Connecticut Orthopaedics

Megan R. Wolf, MD
Sports Medicine/Foot & Ankle

DFO/HTO
and Articular Cartilage Restoration/Meniscal Transplant
Post-Operative Protocol

Phase I - Maximum Protection
Weeks 0-6:

- Brace- wear at all times unlocked
- Toe touch weight bearing (TTWB) for 6 weeks
- CPM use 6 hours a day for cartilage transplant

  Goals
  - Reduce inflammation and pain
  - Protect surgical repair
  - Range of motion
    - Meniscal transplant: limit knee flexion to 90 degrees for 4 weeks, then progress to full
    - Cartilage transplant: no restrictions
      - Use of CPM starting at 0-30 degrees progressing as tolerated to 0-90 degrees for 6 hours/day

  Exercise progression
  - PROM, AAROM, and AROM
  - Quad and glute isometric activation
  - Patellofemoral mobilizations
  - Open chain hip strengthening
  - Able to perform bike with no resistance
  - Local core stabilization exercises within weight bearing restrictions

Phase II- Progressive Stretching and Early Strengthening
Weeks 6 to 8:

- Brace- wear at all times unlocked
- Progress to weight bearing as tolerated (WBAT)
- Progress range of motion

  Goals
  - Reduce inflammation and pain
  - Protect surgical repair
  - Full range of motion by 8 weeks
  - Gait training

  Exercise progression
  - PROM/AROM/AAROM to achieve full range of motion
  - Initiate closed kinetic chain exercises to progress weight bearing status and facilitate muscle activation
  - Core stabilization exercises

Phase II- Progressive Strengthening
Weeks 8 to 12:

- Discontinue brace
- Full weight bearing
- Progress closed chain strengthening from double limb to single limb
- Initiate balance/proprioceptive exercises

  Goals
  - Full range of motion
  - Normal gait pattern
  - No swelling
  - Progress limb strength

Exercise progression
- Initiate elliptical trainer
- Progress closed kinetic chain strengthening from double limb to single limb
- Proprioception drills

Phase IV- Advanced Strengthening and Endurance Training
Weeks 12 to 16:
- Advance strengthening program
- Prepare for Preliminary functional test to perform at 16 weeks
- Progress balance and proprioception

Goals
- Full range of motion
- Protect repair
- Normal gait pattern
- Increase single leg strength

Exercise progression
- Single limb closed chain exercises
- Proprioception drills

Phase V- Running Progression and Plyometric Progression
Weeks 16 to 20:
- Administer Preliminary functional test at 16 weeks for physician to review
- Initiate straight line jogging at 18 weeks if proper biomechanics are demonstrated
- Initiate plyometric training at 18 weeks progressing from double limb to single limb
- Advance strengthening program

Goals
- No swelling
- Full range of motion
- Symmetrical strength and power

Exercise progression
- Basic ladder series
- Linear jogging progression
- Plyometric progression

Phase V- Return to Sport
Weeks 20 to 24:
- Progress plyometric training to multi-direction, change of direction, and deceleration
- Administer Return To Sport functional test prior to 6 month follow up appointment with MD

Goals
- No swelling
- Full range of motion
- Symmetrical strength and power

Exercise progression
- Advance ladder, hurdle, and plyometrics
- Sport specific field/court drills
- Non-contact drills

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Criteria to be released for return to sport

- Follow-up examination with the physician
- Pass Return To Sport functional test at >90% (involved vs. uninvolved limb)
- Display symmetry and confidence in high-speed cutting, multi-plane plyometric drills, sprinting and decelerating

Anticipated return to sport:

- 6-9 months for contact and non-contact athletes

Revised ***