

NONOPERATIVE TREATMENT OF ACUTE GRADE III MEDIAL KNEE INJURIES

Goals for All Phases

- Early, pain-free full range of motion of the knee
- Minimal loss of quadriceps strength
- Healing of injured ligament complex with little to no residual instability

Phase 1: 1 to 2 Weeks

Ice:

- Ice knee as tolerated and as needed based on symptoms

Weight bearing:

- Use crutches and apply touchdown to partial weight bearing and progress as tolerated. Progress to 1 crutch (on opposite side), then discontinue crutches only when normal gait is possible

Brace:

- Hinged knee brace set from 0° to 90° of knee flexion

Range of motion:

- Emphasize full extension
- Progress flexion as tolerated

Therapeutic exercises:

- Quadriceps sets: 30 repetitions, 10 times a day
- Straight leg raises. No weights. The knee must be held in full extension (no sag). If not, exercise is performed with brace locked in full extension
- Range-of-motion exercises as tolerated
- Sitting hip flexion, 10 sets of 10 repetitions daily
- Sidelying hip abduction, 10 sets of 10 repetitions daily
- Standing hip extension, 10 sets of 10 repetitions daily
- Standing hamstring curls, as tolerated; if painful, discontinue
- Bike, as comfortable, 10 to 20 minutes, low resistance, start as soon as possible
- No limits on upper extremity workouts that do not affect the injured knee

Phase 2: 3 to 4 Weeks

Weight bearing:

- As tolerated with hinged brace

Range of motion:

- Full extension
- Progressive flexion as tolerated

Therapeutic exercises:

- Progress above exercises as tolerated to 5 to 10 lb (2-4 kg)
- Progress to 20 minutes of exercise biking daily; increase resistance as tolerated. This is the key exercise to promote healing, rebuild strength, and maintain aerobic conditioning
- Progress to weight-room exercises. Limit the injured knee's range of motion to between 0° and 90° of knee flexion when lifting weights (in the brace)
- Hamstring curls
- Leg presses: double-leg press and single-leg press on injured side
- Progress isokinetics

- Step-ups

Precaution:

- Examination by physician is necessary at approximately 3 weeks to verify ligament healing

Phase 3: 5 Weeks

Weight bearing:

- Gait in hinged knee brace through 6 weeks, as comfortable

Brace:

- Gradually open fully per quadriceps control
- Discontinue use when ambulating with full weight bearing and no gait deviation

Range of motion:

- Full, symmetrical

Therapeutic exercises:

- Continue at least 20 minutes of daily exercise bike program. Resistance should be progressively increased at each session
- Progress to weight-room exercises. Limit motion to 30° to 90° of knee flexion while performing leg presses, squats, etc
- Hamstring curls
- Leg presses: double-leg press and single-leg press
- Progress isokinetics
- Step-ups
- Progress walk-to-run, as tolerated, once cleared by surgeon
- Progress agilitys from balanced to unilateral exercises (single-leg hop-scotch jumps, etc)

Precautions:

- Verify healing by physician at 5 to 6 weeks to progress to next level
- Verify with stress radiographs as needed

Phase 4: 6 Weeks

Brace:

- Discontinue brace with gait, wear for competition through competitive season or for at least 3 months
- Protective use when out of home, hinged brace open per quadriceps control

Range of motion:

- Full, symmetrical

Therapeutic exercises:

- Continue daily exercise bike use through 12 weeks after injury (at least 20 minutes per day)
- Progress sport-specific exercises

Precaution:

- Return to competition once full motion and strength return and the patient passes a sport functional test and is cleared by the physician