



# Post Operative Knee Arthroscopy

Terms and Definitions:

**ROM** - *Range of Motion*

This defines the amount of mobility in your knee

**PROM** - *Passive Range of Motion*

Mobility exercises remain completely passive without the use of muscles to move your knee

**AAROM** - *Active Assisted (or partner assisted) ROM*

Range of motion with the assistance of a partner or your other leg and minimal use of the muscles of the surgical leg.

**AROM** - *Active Range of Motion*

Range of motion using the muscles of the surgical leg

**POSTD** - *Post-Operative Day*

**NWB** - *Non Weight Bearing*

This means that you should keep all weight off of your leg.

**TTWB** - *Toe Touch Weight Bearing*

This means that you may place a small amount of weight on your leg for balance purposes.

**PWB** - *Partial Weight Bearing*

This means that you may place some weight on your leg. The amount may be defined by your doctor

**WBAT** - *Weight Bearing as Tolerated*

This means that you may place weight on your leg, but to your tolerance. If your leg can not accept your full weight, crutches are advised.

**DVT** - *Deep Vein Thrombosis*

This is a blood clot that can form in a deep vein.

**Proprioception**

This is a term to describe joint sense or your ability to feel how bent or extended your knee is without looking at it.

**Neuromuscular re-education**

This is the term used to train your muscles to fire in patterns that mimic function, such as balancing while standing.

**Open Chain Exercise**

An exercise position in which your leg can be moved about you, such as kicking. Your foot is not on the ground or a platform for these types of exercises

**Closed Chain Exercise**

An exercise position in which your foot is on the ground or a platform, such as a squat or leg press.

**Prehab (Presurgical Phase)**

## Goals:

- Reduce Swelling
- Achieve maximal ROM
- Straight Leg Raise without lag
- Reduce load on knee to achieve optimal condition for surgery

## Exercise Regimen

- Use the following exercise regimens from Phase 1 in order to prepare the knee for surgery
  - o Pain and Swelling
  - o ROM
  - o Strength
  - o Gait may be limited to PWB depending on pain and excessive swelling

### Phase 1 - Protection Phase (post-op weeks 1-4)

## Goals:

- Reduce swelling and pain
  - Restore mobility
    - Restore full extension in 1 weeks
    - Restore full flexion in 2-3 weeks
- Restore patellar mobility
- Restore normal gait within limits set by surgeon
- Restore Active extension and normal quad recruitment
- Promote normal proprioceptive and neuromuscular control

## Pain and Swelling

- PRICE - Protection, Rest, Ice, Compression, Elevation
  - Use these items together to reduce pain and swelling
  - At minimum, 5-6 times per day for 20-30 minute sessions
  - There is no maximum!
- Wall Slides
- Modalities as indicated - Ultrasound, Electric Stimulation, Iontophoreses
- Ankle Pumps - for swelling and DVT prevention

## Range of Motion

- Passive Range of Motion
  - o Wall Slides
  - o Seated Passive flexion-extension
  - o Table slides

## Low Load Prolonged Stretches

- Coffee table hang - for extension
- Seated prolonged flexion hold
- Active Assist Rang of Motion
  - o Stationary Bike without resistance
- Patellar Mobilizations
- Manual therapy as indicated
- Quad and Hamstring Stretching as indicated
- Hydrotherapy
  - o Aquajogging and ROM exercises are permitted when incisions have healed (~2weeks)

## Gait (walking)

- Crutches may be indicated for the first 1-3 weeks to keep excessive load off of the knee. This will help to reduce swelling and pain.
- Weaning from crutches
  - o Begin with weight shifting exercises
  - o Begin walking with more weight on leg using crutches
  - o Single crutch walking
    - This will reduce weight on your surgical leg by 25%
    - Be sure to place the crutch under the *opposite* arm
  - o Walk small distanced in home without crutches and take crutches with you for longer distances
- Hydrotherapy - water walking (when incisions are healed)
  - o Walk in water at shoulder level
  - o Advance to walking at waist level

## Strength

- Quadriceps (Quads)
  - o Quad Sets - isometric quad contractions
    - NMES (Neuromuscular Electric Stimulation) as indicated
    - Biofeedback as indicated
  - o Straight Leg Raising (SLR)
- Hamstring Sets - Isometric Hamstring contractions
- Calf Muscles - Heel-Toe Raises
- Open-Chain hip exercises
  - o Abduction
  - o Adduction

