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PHYSICAL THERAPY PROTOCOL FOLLOWING TOTAL KNEE ARTHROPLASTY

Guide for the Physical Therapist

Introduction

Total knee arthroplasty is a successful surgical procedure used to improve function and relieve the pain associated with knee osteoarthritis. To restore normal function of the knee following the procedure, the rehabilitation program must focus on controlling pain/inflammation, returning normal knee range-of-motion, improving muscle strength, and re-establishing normal gait.

Typically, total knee replacements are successful, but if the patient participates in activities that are too strenuous for the replaced knee, failure can occur. The patient should not pivot on the operative knee and should avoid torque or twisting forces. Those activities that are permitted and restricted can be found at the end of the rehabilitation program.

The following rehabilitation program is offered to provide consistent, efficient, and goal directed rehabilitation following a total knee arthroplasty. The rehabilitation program is divided into three phases. Each phase has:

1. **GOALS** which should be accomplished prior to progressing to the next phase

2. **TIME FRAME** provided for the purpose of guidance and protection, but it is understood that patients will vary in their speed of recovery and progression should be focused on accomplishment of the goals

3. **TREATMENT RECOMMENDATIONS** are the therapeutic modalities that can be used to safely achieve the goals for each phase

PHASE I: MOBILIZATION

TIME FRAME: Day 1 of out-patient physical therapy to 4 weeks

GOALS:

- Minimize knee pain and inflammation
- Less than 10° knee flexion contracture
- At least 90° of knee flexion
- Independent straight leg raise without a lag
- Normal gait WBAT with assistive device if necessary
- Normal patellofemoral mobility

TREATMENT RECOMMENDATION:

- (ROM exercises and manual therapy continued until full ROM achieved)
- Heel slides/wall slides (active, active assisted)
- Patellar mobilizations
- Tibiofemoral joint mobilizations
- Gait training
- Stair training
- Quad set (NMES as necessary)
- Ankle pumps
- Glut sets
- Hamstring sets
- Knee extension hang/prone lying
- Gastroc/Soleus stretch
- Hamstring stretch
- Quadricep stretch
- SAQ/LAQ (NMES as necessary, PRE's as tolerated)
- Straight leg raise x4 (PRE's as tolerated)
- Standing hip flexion, extension, abduction, adduction (PRE's as tolerated)
- Prone knee bend (PRE's as tolerated)
- Calf raises
- Bridging

- Ice

PRECAUTION:
Knee flexion greater than 90° and a knee flexion contracture of less than 10° should be accomplished by 6 weeks. If a patient is unable to achieve this, the physician should be contacted to determine the course of action necessary.

PHASE II: STRENGTHENING

TIME FRAME: 4-8 weeks

GOALS:
- Full flexion and extension
- Minimal knee pain and inflammation
- Good quad control

TREATMENT RECOMMENDATION:
- Stationary bike-minimal resistance
- Standing knee flexion
- Wall slides
- Step-ups (forward, lateral)
- Terminal knee extension
- Backwards walking for terminal extension

PHASE III: FUNCTION

TIME FRAME: 8-12 Weeks

GOALS:
- Normal gait without assistive device (if patient did not use assistive device before surgery)
- Full quad strength

TREATMENT RECOMMENDATION:
- Cone walking

- Single leg stance-eyes open, eyes closed, uneven surfaces
- Perturbation training