- You will be asked to sign a consent form that gives your permission to do the procedure. Read the form carefully and ask questions if something is not clear.
- In addition to a complete medical history, your doctor may perform a complete physical examination to ensure you are in good health before undergoing the procedure. You may undergo blood tests or other diagnostic tests.
- Notify your doctor if you are sensitive to or are allergic to any medications, latex, tape, and anesthetic agents (local and general).
- Notify your doctor of all medications (prescribed and over-the-counter) and herbal supplements that you are taking.
- Notify your doctor if you have a history of bleeding disorders or if you are taking any anticoagulant (blood-thinning) medications, aspirin, or other medications that affect blood clotting. It may be necessary for you to stop these medications prior to the procedure.
- If you are pregnant or suspect that you are pregnant, you should notify your doctor.
- You will be asked to fast for eight hours before the procedure, generally after midnight.
- You may receive a sedative prior to the procedure to help you relax.
- You may meet with a physical therapist prior to your surgery to discuss rehabilitation.
- Arrange for someone to help around the house for a week or two after you are discharged from the hospital.

After the procedure

In the hospital

After the surgery you will be taken to the recovery room for observation. Once your blood pressure, pulse, and breathing are stable and you are alert, you will be taken to your hospital room. Knee replacement surgery usually requires an in-hospital stay of several days.

It is important to begin moving the new joint after surgery. A physical therapist will meet with you soon after your surgery and plan an exercise program for you. A continuous passive motion (CPM) machine may be used to begin the physical therapy. This machine moves your new knee joint through its range of motion while you are resting in bed. Your pain will be controlled with medication so that you can participate in the exercise. You will be given an exercise plan to follow both in the hospital and after discharge.

You will be discharged home or to a rehabilitation center. In either case, your doctor will arrange for continuation of physical therapy until you regain muscle strength and good range of motion.

At home

Once you are home, it is important to keep the surgical area clean and dry. Your doctor will give you specific bathing instructions. The stitches or surgical staples will be removed during a follow-up office visit.

To help reduce swelling, you may be asked to elevate your leg or apply ice to the knee.

Take a pain reliever for soreness as recommended by your doctor. Aspirin or certain other pain medications may increase the chance of bleeding. Be sure to take only recommended medications.

Notify your doctor to report any of the following:

- Fever
- Redness, swelling, bleeding, or other drainage from the incision site
- Increased pain around the incision site

You may resume your normal diet unless your doctor advises you differently.

You should not drive until your doctor tells you to. Other activity restrictions may apply. Full recovery from the surgery may take several months.

It is important that you avoid falls after your knee replacement surgery, because a fall can result in damage to the new joint. Your therapist may recommend an assistive device (cane or walker) to help you walk until your strength and balance improve.

Making certain modifications to your home may help you during your recovery. These modifications include, but are not limited to, the following:

- Proper handrails along all stairs
- Safety handrails in the shower or bath
- Shower bench or chair
- Raised toilet seat
- Long-handled sponge and shower hose
- Dressing stick

- Sock aid
- Long-handled shoe horn
- Reaching stick to grab objects
- Removing loose carpets and electrical cords that may cause you to trip
- Avoiding stair-climbing until recommended by your doctor

Your doctor may give you additional or alternate instructions after the procedure, depending on your particular situation.

Reference:

<https://www.hopkinsmedicine.org>