

**Anterior Cruciate Ligament Reconstruction  
Allograft ACL (Achilles Tendon)-Accelerated Rehab  
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This rehabilitation protocol has been designed for patients with ACL-HS reconstruction who anticipate returning to a high level of activity early postoperatively. The ACL protocol for Achilles Tendon Allograft is similar to the standard accelerated for HS/PT except:

1. Plyometric exercises should be delayed until at least 16 weeks.
2. Sport specific training should also be delayed until at least 16 weeks.

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

- Concomitant meniscal repair
- Concomitant ligament reconstruction
- Concomitant patellofemoral realignment procedure
- 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, 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 2<sup>nd</sup> 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 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, 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 to activity.

**Phase 1: Week 1-2  
Allograft ACL Accelerated Protocol**

<b>WEEK</b>	<b>EXERCISE</b>	<b>GOAL</b>
1-2	ROM Passive, 0-110° Patella mobs Ankle pumps Gastoc-soleus stretches Wall slides Heel slides with towel STRENGTH Quad sets x 10 minutes SLR (flex, abd, add) Multi-hip machine (flex, abd, add) Leg Press (90-20°)-bilateral Mini squats (0-45°) Multi-angle isometrics (90-60°) Calf Raises BALANCE TRAINING Weight shifts (side/side, fwd/bkwd) Single leg balance Plyotoss WEIGHT BEARING Wt bearing as tolerated with crutches Crutches until quad control is gained One crutch before FWB with no crutches BICYCLE	0-110°

May begin when 110° flex is reached

DO NOT use bike to increase flexion

**MODALITIES**

Electrical stimulation as needed

Ice 15-20 minutes with knee at 0° ext

**BRACE**

Remove brace to perform ROM activities

I-ROM when walking with crutches

**GOALS OF PHASE:**

- ROM 0-110°
- Adequate quad contraction
- Control pain, inflammation, and effusion
- PWB TO FWB as capable

**Phase 2: Week 2-4**

**Allograft Accelerated Protocol**

<b>WEEK</b>	<b>EXERCISE</b>	<b>GOAL</b>
2-4	ROM Passive, 0-125° Patella mobs Ankle pumps Gastoc-soleus stretch Light hamstring stretch at wk 4 Wall, heel slides to reach goal	0-125°
	STRENGTH Quad sets with biofeedback SLR in 4 planes (add ext at wk 4) Heel raise/Toe raise Leg Press Mini squat (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 quad control  
 MODALITIES  
 E-stim/biofeedback as needed  
 Ice 15-20 minutes  
 BRACE  
 Discharge week 3 - 4

**GOALS OF PHASE:**

- 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 3: Week 4-12  
 Allgraft Accelerated Protocol**

<b>WEEK</b>	<b>EXERCISE</b>	<b>GOAL</b>
4-8	ROM Self-ROM to gain FROM And maintain 0° extension Gastoc/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	Full ROM 0-135°

Mini-squats/Wall squats

Straight-leg dead lifts

Stool crawl

**BALANCE TRAINING**

Steam boats in 4 planes

Single leg stance with plyotoss

Wobble board balance work-single leg

½ Foam roller work

**MODALITIES**

Ice 15-20 minutes following activity

**BRACE**

Functional brace as needed

**ROM**

Self-ROM as needed

Gastroc/Soleus/HS stretch

Full ROM

0-135°

**STRENGTH**

Continue exercises from wk 4-6

Progress into jogging program as ROM

normalizes, pain and 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)

**WEEK**

8-10 cont

**EXERCISE**

Walking program

Bicycle for endurance

Plyometric leg press/shuttle work

10-12

**ROM**

Gastroc/Soleus/HS stretch

**STRENGTH**

Continue exercises from wk 4-10

Isokinetic test at 180 and 300°/sec

Continue with stretching

**MODALITIES**

Ice 15-20 minutes as needed

**GOALS OF PHASE:**

- Restore full knee ROM (0-135°)

- Increase lower extremity strength and endurance
- Restore functional capability and confidence
- Enhance proprioception, balance, and neuromuscular control

**Phase 4: Week 12-16**  
**Allgraft Accelerated Protocol**

<b>WEEK</b> 12-16	<p><b>EXERCISE</b></p> <p>ROM Continue all stretching activities</p> <p>STRENGTH Continue all exercises from previous phases <b>Start Plyometric drills at 16 weeks</b> Increase jogging/running program Swimming (kicking) Backward running</p> <p>CUTTING PROGRAM Lateral movement Carioca, figure 8's</p> <p>MODALITIES Ice 15-20 minutes as needed</p>
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**GOALS OF PHASE:**

- Maintain muscular strength and endurance
- Enhance neuromuscular control
- Progress skill training
- Perform selected sport-specific activity

**Phase 5-Weeks 16-36 ACL Allgraft Protocol**

<b>WEEK</b> 16-36	<p><b>EXERCISE</b></p> <p>STRENGTH Continue advanced strengthening</p> <p>FUNCTIONAL PROGRAM Progress running/swimming program Progress plyometric program <b>Start sport training program</b></p>
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Progress neuromuscular program  
Ice 15-20 minutes as needed

**GOALS OF PHASE:**

- Return to unrestricted sporting activity
- Achieve maximal strength and endurance
- Progress independent skill training
- Normalize neuromuscular control drills

At six and twelve months, a follow-up isokinetic test is suggested to guarantee maintenance of strength and endurance. Advanced weight training and sports specific drills are advised to maintain a higher level of competition.