ARTHROSCOPIC KNEE SURGERY REHABILITATION PROTOCOL

OSTEOCHONDRAL AUTOGRAFT (OATS)

GENERAL GUIDELINES

- The local anesthetic (similar to novacaine) in your knee will last 6-12 hours
  - Start taking the pain medication as soon as you start feeling pain
- Vistaril may be taken every 6 hours as needed for nausea, itching, or trouble sleeping
- Take 1 aspirin (325 mg) daily for two weeks, starting the day after surgery
- Use cryotherapy continuously for the first 72 hours, then as-needed thereafter
  - Ensure that the cryotherapy cuff never contacts the skin directly
  - Apply to the knee after performing rehab exercises for the first 12 weeks
- Remove the bandage 72 hours after surgery, but leave the white steritrips on the skin
  - apply fresh gauze pad with ace bandage for the first 2 weeks after surgery
- You may shower after surgery, wrapping the dressing in plastic wrap to keep dry
  - You may get the incision wet after the first postoperative visit with the doctor
  - Do NOT submerge the knee underwater for the first 6 weeks
- Sleep with brace locked in extension for 1 week
- Driving: 1 week for automatic cars, left leg surgery if off pain medication
  4-6 weeks for standard cars or right leg surgery
- Take precautions not to fall, as a fall could result in fracture or graft failure
- Schedule a follow-up appointment for two weeks after surgery 410-448-6400

PHASE I

Begins immediately postoperatively through 2 weeks postoperatively

Goals:

- Protect graft fixation and minimize inflammation
- Ensure wound healing and prevent blood pooling/blood clot
- Maintain full extension, initiate early range of motion

Weight-Bearing Status:

- Touchdown weightbearing with two crutches

Therapeutic Exercises (3 times per day):

- *Ankle pumps*
- Knee extension/hamstring stretching with *heel prop*
- *Heel slides* with assistance from unaffected leg
- Sitting *leg dangle* to 90 degrees using unaffected leg for support
- *Patellar mobilizations* (medial, lateral, proximal, distal)
- Quad isometrics (hold for 10 seconds, with 5 repetitions)

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PHASE II

Begins 2 weeks postoperatively and extends to 6 weeks postoperatively

Criteria for advancement to Phase II:
- No signs of active inflammation, flexion to 70 degrees

Goals:
- Restore normal gait
- Maintain full extension, progress flexion
- Protect graft fixation

Weight-Bearing Status:
- Weight bearing as tolerated with two crutches
  - Transition to 1 crutch, then discontinue when comfortable

Therapeutic Exercises (3 times per day):
- All exercises from Phase I
- Aggressive *patellar mobilizations* (medial, lateral, proximal, distal)
- Stationary bike (no tension; begin with high seat & progress to lower seat for ROM)
- *Prone hangs* to promote knee extension
- *Straight-leg raises* (10 repetitions; start with brace locked, then unlocked as tolerated)
- *Hip abduction* (leg raises to the side while lying on your side)

PHASE III

Begins 6 weeks postoperatively and extends to 3 months postoperatively

Criteria for advancement to Phase III:
- No difficulty with straight-leg raise
- Flexion to at least 120 degrees

Goals:
- Maximize range of motion
- Improve functional strength while protecting the graft and patellofemoral joint
- Wean the postoperative brace and discard when comfortable

Therapeutic Exercises (perform strengthening exercises every other day):
- All exercises from Phase II (perform 3 times per day)
- Stationary bike (increase tension as tolerated)
- *Wall slides* and *leg press* from 0-45 degrees of knee flexion
- 3-way hip motion with progressive resistance (flexion, abduction, adduction)
- *Hamstring curls* with progressive resistance
- Toe raises
- Treadmill walking with emphasis on normalization of gait pattern
- Aquatic program to include pool running and flutter kick (NO breaststroke)
- Step-up/Step-down beginning at 2”, gradually progress height as tolerated

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PHASE IV

Begins 3 months postoperatively and extends to 6 months postoperatively

Criteria for advancement to Phase IV:
- Full range of motion and normal gait
- No difficulty with wall slide to 45 degrees.

Goals:
- Improve strength and endurance in preparation for functional activities
- Initiate proprioceptive training while protecting the graft and patellofemoral joint

Therapeutic Exercises (perform every other day):
- All exercises from Phase III
- Progress to single leg wall slides and leg press to 90 degrees of flexion
- Elliptical trainer (transition to jogging when comfortable and has Sports brace)
- Treadmill or track jogging, gradually increasing distance and speed
  - Avoid uneven terrain or concrete surfaces such as sidewalks and streets
- Balance/Proprioceptive training (single leg stance, balance board)
- Plyometric training (see following page)

PHASE V

Begins 6 months postoperatively and extends to 1 year postoperatively

Criteria for advancement to Phase V:
- Surgeon clearance
- Symmetric thigh musculature and performance within 10% of uninvolved limb

Goals:
- Maximize strength, endurance, and proprioception
- Gradual return to sport (wearing ACL Sports brace for the first year)

Therapeutic Exercises (perform every other day with brace):
- All exercises from Phase IV
- May jog on any surface as tolerated, gradually increasing distance and speed
- Non-linear running (zig-zag run, backwards run, Carioca each side for 50 yards each)
  - Start with 'walk-through' at < 1% of maximum effort
  - Increase 10% effort each session as tolerated
- Agility drills added after non-linear running mastered (shuttle run, box drill, weaves)
  - Start with 'walk-through' at < 1% of maximum effort
  - Increase 10% effort each session as tolerated
- Sport specific training/practice once agility drills mastered
  - Start with 'walk-through' at < 1% of maximum effort
  - Increase 10% effort each session as tolerated

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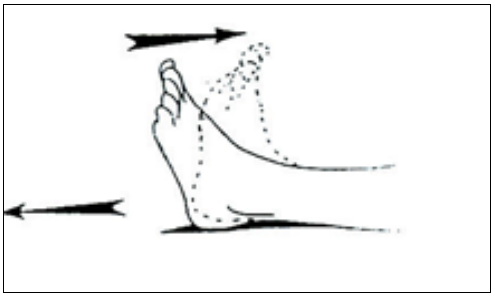
Plyometric training (should be performed on dedicated soft, level surface with good traction).
12-16 weeks postop: Double limb hops (advance to 30 reps)
16-20 weeks postop: Add alternating single leg hop (advance to 15 reps each foot)
Add double limb forward, side, and back hops (advance to 10 reps each)
(distance should be 6 to 12 inches)
20-22 weeks postop: Add single leg hop (advance to 10 reps)
Increase distance of double limb forward hop as tolerated, add triple hop
22-24 weeks postop: If appropriate for desired sports or activities,
Add double leg rotational hops (90 degree turn midair, advance to 5 reps)
Add double leg rotational hops (180 degree turn midair, advance to 5 reps)

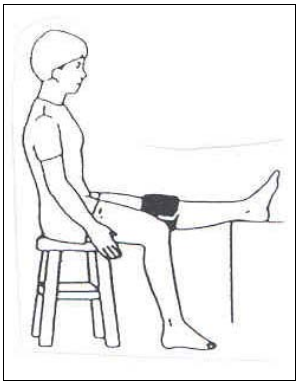
General timeframe for typical return to sports

Jogging:	14 weeks postoperatively
Golf:	3 months postoperatively
Skiing:	4 months postoperatively
Return to practice for all other sports:	5 months postoperatively
Full return to sports:	6 months postoperatively

Selected Exercise Diagrams (continued on the next page)



Ankle Pumps



Sitting extension/hamstring stretch with *heel prop*
May also be performed recumbent (lying down)

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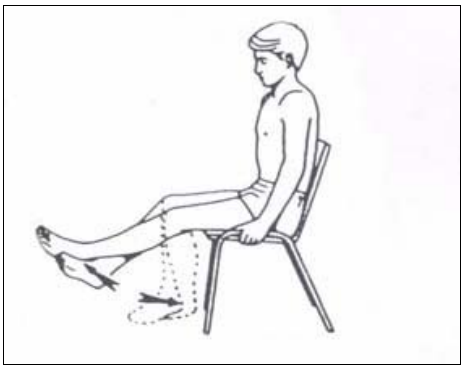
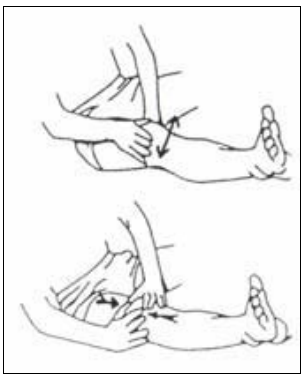
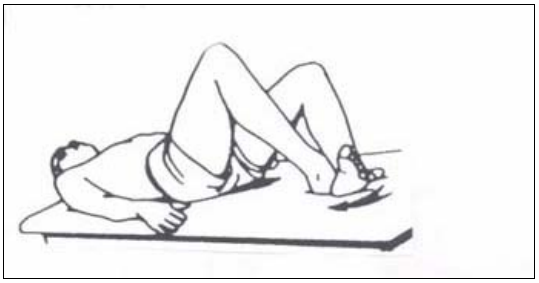


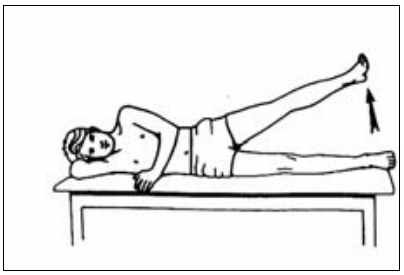
Sitting *leg dangle* to 90 degrees using unaffected leg for support



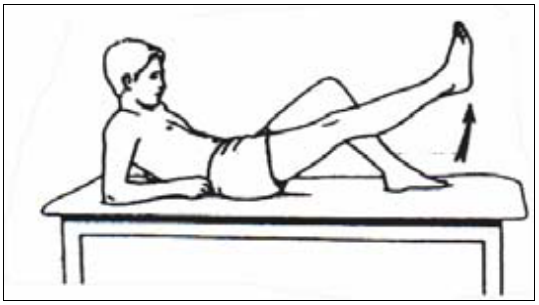
Patella mobilizations
stretch in 4 directions (side to side, up and down)



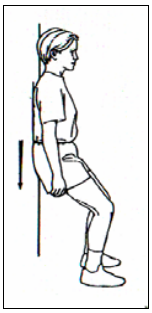
Recumbent *heel slides* with assistance from unaffected leg



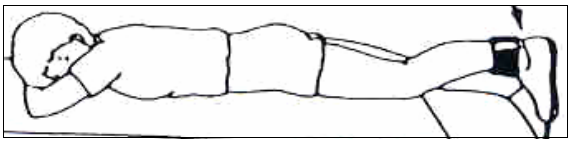
Hip abduction



Straight-leg raises



Wall slides (0-45 degrees of knee flexion)



Prone hangs to promote full knee extension