## Proprioception and Neuromuscular Re-education

- Begin open chain proprioception exercises
- Light co-contraction exercises
- Light closed chain stability balance exercises (if weight bearing status permits)

## Phase 2 - Initial Strengthening - (Post-Operative weeks 2-6)

### Criterion to advancement to Phase 2

- Minimal Swelling
- Full passive extension
- Full active extension
- Full passive flexion
- Normal gait pattern

### Goals

- Eliminate Swelling
- Full active and passive ROM
- Increase leg strength to allow for:
  - o Walking long distances
  - o Stair ascending/descending
  - o Double knee bend without compensations
  - o Single knee bend to 70° without compensations

### Swelling

- Continue PRICE'ing with residual
- Modalities as indicated - Ultrasound, Electric Stimulation, Iontophoreses

### Range of Motion

- Patellar mobilizations and manual therapy as indicated
- Quad and Hamstring stretching as indicated
- Low Load Prolonged Stretches
  - o Coffee table hang - for extension
  - o Seated prolonged flexion hold

### Strength

- Closed Chain Strength progression (Gluteals and Quads)
  - o Leg press with light weight and high repetitions
  - o Mini Squats, 1/3 knee bends
  - o Double knee bends to 90°
  - o Single Knee Bends - advance to 70 as tolerated
  - o Light plyometrics on shuttle
- Hamstring Specific Exercises

- o Carpet Drags
- o Hamstring Curls
- o Physio-ball bridging knee bends
- Calf Muscles
- Hip exercises
  - o Side Steps with thera-band
  - o Adduction
- Cardio
  - o Begin stationary bike with resistance
  - o Eliptical trainer
  - o Treadmill walking with incline
  - o Swimming (breast stroke is not recommended)

#### Proprioception, Balance and Neuromuscular Re-education

- Begin double leg stability exercises on balance board
- Single leg balance on stable/semi unstable (foam) surface
- Single leg balance on balance board
- Variations of balance exercises with perturbation training
- Variations of balance exercises during alternate activity (i.e. ball tossing)

### **Phase 3 - Advanced Strengthening (post-operative weeks 10- sport test completion)**

#### **Criterion for advancement to Phase 3**

- No residual swelling present
- Full Active and Passive ROM
- Ascending and Descending stairs with involved leg without pain or compensation
- At least 1 minute of double knee bends without compensations
- Single knee bends to 70° flexion without compensations

*Persons who do not participate in higher level activities may not need to advance to phase 3.*

*Activities that require advanced strengthening include: running, bounding sports, cutting sports and jumping sports, such as, skiing and snowboarding, golf, basketball, tennis and racquetball, soccer, football and hockey*

#### **Goals:**

- Restore multi-directional strength
- Restore ability to absorb impact on leg (plyometric strength)
- Pass sport test

#### Strength, Agility, Balance and Stability Training

- Increase time on double knee bends with resistance
- Increase time on single knee bends. Add resistance as tolerated
- Forward backward jog exercises with sport cord
- Lateral Agility exercise
- Jump-land training
- Advanced perturbation, balance and stability exercises
- Continue with cardio training

#### **Phase 4 - Return to Sport (passing of sport test - 6 months)**

#### **Criterion for advancement to phase 4**

- Pass sport test

#### **Strength and Agility**

- Agility Drills
  - o Chop-Downs
  - o Back Pedals
  - o W-Cuts
  - o Z-Cuts
  - o Cariocas
  - o Cutting Drills
  - o Sport Specific Drills
- Adjust Strength and Cardio Regimen to demands of sport
- Team Training Progression
  - o Begin training with team at 50% participation level
  - o Advance to 100% participation o

Athlete may begin competition at 6 months post-op, or at the discretion of surgeon and physical therapist
- Begin following sports at specified times or according to the discretion of surgeon and/or physical therapist
  - o Running - 8-12 weeks
  - o Mountain biking 6-8 weeks
  - o Golf - 6 weeks
  - o Soccer, football,
  - o Skiing and snowboarding - 2 months