

Knee Replacement

More than 500 000 persons in the United States have knee replacements each year. The most common reason for knee replacement is **osteoarthritis**. Osteoarthritis is destruction of the **cartilage** (supporting tissue between layers of a joint) and can occur at any joint in the body, but the knees are often the first site. Osteoarthritis causes pain, stiffness, limitation of motion, and swelling in the area of the joint that has arthritis. **Rheumatoid arthritis**, destruction of joint cartilage by an immune process, affects joints differently. Persons with rheumatoid arthritis often have deformities in the joints, along with pain, swelling, stiffness, and problems in other areas of their bodies. Referral to an orthopedic surgeon and evaluation for knee replacement may be offered when other treatments for osteoarthritis or rheumatoid arthritis fail. Orthopedic surgeons are doctors with specialized education in the diagnosis and treatment of bone and joint disorders.

TESTING BEFORE KNEE REPLACEMENT

Diagnostic x-rays of persons with osteoarthritis demonstrate collapse of the knee joint, indicating destruction of the cartilage and **meniscus** (fibrous tissue). Magnetic resonance imaging (MRI) may be used for evaluation of knee pain, in addition to x-rays. Knee **arthroscopy**, a surgical procedure, examines the inner surfaces of the knee joint. Knee arthroscopy allows for evaluation and treatment of the ligaments, tendons, and cartilage involved in the knee joint, as well as **debridement** (removing damaged tissues) within the joint. Patients have a medical evaluation by their primary doctor (or specialists, if needed for their specific medical conditions) before knee replacement, since joint replacements are major surgery. This may include **cardiac** (heart) testing, evaluation of lung function, or improving control of high blood pressure and diabetes in order to reduce the chance of complications.

TYPES OF KNEE REPLACEMENT SURGERY

- Total knee replacement uses metal or plastic parts, or a combination (the **prosthesis**), to replace both surfaces of the knee joint and the kneecap (**patella**).
- Partial (**unicompartmental**) knee replacement involves only one side of the knee joint.
- Computer-assisted knee replacement relies on specialized digital technology to guide the procedure.
- Minimally invasive knee replacement uses smaller skin incisions.

COMPLICATIONS OF KNEE REPLACEMENT

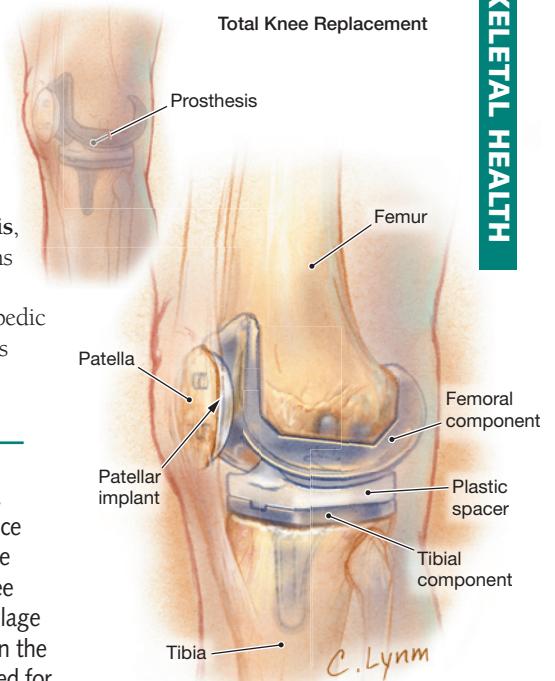
- Infection after knee replacement can be serious. Antibiotics are given before the surgical procedure starts to protect against infection. In severe cases of infection, a person may need to be hospitalized to receive intravenous antibiotics or supportive care. Sometimes the prosthesis has to be removed and specialized antibiotic treatment given before a replacement (a **revision**) is considered.
- Poor pain relief may occur, despite good surgical results.
- Blood clots are a serious complication of joint replacement. Your surgeon will prescribe a blood thinner after the operation (and in some cases, before surgery) to reduce this risk. The use of pneumatic compression stockings and early **ambulation** (movement) also helps lessen the chance of blood clots.
- Prosthesis malfunction may require another procedure to fix or replace the parts.

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FOR MORE INFORMATION

- Arthritis Foundation
www.arthritis.org
- American Academy of Orthopaedic Surgeons
www.aaos.org
- National Institute of Arthritis and Musculoskeletal and Skin Diseases
www.niams.nih.gov

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To find this and previous JAMA Patient Pages, go to the Patient Page Index on JAMA's Web site at www.jama.com. Many are available in English and Spanish. A Patient Page on knee pain was published in the April 18, 2007, issue, and one on osteoarthritis of the knee was published in the February 26, 2003, issue.

Sources: American Academy of Orthopaedic Surgeons; Arthritis Foundation, National Institute of Arthritis and Musculoskeletal and Skin Diseases, World Health Organization

