

**ACL PREHAB TIMELINE**

ACL PREHAB CONSISTING OF RESTORING KNEE ROM, ENHANCING LOWER LIMB STRENGTH AND NEUROMUSCULAR CONTROL AS WELL AS IMPROVING GENERAL FITNESS CAN SPEED UP REHAB AND IMPROVE OUTCOMES AFTER ACL RECONSTRUCTION SURGERY (LOGERSTEDT & LYNCH 2013, SANTA MINA ET AL 2014, LOGERSTEDT ET AL 2013, SHELBOURNE ET AL 2006).

**STAGE 1**

Walking	Range of movement	Swelling	Strength
With/without E/C - as tolerated  Relative rest (avoid twisting activities and impact)	Patient should be achieving:  -Passive flexion as close to FROM as possible (max difference $\leq 10^\circ$ from opp. side)  -Full active and passive extension/hyper extension	Ice Elevation Relative rest	Quads: -SQ -SLR  Hamstrings: -Through range Hams in prone  Other: -Glut med/Clam -Leg lifts-Adductors

***Criteria to progress***

- *Minimal swelling & Pain free*
- *Independent gait*
- *Full Active and Passive Extension*
- *Passive Flexion as possible (max difference  $\leq 10^\circ$  from opposite side)*

**STAGE 2**

Walking	Range of movement	Swelling	Strength/ Proprioception	Gym
Normal gait  Avoidance of impact and twisting	-Maintenance of full range extension (active & passive)  -Full range passive flexion (max difference $\leq 5^\circ$ to opp. side)  -Active flexion as close to opp. side as possible	As per stage 1	Quads -Wall squats (<60 degrees with hold) -Single Leg Dips -Step ups -Static lunges -IRQ with 4lb weight -SLR with 4lb weight Hamstrings -Static hamstrings on bench  Proprioception -Single leg stand -Wobble-board	-Static bike  -Stepper  -Leg press  -Open chain knee flexion/leg curl

***Criteria to progress***

- *Normal gait*
- *Full Active and Passive Extension*
- *Passive Flexion close to FROM as possible (max difference  $\leq 5^\circ$  from opposite side)*
- *Achieving good control on SLD (Good IRQ control and pelvic alignment)*
- *SLR with no lag +10lb weight*

### **STAGE 3**

- If patient passes criteria to progress from stage 2 to stage 3 patient can then:
- Continue with exercises from stage 2 plus:
  - progress quads exercise to use Quads bench Low resistance - 3 x 10-12 reps (Should be pain free through range, if not pain free start with 90° - 60° + SLR + IRQ exercises and build up to full range)

#### **Criteria to progress**

- Full Active & Passive Flexion and Extension
- Strength test quads: 80% ACLD vs Uninjured side\*
- Strength test Hamstrings: 80% ACLD vs Uninjured side

### **STAGE 4 (Plyometrics and impact)**

Progression to plyometrics should **ONLY** be done if your patient is a non-surgical candidate who has progressed well through rehabilitation so far and is wishing to return to higher level sport.

**N.B: They must have exceptional control on single leg dips and rotational work.**

#### **Impact**

- Interval training on treadmill/even ground.
- Walk - Jog - Walk, gradually increasing jog time and decreasing walk
- Straight line running
- Rotational work i.e. step-overs on low step, clock lunges, side-ways steps etc

#### **Level 1**

- Hopping on spot
- Box Jumps - double foot
- Ladder drills - High Knees, Heel Flicks, Fast feet

#### **Level 2**

- Multi directional hopping
- Box Jumps - hopping
- Drills - Grapevine, Hop scotch

#### **Sport Specifics**

Start to add sport specific elements but ensure a period of non-contact and gradually add this in whilst maintaining strength and all control elements.

### **PRIOR TO D/C YOU MUST ENSURE YOU HAVE DISCUSSED WITH THE PATIENT THE FOLLOWING:**

- Start exercises day 1 post-op
- Emphasise importance of achieving knee extension and how to achieve it (go through knee extension exs with pt if necessary)
- Post-op pain management
- FWB with e/c's post-op (if ACL reconstruction only)
- Patient expectations on return to work and / or sport

### **D/C CRITERIA FROM PHYSIO:**

- Quads strength: 100% ACLD vs Uninjured side\*
- Hamstrings strength: 100% ACLD vs Uninjured side
- Achieving 30 SLD (with Good IRQ control and pelvic alignment)

\*NOTE: If patient is complaining of patello-femoral pain in affected knee or has been diagnosed with partial ACL tear use leg press & SLR to determine general lower limb strength.