



Hip Arthroscopy Protocol

Brian J. White, MD

www.western-ortho.com

The intent of this protocol is to provide guidelines for progression of rehabilitation. It is not intended to serve as a substitute for clinical decision making. Progression through each phase of rehabilitation is based on clinical criteria and time frames as appropriate.

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.

FABER - A combination of Flexion, Abduction and External Rotation

FADIR - A combination of Flexion, Adduction and Internal Rotation

AROM - *Active Range of Motion*

Range of motion using the muscles of the surgical leg

POD – *Post-Operative Day*

FFWB – *Foot Flat Weight Bearing*

Crutch ambulation with partial weight (<30%) where the foot remains flat during gait.

This is to prevent hip flexor activity and hip extension

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.

Timelines:

Post-Operative Week 1 (POD 1-7)

Post-Operative Week 2 (POD 8-14)

Post-Operative Week 3 (POD 15-21)

Post-Operative Week 4 (POD 22-28)

Continue until discharge from MD and outpatient PT

* *The timelines specified indicate time frames in which you may begin specific exercises or advance to the following phase. They are not mandatory, however. Your surgeon or physical therapist may use his/her discretion to adjust these timelines.*

Initial Precautions

Weight Bearing:

- Foot Flat Weight Bearing (FFWB) for 2 weeks
- Microfracture procedures will remain FFWB for 6-8 weeks

Initial ROM Restrictions for 2 weeks

- Flexion 120°
- External Rotation 0° with Flexion at 0°
- External Rotation ROM may be done lightly at 90° of hip Flexion by a therapist only
- Extension to 0°
- Abduction to 45°

Other Restrictions

- Only mild hip flexor strengthening to prevent hip flexor tendonitis and/or hypertrophy
- CPM
 - 4-6 hours daily
 - Microfracture techniques will require use of CPM for 6-8 weeks for 8 hours per day.
- Bledsoe brace for 2 weeks
- Avoid impinging with flexion and FADIR ROM exercises
- **No Treadmill Walking**

Phase 1 - Protection Phase (post-op weeks 1-4) with Microfracture - post-op weeks 1-9

Goals:

- Reduce swelling and pain
- Restore mobility within limitations
- Restore patellar mobility
- Restore normal gait within limits set by surgeon
- 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!
 - Icing is encourage to be done in prone position to allow for mild stretching of the hip flexors
- Modalities as indicated - Ultrasound as Electric Stimulation
- Ankle Pumps – for swelling and DVT prevention

Range of Motion

- Passive Range of Motion
 - Partner assisted ROM recommended 2-4 times per day, 20 minutes each episode
 - Circumduction to be done at 90° and 30° of hip flexion
- Manual Therapy as indicated to improve ROM (belt mobilization recommended)
- Active/Active Assist Rang of Motion
 - Stationary Bike without resistance 20 minutes per day (No recumbent biking to avoid hip flexor contractures)
 - add resistance in week 3
 - AAROM beginning at week 2
 - AROM beginning at week 2-3 as tolerated
- Hydrotherapy
 - Aquajogging and ROM exercises are permitted when incisions have healed or stitches have been removed (~2weeks)

Gait (walking)

- Crutches may be indicated for the first 1-3 weeks to keep excessive load off of the hip and protect healing structures. This will help to reduce swelling and pain. Microfracture procedures must remain FFWB for 6-8 weeks.
- Weaning from crutches
 - Begin with weight shifting exercises
 - Load limited weight on 2 crutches
 - Single crutch walking
 - This will reduce weight on your surgical leg by 25%
 - Be sure to place the crutch under the *opposite* arm
 - Walk small distanced in home without crutches and take crutches with you for longer distances
- Gait Exercises to promote normalized hip extension and lumbar stabilization
- Hydrotherapy – water walking
 - Walk in water at shoulder level
 - Advance to walking at waist level

Strength (weeks 1-3)

- Transverse Abdominus/Core isometrics in combination with all other isometric exercises
- Isometrics
 - Quad Sets (avoid SLR's for 4-6 weeks)
 - Hamstring Sets
 - Glute sets
 - Ab/Adduction isometrics
 - External and Internal Rotation isometrics
- Open Chain Exercises (week 3)

- Prone hip extension exercises
- Glute Medius Exercises (sidelying or standing)
- Quad and Hamstring dynamic strengthening in open chain

Proprioception and Neuromuscular Re-education

- Begin open chain proprioception exercises
 - prone IR/ER rhythmic stabilization exercise
- Light closed chain stability balance exercises (if weight bearing status permits)

Phase 2 – Initial Strengthening - (Post-Operative weeks 5-8) with Microfracture - Post-Operative weeks 9-13

Criteria to advancement to Phase 2

- Flexion to 120°
- Extension symmetrical to contralateral side
- 50% of FABER ROM as compared to contralateral side
- 75% of FADIR ROM as compared to contralateral side, without impinging
- No hip flexor contractures (otherwise remain in protective phase to decrease hip flexor tone and increase flexibility)
- Able to maintain full bridge position without compensations
- Mild deviations in gait with mild discomfort only

Goals

- Eliminate Swelling
- Full active and passive ROM
- Normalize Gait
- Increase leg strength to allow for:
 - Walking 1 mile
 - Stair ascending/descending
 - Double knee bends without compensations
 - Single knee bend to 70° without compensations
 - Resisted Side stepping without pain

Swelling

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

Range of Motion

- Motion Specific Stretching to eliminate ROM deficits
 - Thomas stretch

- Low Load Duration Stretching for FABER and FADIR position (while avoiding impingement)
 - Single Knee to Chest stretches
 - ITB stretching
- Manual Therapy as indicated for any motion restrictions

Strength

- Closed Chain Strength progression (Glutes and Quads)
 - Leg press with light weight and high repetitions
 - Mini Squats, 1/3 knee bends
 - Double knee bends to 90°
 - Single Knee Bends – advance to 70 as tolerated
 - Light plyometrics on shuttle
- Abduction Exercises
 - Side Steps with thera-band
 - Lateral Agility Exercise with Sport cord - with and without diagonals
- Hamstring Specific Exercises
 - Carpet Drags
 - Hamstring Curls
 - Physio-ball bridging knee bends

- Cardio
 - Bike or spinning with resistance
 - Elliptical trainer
 - Swimming as tolerated

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)

Criteria 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
- Gait without deviations or pain after 1 mile of walking on level surface
- 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 with diagonals
- 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
 - Chop-Downs
 - Back Pedals
 - W-Cuts
 - Z-Cuts
 - Cariocas
 - Cutting Drills
 - Sport Specific Drills
- Adjust Strength and Cardio Regimen to demands of sport
- Team Training Progression
 - Begin training with team at 50% participation level
 - Advance to 100% participation
 - Athlete may begin competition at the discretion of surgeon and/or physical therapist
- Begin following sports at the discretion of surgeon and/or physical therapist
 - Running
 - Mountain biking
 - Golf
 - Soccer, football, tennis
 - Skiing and snowboarding