TB&J

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Dr. Payne ACL Delayed Protocol

The intent of this protocol is to provide the clinician with a guideline of postoperative rehabilitation course. It is not intended to be a substitute for appropriate clinical decision making regarding the progression of a patient's postoperative course. The actual post-surgical physical therapy management must be based on the surgical approach, physical exam/findings, individual progress, and/or the presence of post-operative complications. If a clinician requests assistance in the progression of a patient post-surgery, they should consult Dr. Payne.

This rehabilitation protocol has been designed for patients who have undergone an ACL reconstruction in addition to other surgical issues that may delay the initial time frame of the rehab process. Dependent upon the particular procedure, this protocol also may be slightly deviated secondary to Dr. Payne's medical decision making.

The protocol may be modified if the following concomitant procedures are performed:

- Concomitant meniscal repair
- Concomitant ligament reconstruction (PCL, MCL, LCL, PLC, etc.)
- ACL revision reconstruction
- Articular cartilage procedure or microfracture

The protocol is divided into several phases according to postoperative weeks, and each phase has anticipated goals for the individual patient to reach. The overall goals of the reconstruction and the rehabilitation are to:

- Establish good quadriceps activity
- Control joint pain, swelling, hemarthrosis
- Restore normal knee range of motion
- Restore a normal gait pattern and neuromuscular stability for ambulation
- Restore normal lower extremity strength
- Restore normal proprioception, balance, and coordination for daily activities
- Achieve the highest level of function based on the orthopedic and patient goals

Physical therapy is to begin day 1-2 days post-op. It is extremely important for the supervised rehabilitation to be supplemented by a home exercise program where the patient performs the given exercises at home or at a gym facility.

Important post-op signs to monitor:

- Swelling of the knee or surrounding soft tissue
- Abnormal pain response, hypersensitivity
- Abnormal gait pattern, with or without assistive device
- Limited range of motion
- Weakness in the lower extremity musculature (quadriceps, hamstring)
- Extreme pain, tenderness and/or swelling in the calf

Phase 1 – Acute (0-6 weeks)

Goals:

- Protect graft
- Restore ambulation & ADL status
- ROM (see below)
- Control pain, inflammation, and effusion
- Adequate quad contraction

ROM:

- 0-1 Week: Full extension, slowly progress flexion to 30 degrees
- 1-2 Weeks: Maintain full extension, slowly progress flexion to 60 degrees
- 2-4 weeks: Main full extension, slowly progress to 90 degrees
- Weeks 4-6: Maintain full extension, slowly progress to 110 degrees (may open brace with good quad control and full extension)
- May begin stationary bike when 105 flexion is reached. (DO NOT use bike/force to increase flexion; OK to force extension).

Weight-bearing:

- 0-2 weeks: TTWB with crutches
- 2-4 weeks: PWB (50%) with crutches
- 4-6 weeks: WBAT with crutches
- 6 weeks: May d/c brace and crutches with good quad control, full extension, and when gait is normal (see criteria for full ambulation below)

Exercises:

ROM:

- Patellar mobs
- Ankle pumps
- Gastroc/soleus stretches
- Heel slides wall slides
- Prone hangs/HS stretch

Strengthening:

- Quad sets with Biofeedback x 10 mins (10" holds, 30 reps, 10x daily)
- Straight leg raises (flex and abd) (may add weight if no quad lag present)
- Heel raise/toe raise
- Sidelying Hip abduction
- Balancing
- Pre-gait

  Notes: SLR: Perform quad set and lift 12 in off table, do not progress to functional activity until patient can perform 5' with 5 lbs w/out lag.

Brace:

- Remove brace to perform ROM activities
- I-ROM when walking with crutches

Criteria for Full Ambulation:

- >0° knee extension & 90° knee flexion
- >30 SLRs without a lag
- Minimal effusion, pain, & symmetric gait without a limp
- Physician/PT approval

Phase II –Strengthening and Jogging (6-12 weeks):

Goals:

- Improve strength and initiate a jogging program

ROM:

- 6+ weeks: symmetrical and pain-free with overpressure

Strengthening:

- Leg press, step-ups, & Romanian deadlifts (RDLs) (start very light and progress)
- Squat progression (wall squat → 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° knee flexion)
- Elliptical and rowing machine
- Swimming (progress kicking gradually & pain free) – not before 3 mos.

Balance Training:

- Single leg stance
- Weight shift

- Balance board/two legged
- Cup walking/hesitation walking

Criteria for Jogging:

- Not before 3 mos post-op
- Pain <3/10 (worst)
- Within 2° normal knee extension & 120° knee flexion
- Quad & Hamstring strength >60% of normal
- Less than 4 cm deficit on single-leg squat (anterior reach)
- At least 1 minute of single leg squats
- Physician approval

Phase 3 – Agility (12-20 weeks)

Goals:

- Introduce dynamic & power movements

ROM:

- 12+weeks – maintain symmetry & pain-free overpressure

Strengthening:

- Gym strengthening (squats, deadlifts, initiate Olympic lifting)
- Core exercises (mountain climbers, planks, V-ups)
- Biodex fatigueing protocols

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 <2/10 (worst)
- Quad & HS strength >80% normal; >50% H/Q ration for females
- At least 3 minutes of SL squats (resisted)
- <5 on Landing Error Scoring System (LESS)
- Physician or PT approval

Phase 4 – Return to play (24 -36 weeks)

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 spring 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 (RTP):

- Pain <2/10 (worst)
- >75/100 on ACL-RSI survey
- Quad & HS strength >90% of normal; >60% H/Q ratio for females
- 90% normal on single-leg hop tests
- 95% normal on figure of 8, 5-10-5 pro-agility, & Single leg vertical jump
- Physician approval