

## **Post-operative Articular cartilage stimulation or restoration surgery (microfracture,ACI, OATS) Protocol**

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### First 7-10 days

- 1) No brace.
- 2) Use crutches. Non weightbearing for up to 6 weeks depending on the location of the injury.
- 3) Change dressing on second day after surgery and replace with dry dressing. Leave tape/steri-strips on the skin and do not remove unless they fall off on their own.
- 4) Perform calf pumps, straight leg raises, heel slides, and quadriceps sets three times each day (10-20 repetitions each time).
- 5) Use ice pack/cryocuff at least 3 times each day for 15 minutes each time to reduce swelling and pain.
- 6) Keep wound/dressings dry. No showers for 7 days and no baths for three weeks.
- 7) Pain medication, muscle relaxant, vitamin D/calcium supplementation, and antibiotics will be prescribed. Do not use anti-inflammatory medication like Advil (ibuprofen), Aleve(naproxen) for 6 weeks after surgery.

### 1 week to 6 weeks

#### **At first clinic visit:**

- 1) Continue crutches.
- 2) Sutures will be removed if necessary but often they are buried under the skin. No baths or pools for 3 weeks after surgery.
- 3) Continue with ice and compressive wrap as swelling can persist for several weeks.

5) Steri-strips will fall off on their own. If they do not fall off, pull them off gradually by two weeks after surgery.

**PT goals (Range of motion):**

- 1) Full symmetric extension by 2 weeks. Notify my office if not achieved.
- 2) 90-100 degrees of flexion by 3-4 weeks and full flexion by 6-8 weeks.
- 4) Swelling control.

**Exercises:**

- 1) Quadriceps sets
- 2) Straight leg raises
- 3) Patellar mobilization
- 4) Prone knee flexion/extension
- 5) Heel slides
- 6) Sitting knee flexion
- 7) When range of motion allow, may be on a stationary bike with little to no resistance

6 weeks to 12 weeks

**6 week clinic visit:**

- 1) Knee should be fully extended.
- 2) Will start gradual weight bearing over 2-6 weeks by first using both crutches to share the weight for 1-2 weeks, then using one crutch for one 1-2 weeks then using no crutches except for long distances. Use pain as the guide but do not progress faster than the 2 weeks to full weight bearing.
- 4) Swelling should be absent.

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**PT goals (Improve ROM, advance strengthening with closed and open chain exercises):**

- 1) Obtain full knee flexion by 6 weeks
- 2) Quadriceps strengthening
- 3) Hamstring strengthening
- 4) Calf strengthening
- 5) Gait training

**Exercises:**

- 1) Wall slides and mini-squats to 45 degrees (closed chain 0-45)
- 2) Open and closed chain quadriceps exercises with increasing weights
- 3) Open and closed chain hamstring exercises with increasing weights
- 4) Toes raises, step ups
- 5) Continue stationary bike with increasing resistance
- 6) Pool walking and swimming (free style stroke and backstroke only; avoid heavy kicking strokes)

3 to 6 months

**PT goals:**

- 1) Continue all previous exercises to progress to full strength of quadriceps and hamstrings. May participate in any weightlifting activity that is not painful but no deep squatting.

**Exercises:**

- 1) Start elliptical trainer at 3 months.
- 2) May walk longer distances for exercise.

6-9 months

**Goals:**

- 1) May start jogging depending on the size and location of the injury.

**Exercises:**

- 1) Begin with sport-specific exercises and cutting maneuvers and progress to playing over 1-6 weeks

9-12 months

**Goals:**

- 1) Return to sport if no pain or swelling.

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### Additional instructions:

If right leg is operative leg, may not drive automatic transmission vehicle for 1-2 weeks.

If left leg is operative leg, may drive automatic transmission vehicle after have stopped using narcotic pain medication.

May return to sedentary desk work in one week.

May return to work requiring standing gradually over 6-12 weeks.

May return to heavy labor in 6-12 months.

### Duration and frequency of PT:

For week 7-12 (12 visits): supervised 2x/week. Perform exercises on your own 5-7 days/week

For week 13-18 (12 visits): supervised 1x/week. Perform exercises on your own 3-5 days/week