Paul N Morton, MD
Hip and Knee Specialist
1380 Lusitana Street, Suite 808, Honolulu, HI 96813
Phone: (808)439-6201 Fax: (808)439-6202

**Quadriceps Tendon Repair Protocol**

The intent of this physical therapy protocol is to provide a guideline of postoperative rehabilitation for the clinician to help treat a patient who has undergone a **Quadriceps tendon Repair**. It is not intended to be a substitute for clinical decision making. Clinical decision making on a postoperative course include physical exam and findings, individualized progress, and presence of any complications. If a clinician requires assistance with progression of a postoperative patient, please consult the referring surgeon.

**Pain Management:**
Appropriate pain management includes an attempt at reducing the amount of narcotics and side effects of various pain medications by using various treatment protocols.Adequate preoperative pain measures include:

- **Anesthetic Blocks** - These are provided by an anesthesiologist preoperatively if clinically indicated
- **Local Analgesics** - Soft-tissue anesthetic injections may be used towards the end of the procedure to reduce post-operative pain
- **IV analgesics** - Postoperative pain medications in the acute postoperative phase may be provided with IV analgesics prior to discharge.
- **Oral analgesics** - Postoperative pain medications include opioids (oxycodone and norco), centrally-acting analgesics (acetaminophen or Tylenol), anti-inflammatory medications (NSAIDs such as meloxicam, celebrex, ibuprofen, or naproxen), and alpha-agonists (Tramadol).
- **Cryotherapy -** Ice and cryotherapy may be applied to the affected extremity allows for improvement in pain control.
- **Elevation -** Keeping the affected extremity elevated above the heart while at rest.
- **Compression -** Applying an ace-wrap or other compressive device to the operated extremity can reduce swelling and improve swelling

**PHASE I - IMMEDIATE SURGICAL POST-OPERATIVE PHASE (7-10 days)**
*Goals:*

- Reduce swelling and manage pain
- Rest

*Evaluation:*

- Avoid falls
- If there is a significant amount of wound drainage, severe pain, or redness to the incision - please return to the orthopaedic surgeon's office for an immediate evaluation

*Therapy:*

- Splint is applied during surgery
- Splint remains in place for 7-10 days

Paul N Morton, MD
Hip and Knee Specialist
1380 Lusitana Street, Suite 808, Honolulu, HI 96813
Phone: (808)439-6201 Fax: (808)439-6202

- May use sling
- Elevate extremity
- Please move hand - open and close.
- Codman's triangles for shoulder motion

**PHASE II - MOTION (2 - 6weeks)**

*Goals:*

- Regain motion in extremity
- Minimize postoperative swelling
- Maintain integrity of repair
- Prevent muscle inhibition

*Evaluation:*

- 2 Week Visit: wound check, suture or staple removal.

*Precautions*

- No active ROM with Knee extension.
- Passive ROM with knee extension to 0 Degrees
- AROM /AAROM knee flexion very gently
- Gradually unlock brace for sitting as PROM knee flexion improves.

*Exercises:*

- Ankle pumps
- Patellar mobilizations
- Hamstring stretch sitting
- Gastroc stretch with towel
- Heelslides
- Quad sets – may add E-stim for re-education at 2-3 weeks upon MD approval
- Patellar mobilization – all directions.
- SLR all directions, active assistive flexion- start at 3rd post-op week – do not allow lag – use e-stim as needed after 2-3 weeks. If unable to achieve full extension, perform SLR in knee immobilizer

Paul N Morton, MD
Hip and Knee Specialist
1380 Lusitana Street, Suite 808, Honolulu, HI 96813
Phone: (808)439-6201 Fax: (808)439-6202

**PHASE III: - EARLY STRENGTHENING (6-8 weeks)**

*Goal:*

- Gradually increase P/A/AAROM during weeks 6-8

*Evaluation:*

- Brace – unlock for sitting to 90 degrees at 6 weeks.
- If quad control sufficient at 8 weeks unlock brace 0-90 degrees for ambulation with bilateral axillary crutches and gradually open brace as ROM improves.
- Progress to ambulation at 8 weeks with no crutches as quadriceps strength allows.
- D/C crutches and brace at 8-12 weeks depending on patient's quadriceps control. Emphasize frequent ROM exercises

*Therapy*

- semi squats
- Gradually increase weight on all SLR, if no lag present
- Week 6 – bike (begin with rocking and progress to full revolutions)
- Week 6 – Closed chain terminal knee extension with theraband
- Week 6 – SAQ (AROM)
- Week 7 – LAQ (AROM)
- Week 8 – SAQ (gradually increase resistance)
- Week 8 – LAQ (gradually increase resistance)
- Week 8 – weight shifts
- Week 8 – balance master and/or BAPS – with bilateral LE weight bearing
- Week 8 – cones

**PHASE IV: INTERMEDIATE STRENGTHENING (9 – 11 Weeks)**

*Therapy*

- Bilateral leg press – concentric only – no significant load work until 12 weeks.
- Toe rises
- Treadmill – Concentrate on pattern with eccentric knee control

**PHASE V: ADVANCED STRNEGHTNEING (11-16 weeks)**

*Exercises*

- Leg press – Gradually increase weight and begin unilateral leg press at week 12
- Wall squats
- Balance activities: unilateral stance eyes open and closed, balance master
- Standing minisquats

Paul N Morton, MD
Hip and Knee Specialist
1380 Lusitana Street, Suite 808, Honolulu, HI 96813
Phone: (808)439-6201 Fax: (808)439-6202

- Step-ups – start concentrically, 2” to start and progress as tolerated
- Week 16 – lunges
- Week 16 – stairclimber/elliptical machine

**Criteria to Start Running:**

- Patient is able to walk with a normal gait pattern for at least 20 minutes without symptoms and performs ADL’s painfree
- ROM is equal to uninvolved side, or at least 0-125 degrees
- Hamstring and quadriceps strength is 70% of the uninvolved side isokinetically
- Patient without pain, edema, crepitus, or giving-way

If you have any questions, please do not hesitate to reach out to Dr. Morton.