# Patellar-Quadriceps Tendon Repair Protocol

<table>
<thead>
<tr>
<th>Applicability: Physician Practice</th>
<th>Date Effective: 3/2017</th>
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<tbody>
<tr>
<td>Department: Rehabilitation Services</td>
<td>Date Last Reviewed / or Date Last Revision: 3/2017</td>
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<td>Supersedes: none</td>
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<td>Administration Approval: Amy Putnam, VP Physician Services</td>
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**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.

**Range of Motion**
- Passive knee ROM 0-30°
**Suggested Therapeutic Exercises**
- Ankle pumps
- isometric quadriceps sets
- hamstring sets
- glut sets
- gentle patellar mobilizations
- Upper body circuit training or upper body ergometer (UBE)

**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 to surgical side with brace on with quad isometric
- Upper body circuit training or UBE

**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 80°
- Quality active quadriceps contractions in weight bearing
Precautions:
• Gradual progression to weight bearing with knee flexion with avoidance of weight bearing knee flexion past 80 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)**

**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 progressions 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:**
- 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

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**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]