

Definition: A total knee replacement resurfaces the distal end of the femur (thigh bone) and the proximal end of the tibia (shin bone) with metal and plastic implants. Depending on the condition of the patella (kneecap), the undersurface of the patella may be resurfaced using a plastic button.

Etiology

Arthritis is the most common cause of chronic knee pain leading to total knee replacements. There are many types of arthritis but these are the most common...

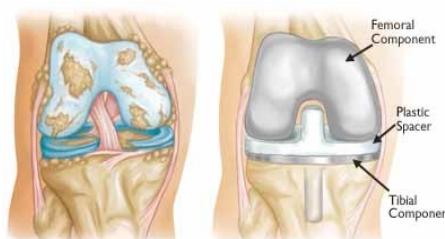
- ◆ Osteoarthritis — Age-related wear and tear to the cartilage between the femur and tibia
- ◆ Rheumatoid Arthritis — Chronic inflammation of the synovial membrane that surrounds the joint, which in turn causes damage to the cartilage
- ◆ Post-Traumatic Arthritis— Arthritis that forms following a serious knee injury

Symptoms

- ◆ Severe knee pain and/or stiffness that limits normal daily activities such as walking and climbing stairs
- ◆ Chronic inflammation and swelling
- ◆ Pain while resting
- ◆ Deformity of the tibia – bowing in or out

Treatment

Conservative treatment for arthritis includes modifying activities to low impact such walking, cycling, swimming and resistance strengthening. Other conservative approaches to reducing arthritic knee pain include ibuprofen and/or NSAIDS or injections of a corticosteroid. Viscosupplementation injections are often used if other methods do not work. This form of injection uses a preparation of a naturally occurring substance found in the synovial fluid surrounding the knee joint. Often times if none of the aforementioned methods work then the next step is a total knee replacement.



Risk Factors

- Blood clots in lower extremities
- Nerve or blood vessel damage
- Infection
- Shortness of breath, chest pain associated with pulmonary embolism(s)
- Continued knee pain

Patient Education

To extend the life of the artificial joint continue daily exercise consisting of walking, cycling, swimming, strengthening exercises approved by therapist. Avoid high impact activities such as running, jumping and twisting. Ice the knee if swelling occurs. Kneeling on the replacement knee is not recommended. Most surgeons recommend the use of prophylactic antibiotics during dental visits.

Post Surgical Treatment/Physical Therapy

Phase 1 (week 1)

- Passive ROM (range of motion) using CPM (continuous passive motion) machine 0-100 degrees as tolerated
- Implement HEP (home exercise program) to include heel slides, quadriceps sets, gluteal sets, ankle pumps
- Review ambulation with assistive devices for correct use, with contact guarding if needed
- Perform mobility and transfer exercises with minimal assistance
- Ice affected knee every 1-2 hours

Phase 2 (weeks 2-5)

- Monitor incision and swelling
- Progress patient from ambulating with wheeled walker to straight cane
- Continue increasing ROM both passively and actively from 0-115 degrees
- Continue with HEP
- Begin ROM on stationary bicycle
- Progress lower extremity strengthening and proprioception exercises
- Increase function in the home

Phase 3 (weeks 6-8)

- Maximize active ROM up to 135 degrees
- Progress patient to ambulate without an assistive device
- Focus on functional strengthening and balance exercises
- Develop more advanced HEP

Prognosis

Surgery usually relieves pain for most patients and they typically do not need assistance with walking or other daily activities. Joint implants usually last 10-15 years before needing replaced.

Sources

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