

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.

### **Phase 1 – Protection Phase (post-op weeks 1-4) with microfracture post-op weeks 1-9**

#### **Weight Bearing:**

- Foot Flat Weight Bearing for 4 weeks
- Microfracture procedures will remain FFWB for 6-8 weeks

#### **Initial ROM Related Restrictions for 2 weeks:**

- External Rotation to 0°
- Extension to 0°
- Abduction to 45°
- CPM 4-6 hours daily
- Spend 2 hours per day on stomach to allow for mild stretching of the hip flexors
- Avoid impinging with flexion and FADIR ROM exercises

#### **Goals:**

- Reduce swelling and pain
- Restore mobility within limitations
- Restore normal gait
- Promote normal proprioceptive and neuromuscular control

#### Pain and Swelling

- PRICE – Protection, Rest, Ice, Compression, Elevation
  - At a minimum 5-6 times per day for 20-30 minute sessions
  - There is no maximum!
  - Icing is encouraged to be done in prone
  - Ankle Pumps for swelling and DVT prevention

## Range of Motion

- Passive Range of Motion
  - Partner assisted ROM recommended for 10 minutes, 2x/day
  - Circumduction (hip circles)
  - Internal rotation (log rolls)
- Active/Active Assistive Range of Motion
  - Week 1 begin quadruped rocking and cat/camel
  - Upright stationary bike without resistance 20 minutes per day
    - No recumbent biking to avoid hip flexor contractures
- Initiate Thomas stretch at week 3

## Aquatic Therapy

- Begin in week 3 once stitches have been removed
- Circumduction, Hip abduction, 1/3 squats
- Forwards and Backwards gait with emphasis on full hip extension and an upright trunk

## Strength/Motor Control

- Isometrics
  - Quad sets, Glut sets, Transverse abdominis isometrics
- Edge of bed hip extension
- Standing Skaters (abduction with IR) for glut medius
- Swiss ball flexion (hamstring ball rolls) for initial psoas activation
- Tall kneeling with controlled rotation and pelvic tilt

## Proprioception and Neuromuscular Re-education

- Prone IR/ER rhythmic stabilization exercises
- Quadruped stabilization exercises
- ½ kneeling for stability prior to full weight bearing
- Standing forward flexion

## Gait

- Crutches with FFWB are indicated for the first 4 weeks to keep excessive load off of the hip and protect healing structures. This will also help to reduce swelling and pain. Microfracture procedures must remain FFWB for 6-8 weeks.
- Weaning from crutches
  - Begin with tall kneeling and standing weight shifting exercises
  - Progress weight on two crutches
- Focus on gait exercises to promote normalized hip extension and lumbar stabilization

## Phase 2 - Initial Strengthening (post-op weeks 6-12)

### with microfracture post-op weeks 9-13

#### Criteria for advancement to Phase 2:

- Pain-free PROM
- Able to maintain full bridge position without compensations
- Mild deviations in gait with no discomfort
- Maintain stable tall kneeling position without anterior hip discomfort

#### Goals:

- Full active and passive ROM including pain-free standing hip flexion
- Rotary stability including side and front planks without compensations or pain
- Normalize gait
- Increase leg strength to allow for:
  - Walking 1 mile
  - Stair descending without compensations
  - Single leg bridge
  - Double knee bends without compensations
  - Single knee bend to 70° without compensations

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

- Closed chain single and double leg strength and stability exercises at therapist's discretion. Include multiplanar strength.

#### Cardio

- Bike gradually increasing resistance at week 6 and when patient can ambulate without a limp; limit to a maximum of 30 minutes total for the first two weeks then continue to progress gradually if there is no increased hip pain
- Elliptical trainer beginning at week 8
- Swimming without leg kick (using a pool buoy) beginning at week 8.  
Swimming with kicking allowed at week 12 only if there is no hip flexor pain

## Phase 3 - Advanced Strengthening (post-op weeks 12- Sport Specific Training)

### Criteria for Advancement to Phase 3:

- 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
- Rotary stability and ability to hold plank

### Goals:

- Restore multi-directional strength and agility
- Restore ability to absorb impact on leg (plyometric strength)
- Full extension for normal running mechanics

*No running or kicking activities until a minimum of 5 months and patient is able to demonstrate pain-free standing repetitive hip flexion*

## Phase 4 - Return to Sport

### Criteria for advancement to phase 4

- Bilateral 1 minute single leg stance with alternate hip flexion/extension
- Resisted single leg squat for 3 minutes

Perform sport specific strength training and drills until patient begins team training progression

Closed chain pilates is recommended for hip maintenance and can be very helpful in the final phase of PT to address late muscular glut imbalance and maintain posterior chain strength