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## Physical Therapy Protocol: Total Knee Arthroplasty

### Philosophy:

Total knee arthroplasty is meant to relieve pain and restore function to a joint with end-stage arthritis. The knee is the largest joint in the body and replacing it is major surgery. This procedure can yield predictable results only with good pre-operative planning and integrated patient participation in rehab. Physical therapy is important prior to undertaking surgery as well as throughout the recovery phase. Pre-operative strength and range-of-motion need to be maximized and are crucial to a good result. Prevention of infection via antibiotic prophylaxis for all dental procedures is necessary. The following are guidelines for successful recovery from total knee arthroplasty.

### *Post-Op 0-2 Weeks*

#### **OSMS Appointments:**

- Medical appointment at 2 weeks
- Physical therapy will begin as directed by your physician and as indicated on your physical therapy order

#### **Rehabilitation Goals:**

- Full weight-bearing unless otherwise specified.
- Full extension and 90° flexion by two weeks.
- Formal PT initiated during the hospital stay. Physical therapy attendance is 2-3 times a week for 3-6 months.
- Acute pain management
- Reduce swelling using ice packs or cryotherapy.

#### **Precautions:**

- Avoid kneeling for 6 months
- Avoid jarring/twisting movements while weight-bearing
- DC assistive device when appropriate LE motor control is achieved (no quad lag with SLR and no signs of quad inhibition)
- Do not get incision wet for 7-10 days

#### **ROM Exercises:**

- 90° flexion by two weeks
- PROM/AAROM/AROM

#### **Suggested Therapeutic Exercises:**

- ROM to begin immediately post-op at 0-60 degrees and advanced 10 degrees daily.



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- Quad activation
- Hip/glute open chain strengthening
- Crutch/gait training
- Weight-shifting/single leg balance, NMES to quadriceps
- Ice is used liberally to diminish swelling.
- Weight-bearing is begun immediately unless restricted by the orthopedist.
- Ankle dorsiflexion while supine

**Cardiovascular Exercises:**

- Stationary bicycle for ROM (No resistance).
- Rocking chair for knee flexion.

**Progression Criteria:**

- Once 90° flexion is achieved, incision is well-healed, quad control is achieved and pain is tolerable

***Phase II, (after Phase I criteria met, usually 2-6 Weeks)***

**OSMS Appointments:**

- Medical appointment at 6 weeks, with films
- Physical therapy continues twice weekly

**Rehabilitation Goals:**

- Independent ambulation with assistive device prn.
- 120° motion expected by six weeks.
- Continue quad/hamstring strengthening.
- Increase functional exercise, balance, coordination, and endurance
- Maintenance of uninvolved side

**Suggested Therapeutic Exercises:**

- Transition from oral narcotics to NSAIDs (Celebrex, Advil, Tramadol, Meloxicam, etc.)
- Mini-squats, modified step-ups and leg presses
- Ankle/hip and upper extremity strengthening
- After 6 weeks, ok to begin using heat modalities

**Cardiovascular Exercises:**

- Stationary bike with resistance, swimming, Nu-step, Elliptical, Stairmaster, Nordic track



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### ***Phase III, (after Phase II criteria met, usually 6+ weeks)***

#### **OSMS Appointments:**

- Medical appointment at 12 weeks, with films
- Physical therapy continues weekly until goals are completed

#### **Rehabilitation Goals:**

- Full, symmetric knee extension.
- Lifelong preservation of knee function.

#### **Suggested Therapeutic Exercises:**

- Preserve range-of-motion using stationary bicycle. OK to begin outdoor as weather permits.
- Advance aerobic training as tolerated (walking, swimming, golf, hiking, Stairmaster, weight training, elliptical trainer)
- Advanced plyometrics

#### **Progression Criteria:**

- Return to sports is allowed after 4 months
- Experienced cross-country skiing, doubles tennis, gardening and downhill skiing allowed.
- Swelling in the knee is common for up to 18 months post-op and should be treated aggressively with ice/rest
- Antibiotic prophylaxis for any dental procedures.
- Return to high impact exercises such as running and jumping is discouraged.
- A lifelong commitment to exercise is encouraged for maintenance of joint arthroplasty