



Patellar-quadriceps Tendon Repair Protocol

Applicability: Physician Practice	Date Effective: 3/2017
Department: Rehabilitation Services	Date Last Reviewed / or Date Last Revision: 1/2018
Supersedes: none	
Administration Approval: Amy Putnam, VP Physician Services	

Purpose: Define the protocol to be followed for all patients referred from Northwestern Orthopedics after the above procedure has been performed.

Policy Statement: Treatment will follow the defined protocol below and be carried out by Physical Therapist, Athletic Trainer and/or Physical Therapy Assistants.

Background: N/A

Definitions: N/A

Procedure:

PHASE I (surgery to 2 weeks after surgery)

Rehabilitation appointments begin 3-5 days after surgery

Goals:

- Protect the post-surgical repair
- Minimize edema and pain

Dressing change:

- One week post op remove aquacel AG and reapply aquacel AG dressing once (can stay 7-10 days).

Edema control:

- Educate patient in use of ice (cryocuff) and elevation
- provide tensogrip or kinesiotape as indicated

Brace/Weight Bearing:

- WBAT with crutches and brace locked in extension
- Brace worn at all times except during rehabilitation exercises
- wear brace to transfer in and out of shower can remove while showering
- Brace for sleep x 4 weeks

Range of Motion

- Passive knee ROM 0-30°

Suggested Therapeutic Exercises

- Ankle pumps
- isometric quadriceps sets with knee in full extension
- hamstring sets with knee in less than 30 degrees flexion
- glut sets
- gentle patellar mobilizations
- Upper body circuit training or upper body ergometer (UBE)
- Passive knee flexion 0-30 only

PHASE II (2 - 6 weeks after surgery)

Rehabilitation Goals:

- Normalize gait
- minimize edema and pain
- Protection of the post-surgical repair

Edema control:

- Educate patient in use of ice (cryocuff) and elevation
- provide tensogrip or kinesiotape as indicated

Precautions and Range of Motion:

- WBAT with brace locked in extension
- wean from crutches as clinically indicated
- PROM limits
 - Weeks 3-4 = 0° to 60°
 - Weeks 5-6 0-90°
- no active open chain knee (quad) extension

Suggested Therapeutic Exercises:

- Stationary bike partial revolutions no resistance (within ROM limits above)
- recumbent elliptical (sci-fit) no resistance (within ROM limits above)
- Heel slides
- Knee extension range of motion with foot resting on a towel roll
- 4-way leg lifts with brace locked in extension
- Gentle patellar mobilizations
- Weight shifting on to surgical side with brace on with quad isometric
- Upper body circuit training or UBE
- Can begin walking in chest deep water at 4 weeks

Progression Criteria:

- Progress six weeks post-operatively
- Knee ROM = 0°-0°-90° (i.e. avoid knee hyperextension)
- weaned from crutches



PHASE III (begin after meeting Phase II criteria and 6 to 12 weeks after surgery)

Rehabilitation Goals:

- Normalize gait on level surfaces using brace opened as follows
 - 6-9 weeks open to 40°
 - 9-12 weeks open to 90°
- Quality active quadriceps contractions in weight bearing

Precautions :

- Gradual progression to weight bearing with knee flexion with avoidance of weight bearing knee flexion past 90 degrees for 12 weeks after surgery

Range of Motion:

Active knee extension is now permitted

- Increase active and passive flexion and extension to tolerance

Suggested Therapeutic Exercises:

- Active range of motion (AROM) for open chain knee flexion and extension
- Closed chain quadriceps control from 0° to 40° with light squats and leg press, progressing to shallow lunge steps
- Prone knee flexion
- Stationary bike
- Patellar mobilizations
- Open chain hip strengthening
- Core strengthening
- Upper body circuit training or upper body ergometer (UBE)

Progression Criteria:

- Normal gait mechanics
- Active knee ROM at least 0°-110°

PHASE IV (Begin at 12 weeks after surgery and continue until progression criteria is met)

Rehabilitation Goals:

- Normalize gait on all surfaces without brace
- Single leg stand with good control for 10 seconds
- Full knee ROM
- Good control with squat to 70° of knee flexion

Precautions:

- Avoid any forceful eccentric contractions
- Avoid impact activities
- Avoid exercises that create movement compensations

Suggested Therapeutic Exercises:

- Non-impact balance and proprioceptive drills
- Stationary bike
- Gait drills
- Single leg stance balance activities



- Stretching for patient specific muscle imbalances
- Quad strengthening – closed chain exercises, initially starting as a very short arc of motion and gradually progressing to 70° of knee flexion
- Functional movements (squat, step back, lunge)
- Hip and core strengthening
- Stationary bike, Stairmaster, swimming

Progression Criteria:

- Normal gait mechanics without the brace on all surfaces
- Squat and lunge to 70° of knee flexion without weight shift
- Single leg stand with good control for 10 seconds
- Full AROM for knee flexion and extension

PHASE V (begin after meeting phase IV criteria, usually 4 months after surgery)- 9 months

Appointments:

- Rehabilitation appointments are once every 1-3 weeks or as clinically indicated

Rehabilitation Goals:

- Good control and no pain with sport and work specific movements, including impact

Precautions:

- Post-activity soreness should resolve within 24 hours progression should be slow
- Avoid post-activity swelling
- Avoid running with a limp

Suggested Therapeutic Exercises:

- Impact control exercises (hopping) beginning 2 feet to 2 feet, progressing from 1 foot to other and then 1 foot to same foot.
- Plyometric exercise beginning with low velocity, single plane activities and progressing to higher velocity, multi-plane activities.
- Sport/work specific balance and proprioceptive drills
- Hip and core strengthening
- Stretching for patient specific muscle imbalances
- Replicate sport or work specific energy demands

Return to Work/Sport Criteria: Determined by surgeon based on quality of repair and demands of sport. Typically 9-12 months post op.

- Dynamic neuromuscular control with multi-plane activities, without pain or swelling

Note Well: Variances will be communicated by the surgeon directly to Rehabilitation Services through the MD orders.

Monitoring Plan: Rehab Chart Audit

Related Policies: N/A

References: N/A



Reviewers: Rehab and Ortho

- A. Key Stakeholders:** Michael Barnum, Ortho Medical Director
- B. Committees:** N/A
- C. Key Process Owner (KPO):** Kristy Cushing, Manager Rehab Services. Karen Staniels
Director of Ortho and Rehab

Not part of policy: [ADD Key words for policy search if end user didn't know the name]