

Physical Therapy and Total Knee Replacements

Total knee replacement (TKR) is a surgery done to replace a knee joint that has been damaged by injury or arthritis. Each year, approximately 300,000 TKR surgeries are performed in the United States for end-stage arthritis of the knee joint. The aims of TKR are relief of pain and improvement in function. The success of primary TKR in most patients is strongly supported by more than 20 years of follow up data. There appears to be rapid and substantial improvement in the patient's pain, functional status, and overall health-related quality of life in about 90 percent of patients; about 85 percent of patients are satisfied with the results of surgery. There is consensus regarding the following perioperative interventions that improve TKR outcomes: systemic antibiotic prophylaxis, aggressive postoperative pain management, perioperative risk assessment and management of medical conditions, preoperative education and postoperative physical therapy.

Pre-operative education usually includes physical therapy. Often the patient may have tried rehabilitation prior to the surgery to alleviate pain and to strengthen the muscles of the knee. If they do not respond to nonsurgical therapies, then a TKR is considered. The more fit the patient is prior to surgery, the sooner they should recover and to return to their daily activities. Pre-operative rehabilitation focuses on decreasing joint swelling, restoring mobility, strengthening the quadriceps and hamstring muscles, and restoring a normal gait pattern. Physical therapy focus on good functional outcomes include reviewing transfers with the patient, teaching postoperative knee exercises and teaching ambulation with an assistive device. Every patient's goals and expectations (i.e., hopes and fears) should be ascertained before TKR to determine whether their goals are attainable and their expectations are realistic.

Post rehabilitation goals would include increasing the knee range of motion with facilitation of quadriceps control and strength to enable the patient to ambulate with an assistive device. This program is progressed as the surgical wound heals. Equipment recommendations are made for the home for self-care management and bathroom safety. A home physical therapist will continue the rehabilitation goals started in the hospital to practice the needed transfers, bed mobility, ambulation on level and stairs in the home with progressive strengthening exercises. The home therapist also monitors vital signs, medication reactions and communicates this to the physician and other health care staff as needed. The continuum of care for rehabilitation continues at an outpatient facility after the patient is no longer home bound. In this setting, rehabilitation of the knee is progressed while also addressing any abnormal movement patterns.

Based on existing research evidence, TKR is a safe and cost-effective treatment for alleviating pain and restoring physical function in patients who do not respond to nonsurgical therapies. Overall, TKR has been shown to be a very successful, relatively low-risk therapy despite variations in patient health status and characteristics, type of prosthesis implanted, orthopaedic surgeons, and surgical facilities. We can expect the number of TKR surgeries performed each year to increase and the indications for TKR to extend to younger as well as older patients.