



TEXAS BONE & JOINT

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Dr. Payne ACL Accelerated 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.

The following are **exclusionary criteria** for this protocol:

- Concomitant meniscal repair
- Concomitant ligament reconstruction
- ACL revision reconstruction
- MRI evidence of severe bone bruising or articular cartilage damage noted

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:

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

The physical therapy is to begin on the second day post-op. It is extremely important for the supervised rehabilitation to be supplemented by a home fitness program where the patient performs the given exercised at home or at a gym facility.

Important post-op signs to monitor:

- Swelling of the knee or surrounding soft tissue
- Abnormal pain response, hypersensitive
- Abnormal gait pattern, with or without assistive device
- Limited range of motion
- Weakness in the lower extremity musculature (quadriceps, hamstring)
- Insufficient lower extremity flexibility

Return to activity requires both time and clinic evaluation. To safely and most efficiently return to normal or high level functional activity, the patient requires adequate strength, flexibility, and endurance. Isokinetic testing and functional evaluation are both methods of evaluating a patient's readiness to return activity.

Phase I - Immediate Post-Surgical (Weeks 1-2)

Goals:

- Protect graft, restore ambulation & ADL status
- ROM goal of 0-110 (minimum, with an emphasis on extension)
- Adequate quad control
- Control pain, inflammation, and effusion.
- Ice 20 mins of every hour while awake and at home for first 48 hrs.
- **Begin PT POD #2-3**
- PWB to full WBAT as capable

Precautions:

- WBAT with crutches
- **Crutches until quad control is gained (minimum of 2 weeks on crutches)**
- **Brace locked until first post-op, but can come out for motion.**
- Remove brace for ROM
- Brace locked in extension while ambulating for first 2 weeks
- **ROM:**
 - **0-30 until first post-op**
 - **0-60 for Week 1**
 - **0-90 for Week 2, with progression to 0-120 as tolerated**

Criteria for progression to the next phase (Ambulation without brace unlocked and no crutches):

- ROM 0-110 (>0 knee extension & > 90 knee flexion)
- Good quad control
- Walking pain free with normal gait (without a limp).
- Minimal effusion
- >30 straight leg raises without lag
- Doctor or PT approval

ROM:

- PROM
- Patellar mobs
- Ankle pumps.
- Gastroc-soleus stretches
- Wall slides
- Heel slides with towel

Strength:

- Quad sets x 10 mins
- Straight leg raises (flex, abd, add)
- Leg press 20-90 degrees bilateral
- Mini squats (0-45 degrees)
- Multi-angle isometrics (60-90)
- Calf raises
- May begin Bike with 110° of flexion is reached
- Do NOT use bike to increase flexion.

Modalities

- Electrical stimulation as needed
- Ice 15-20 mins with knee at 0 extension after PT
- Blood flow restriction (BFR) for straight leg raises and leg press

Phase II - Week 2-4

ROM:

- Goal 0-125°
- Patellar mobs
- Ankle pumps
- Gastroc-soleus stretches
- Light hamstring stretch @ week 4
- Wall slides/heel slides to reach goal

STRENGTH:

- Quad sets with biofeedback
- SLR in 4 planes (add ext week 4)
- Heel raise/Toe raise
- Leg press
- Mini squats 0-45°
- Front and side lunges
- Multi-hip machine in 4 directions
- Bicycle/EFX
- Wall squats

Balance training:

- Balance board/2 legged
- Cup walking/hesitation walk
- Single leg balance
- Plyotoss

Weight bearing:

- As tolerated (with good quad control)
- Discharge crutches 2 weeks post-op

Brace:

- Unlocked
- Measure for functional brace/switch to Playmaker week 3-4
- Discharge IROM week 4. Transition to playmaker or custom brace.

Goals:

- Maintain full passive knee extension
- Gradually increase knee flexion to 125°
- Diminish pain, inflammation, and effusion
- Muscular strengthening and endurance
- Restore proprioception
- Patellar mobility

Phase III - Weeks 4-12

Weeks 4-8:

- Full ROM 0-135°
- Self-ROM to gain FROM
- And maintain 0° extension
- Gastroc/soleus stretching
- Hamstring stretching

Strength:

- Progress isometric program
- SLR with ankle weight/tubing
- Leg press – single leg eccentric
- Initiate isolated hamstring curls
- Multi-hip in 4 planes
- Lateral/Forward step-ups/ downs
- Lateral lunges
- Wall squats
- Vertical Squats
- Heel raise/Toe raise
- Bicycle/EFX
- Retro treadmill
- Mini-squats/Wall squats
- Straight-leg dead lifts
- Stool crawl
- Squat progression (bodyweight squats → single leg squats)
- Resisted hip abduction lateral band walks
- Core exercises (planks, V-ups, single-leg bridging)

Balance Training:

- Steam boats in 4 planes
- Single leg stance with Plyotoss
- Wobble board balance work – single leg
- 1/2 foam roller work

Weeks 8-10:

ROM:

- Maintain 0-135
- Self ROM as needed
- Gastroc/Soleus/HS stretch

Strength:

- Continue exercises from weeks 4-6
- Progress into jogging program as ROM normalizes, pain & swelling are minimal
- Begin on mini-tramp, progress to treadmill as tolerated, then hard surface when tolerated
- Progress with proprioception training
- Isokinetic work (90-40°)(120-240°/sec)
- Walking program
- Bicycle for endurance
- Plyometric leg press/shuttle work

Criteria for jogging:

- Pain <3/10 (worst)
- Within 2 degrees of normal knee extension & 120 degrees of knee flexion
- Quadriceps & Hamstring strength >60% of normal
- Less than 4 cm deficit on single-leg squat (anterior reach)
- At least 1 minute of single leg squats
- MD or PT approval

Weeks 10-12:

ROM:

- Gastroc/Soleus/HS stretch

Strength:

- Continue exercises from weeks 4-10
- Isokinetic test at 180° and 300°/sec
- Plyometric training drills
- Continue with stretching

Modalities:

- Ice 15-20 mins as needed

Phase IV - Weeks 12-20 (Agility)

Goals: Introduce Dynamic & Power Movements

ROM:

- 12+ weeks: maintain symmetry & pain-free overpressure
- Isokinetic test at 180° and 300°/sec
- Plyometric training drills

Strength:

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

Conditioning:

- Biking, elliptical, jogging, swimming, and rowing

Plyometrics & Light Agility:

- Ladder drills, footwork agilities
- Box jumps (double and 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 mins of single leg squats (resisted)
- <5 on Landing Error Scoring System (LESS)
- MD or PT approval

Phase V - Weeks 24+ (Return to Play)

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 on box jumps (progress with rotation)
- Lateral & rotational agility
- Unpredictable cutting agility & contact drills

Criteria for return to play:

- Pain <2/10 (worst)
- >75/100 on ACL-RSI survey
- Quad & HS strength > 90% normal, >60% H/Q ratio for females
- 90% of normal on Single-Leg Hop tests
- 95% Normal of Figure 8, 5-10-5 pro-agility, & SL vertical jump
- MD approval

Special Instructions/Precautions:
