

ACL RECONSTRUCTION WITH OR WITHOUT MENISCUS REPAIR

PT Protocol: Dr. Salvatore Frangiamore

****YOU NEED TO HAVE YOUR PHYSICAL THERAPY SCHEDULED TO START WITHIN ONE WEEK. THIS IS EXTREMELY IMPORTANT.****

Please follow MOON ACL rehabilitation protocol. If you are unfamiliar with MOON ACL rehabilitation program, you may utilize the program below. Not every patient will get a brace. If the patient does not have a brace, disregard all references to a brace. The entire MOON ACL rehabilitation protocol is available online for free at <https://acltear.info>

- **Please keep in mind- these are guidelines only.**
- **Other than specifics regarding bracing and early limitations, I trust your expertise to provide the best treatment strategy for my patients.**
- **- if there are any questions don't hesitate to contact myself or my team**

Immediate Post-Operative Goals (within 2 weeks)

- Full knee extension ROM (equal to uninjured knee)
- Active control of quadriceps muscle
- Swelling controlled
- Knee flexion ROM of at least 0-90°

Expected Recovery

1. Anticipate approximately 24-36 post-operative PT appointments (3x/week for the first month, 2x/week for second month, 1x-2x/week thereafter)
2. Walking without crutches by approximately 2 weeks after surgery
3. Back to desk type work/school within 1 week following surgery
4. Manage stairs normally by approximately 6 weeks after surgery
5. Begin running approximately 12 weeks after surgery
6. Progress back to sports 5-6 months after surgery if you have met the goals below

Progression Criteria

1. Outside of rehabilitation sessions, try to limit activity as much as possible for first 2-3 days. Progress slowly initially using pain and swelling as a guide (indication) to progress in rehabilitation sessions
2. Add only 1-2 new exercises/activities to your routine each day
3. Ice the involved knee for 20 minutes following each rehabilitation session and after strenuous activities
4. If activities or exercises added to your routine cause pain, swelling or recurrence of other symptoms, discontinue exercise and consult physician and/or physical therapist immediately

Phase 1 (0 to 1 Month)

- **WBAT with ACL + Most meniscus repairs** (exceptions: meniscus root repair, bucket handle repair or other specified by surgeon) **(In this case NWB would be initiated x 4 weeks to protect repair)**
- **Knee Flexion limit to 90 degrees for all ACL + Meniscus repairs for 4 weeks, advance as tolerated from that point on**
- Prone lying, supine with log roll under ankle, and gentle stretching to achieve full hyperextension
- Quad sets→ may use e-stim; increase # visit/week if quad inhibited
- Hamstring isometric sets
- Patellar mobilizations, especially superiorly. Cross-friction massage/effleurage
- Straight leg raises, full arc quads without weights
- Prone knee flexion, heel slides, calf and hamstring stretching, calf pumps
- 4-way hip and 4-way ankle exercises
- Icing or cryotherapy, 5x/day, and 20 minutes each before and after exercises
- Compression stockings from foot to mid-thigh at all times except when showering
- **Patient is to get full hyperextension symmetrical to the contralateral knee within 4 weeks of surgery. If not, contact Dr. Frangiamore**
- **IF THE PATIENT HAS A BRACE**, brace locked for first week, except for exercises, then unlocked at all times after 1 week. No brace for sleep or exercises after 1 week.
- Brace may be stopped after 3-4 weeks as long as patient has full extension and can perform a straight leg raise without an extension lag
- Initiate proprioception/balance exercises to include single leg stance
- Weight shifts→ forward, retro and lateral
- Patient may WBAT with crutches unless meniscal/chondral work has been performed
- Stationary bike with no resistance, seat elevated to within flexion range
- **Crutches may be stopped after 2-4 weeks as long as the patient has full extension, can perform a straight leg raise without an extension lag, and ambulates without a limp.**
- Patient may be weaned to one crutch (opposite arm, after 1 week) in order to normalize gait (no limp) and as long as full extension and no extension lag with straight leg raises are obtained

Phase 2 (1 to 2 Months)

- 2-3 visits/week, 5x/week home program with goals
- Continue all exercises in previous phase (as described above)
- Begin quad exercises including mini-squats, wall slide mini-squats, partial arc quads (60-90⁰), and hamstring curls with light weights
- Toe raises with weights, step-ups, and step-downs (begin with 2 inches and progress to a full step)
- Progress proprioceptive/balance exercises including single-leg balance progression/wobble board
- If pool is available, may start 4-way hip, lateral movement, deep water jogging in place, retro
- **Crutches should be weaned off by this stage and gait should be normal.**
- **ROM should be full by 2 months. If any extension lag (compared to contralateral knee) or less than 125⁰ of flexion is present, please contact**

Phase 3 (2 to 4 Months)

- 2 visits/week, home program 5x/week, must review home program at each visit with goals
- Continue exercises in previous phases (as described above)
- Focus rehabilitation towards more closed-chain exercises including leg presses (0-60o)
- step-ups, mini-squats (0-60⁰), short arc quads (30-90⁰), and hamstring curls with light weights, high repetitions
- Endurance closed-chain quadriceps exercises should begin such as Stairmaster, stationary bike, elliptical trainer,
- Nordic trac (short stride), etc. Focus on increasing endurance and should be performed 3-4x/week
- Continue gait training, including progression to fast walking on a treadmill or even ground
- If a pool is available, swimming may be started but the frog-kick and breaststroke should be avoided. Progress deep to shallow water jogging
- Gait and ROM should be normal by this phase. If it is not, contact

Phase 4 (4 to 6 Months)

- 4-5x/week home program, may also have 2 visits per month to review home program with goals
- Continue exercises in previous phases (as described above)
- Slow progression from fast walking to **slow** jogging on even ground or treadmill or hill work. **No cutting, jumping or pivoting**
- Advance strengthening with weights including leg presses (0-90⁰), step-ups, mini-squats (0-90⁰), leg extensions (45-90⁰), and leg curls (full motion). Repetitions should be smooth and slow and NOT explosive. May begin jump rope exercises. May advance swimming (no frog-kick or breaststroke)

Phase 5 (6 to 12 Months)

- 3-5x/week home program, may need rehabilitative supervision for functional training
- Begin advanced strengthening with weights including leg presses, leg extensions, squats, leg curls, and lunges
- Initiate plyometric program as appropriate for patient's functional goals
- May begin functional training exercises including fast straight running, backward running, cutting, cross-overs, carioca, etc
- Begin gradual return to previous sports/activities/work duties under controlled conditions
- Full return to sports/activities/full work duties are pending Dr. approval based upon the following criteria:

Progression for Return to Sports/Full Activities:

1. Progress from physical therapy exercises to cardiovascular conditioning/strength training and then sport-specific activities
2. Progress from straight-ahead running to cutting and changes of direction
3. Progress to jumping/plyometric exercises as needed
4. Progress from controlled to uncontrolled situations
5. Progress from participating in limited practice ("safe" drills, limited repetitions), to full practice, and finally competition

Final Criteria for Return to Sport/Full Activity

- Quadriceps and hamstring at least 90% of opposite leg
- One-leg hop test and vertical jump at least 90% of opposite leg
- Jog, full speed run, shuttle run and figure-8 running without a limp
- Full controlled acceleration and **deceleration**
- Squat and rise from a full squat
- No effusion or quadriceps atrophy