

# ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION REHABILITATION PROTOCOL

## Progression of Program

### Preoperative visit:

- Evaluation and home program review of preop and postop exercises, brace and crutch use, and post-op guidelines and precautions. Questions on the surgical procedure, post-op expectations, and timeframes will also be addressed.

### Postoperatively:

#### Weeks 0-2:

- Re-evaluation and review of home program.
- Begin increasing weightbearing and wean from crutches as able to demonstrate good mechanics.
- Brace is to be used until 1-2 weeks postop depending on leg control.
- Crutch-assisted gait until able to ambulate with minimal limp.
- ROM should be 0-90° by 2 weeks postop and the patient should be able to straight leg raise.
- Early emphasis on achieving full extension with active VMO recruitment.
- Soft tissue treatments to patella, patellar tendon, incisions, and posterior musculature to improve range of motion and decrease fibrosis (including Graston as indicated).

#### Weeks 2-4:

- Refer to ACL Rehab Progression Criteria.
- Range-of-motion exercises (i.e., wall/heel slides, passive stretching), pain control, gait training, and continue with soft tissue treatments.
- ROM should be 0-115° by 4 weeks postop.
- Continue with soft tissue treatments and teach on self-mobilization techniques for incisions/portals.
- Incorporate functional, closed chain-focused exercises (i.e., mini-squats, short-range lunges, leg press, calf exercises). Emphasis on VMO control, core stability, and avoidance of dynamic varus/valgus moment with exercises.
- ***If hamstring graft***, no isolated hamstring exercises until 3 weeks and no open chain resisted hamstring curls until at least 6 weeks postop.
- ***No resisted leg extension machine*** at any point during rehabilitation.
- Stationary bike, pool workouts, and upper body conditioning.
- Balance and proprioception exercises.

#### **Weeks 4-6:**

- Refer to ACL Rehab Progression Criteria.
- Continue with ROM focus if patient cannot actively move knee from 0-115°.
- Soft tissue and scar mobilization for ROM and patellar/tendon mobility.
- Increase intensity of functional exercises (i.e., add weight or resistance with exercises).
- Introduce step-up exercises.
- Progressive core stabilization program.
- Extensive balance/proprioception program focusing on weak positions.
- Introduce lateral training.
- Add Stairmaster, VersaClimber, Elliptical Trainer.

#### **Weeks 6-8:**

- Refer to ACL Rehab Progression Criteria.
- Single-leg/unilateral workouts (i.e., on weight machines, squats, side and forward step-downs, increase depth of balance exercises).
- Progressive hamstring program (monitor for signs of irritation).
- Carefully monitor exercises for signs of diminished eccentric control, weakness, or poor ability to stabilize against dynamic varus/valgus with loading exercises.

#### **Weeks 8-12:**

- Refer to ACL Rehab Progression Criteria.
- Emphasis on strengthening up to 90° of knee flexion with good alignment.
- Increase intensity of cardiovascular workouts and home program.

#### **Weeks 12-16:**

- Refer to ACL Rehab Progression Criteria.
- Patients can begin jogging at 12-14 weeks, assuming they have adequate quadriceps control and no complications.
- At 14 weeks, the patient will have a followup appointment with the MD and a functional assessment. The functional assessment consists of:
  - Ground clock/timed
  - Unilateral squat, timed, to 70° of flexion
  - Lateral shuffle/carioca
  - Two-legged jump mechanics
  - Skipping, jogging, high knees
  - Unilateral balance

#### **Weeks 16-24:**

- Progressive program of strengthening and dynamic activities focusing on increasing depth or loading, unilateral strength and control, and developing power with sport- and activity-specific applications.