PLANO ORTHOPEDIC
& SPORTS MEDICINE CENTER

Jonathan D. Ringenberg, M.D.
Orthopedic Sports Medicine
Postoperative Protocol

Distal Femoral Osteotomy or Proximal Tibial Osteotomy With Meniscal or Cartilage Transplant

Phase 1 – Maximum Protection
Weeks 0 to 6

- Brace – wear at all times unlocked
- Toe touch weight bearing (TTWB) for 6 weeks

Goals:

- Reduce pain and inflammation
- Protect the surgical repair
- Range of motion
  - Meniscal transplant: limit knee flexion to 90 degrees for 4 weeks, then progress to full
  - Cartilage transplant: no restrictions, start at 0-30 degrees and progress as tolerated

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 2 – 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 pain and inflammation
- Protect the surgical repair
- Full range of motion by 8 weeks
- Gait training

Exercise Progression:

- PROM, AROM, and 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 3 – Progressive Strengthening
Weeks 8 to 12

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

Goals:

- Full knee 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 4 – 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
- Normal gait pattern
- Increase single leg strength

Exercise Progression:

- Single limb closed chain exercises
- Proprioception drills

Phase 5 – Running Progression and Plyometric Progression
Weeks 16 to 20

- Administer preliminary function 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 6 – Return to Sport
Weeks 20 to 24
- Progress plyometric training to multi-direction, change of direction, and deceleration
- Administer return to sport function test prior to 6 month follow-up with physician

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

Exercise Progression:
- Advance ladder, hurdle, and plyometrics
- Sport specific field/court drills
- Non-contract drills

Criteria for return to play:
- Follow-up examination with the physician
- Pass return to sport function 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