



ACL Reconstruction

Post-Operative Rehabilitation Protocol

Ironman Sports Medicine Institute
2nd Edition



ACL Reconstruction

PHASE 1 - ACUTE (0-6 Weeks)

PHASE GOALS: PROTECT GRAFT, RESTORE AMBULATION & ADL STATUS

RANGE OF MOTION

- IMMEDIATE: FULL KNEE EXTENSION, AND FLEXION ROM AS TOLERATED

WEIGHT BEARING

- IMMEDIATELY- WEIGHT-BEARING AS TOLERATED

BRACE & CRUTCH USE

- 0-1 WEEK - BRACE LOCKED IN FULL EXTENSION
- 1-2 WEEKS - OPEN BRACE TO 60 DEG
- 2+ WEEKS – BRACE OPEN WITH GOOD QUAD CONTROL & FULL EXTENSION; DC BRACE & CRUTCHES WHEN GAIT IS NORMAL

STRENGTHENING

- QUAD SETS, STRAIGHT LEG RAISES, HIP ABDUCTION
- BALANCING, PRE-GAIT, CALF RAISES

CRITERIA FOR FULL AMBULATION

- ≥ 0 DEG KNEE EXTENSION & 90 DEG KNEE FLEXION
- ≥ 30 STRAIGHT LEG RAISES WITHOUT LAG
- MINIMAL EFFUSION, PAIN, & SYMMETRICAL GAIT WITHOUT A LIMP
- MD OR PT APPROVAL

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PHASE 2 – STRENGTH & JOGGING (6-12 Weeks)

PHASE GOALS: IMPROVE STRENGTH & INITIATE JOGGING PROGRAM

RANGE OF MOTION

- **6+ WEEKS - SYMMETRICAL & PAIN-FREE WITH OVERPRESSURE**

STRENGTHENING

- **LEG PRESS, STEP-UPS, & ROMANIAN DEADLIFTS (RDLs)**
- **SQUAT PROGRESSION (BODYWEIGHT SQUATS -> SINGLE LEG SQUATS)**
- **RESISTED HIP ABDUCTION LATERAL BAND WALKS**
- **CORE EXERCISES (PLANKS, V-UPS, SINGLE-LEG BRIDGING)**

CONDITIONING

- **STATIONARY BIKING (MUST BE BEYOND 110 DEG KNEE FLEXION)**
- **ELLIPTICAL & ROWING MACHINE**
- **SWIMMING (PROGRESS KICKING GRADUALLY & PAIN-FREE)**

CRITERIA FOR JOGGING

- **PAIN LESS THAN 3 / 10 (WORST)**
- **WITHIN 2 DEG NORMAL KNEE EXTENSION & 120 DEG KNEE FLEXION**
- **QUADRICEPS & HAMSTRING STRENGTH \geq 60% NORMAL**
- **LESS THAN 4cm DEFICIT ON SINGLE-LEG SQUAT (ANTERIOR REACH)**
- **AT LEAST 1 MINUTE OF SINGLE LEG SQUATS**
- **MD OR PT APPROVAL**

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PHASE 3 - AGILITY (12-20 Weeks)

PHASE GOALS: INTRODUCE DYNAMIC & POWER MOVEMENTS

RANGE OF MOTION

- 12+ WEEKS - MAINTAIN SYMMETRY & PAIN-FREE OVERPRESSURE

STRENGTHENING

- GYM STRENGTHENING (SQUATS, DEADLIFTS, INITIATE OLYMPIC LIFTING)
- CORE EXERCISES (MOUNTAIN CLIMBERS, PLANKS, V-UPS)
- BIODEX FATIGUEING PROTCOLS

CONDITIONING

- BIKING, ELLIPTICAL, JOGGING, SWIMMING & ROWING

PLYOMETRICS & LIGHT AGILITY

- LADDER DRILLS, FOOTWORK AGILITIES
- BOX JUMPS (DOUBLE & SINGLE LEG)
- HIGH INTENSITY PREDICTABLE AGILITY MOVEMENTS

CRITERIA FOR HEAVY AGILITY

- PAIN LESS THAN 2 / 10 (WORST)
- QUAD & HAM STRENGTH \geq 80% NORMAL; \geq 50% H/Q RATIO FOR FEMALES
- AT LEAST 3 MINUTES OF SINGLE LEG SQUATS (RESISTED)
- \leq 5 ON LANDING ERROR SCORING SYSTEM (LESS)
- MD OR PT APPROVAL

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PHASE 4 - RETURN TO PLAY (24+ Weeks)

PHASE GOALS: INITIATE SPORTS SPECIFIC MOVEMENTS & RETURN TO PLAY

STRENGTHENING

- **PROGRESS GYM STRENGTHENING (SQUATS, DEADLIFTS, & OLYMPIC LIFTING)**
- **BIODEX FATIGUE PROTOCOLS & CORE EXERCISES**

CONDITIONING

- **JOGGING, BIKING, SWIMMING, & INTERVAL SPRINT WORKOUTS**

PLYOMETRICS & AGILITY (2-3 DAYS/WEEK)

- **MAX EFFORT BOX JUMPS (PROGRESS WITH ROTATION)**
- **LATERAL & ROTATIONAL AGILITY**
- **UNPREDICTABLE CUTTING AGILITY & CONTACT DRILLS**

CRITERIA FOR RETURN TO PLAY

- **PAIN LESS THAN 2 / 10 (WORST)**
- **> 75/100 ON ACL-RSI SURVEY**
- **QUAD & HAM STRENGTH \geq 90% NORMAL; \geq 60% H/Q RATIO FOR FEMALES**
- **90% NORMAL ON SINGLE-LEG HOP TESTS**
- **95% NORMAL FIGURE OF 8, 5-10-5 PRO-AGILITY, & S-L VERTICAL JUMP**
- **MD APPROVAL**