

QUADRICEPS TENDON RUPTURE – REPAIR PROTOCOL

Brace locked at 0 degrees for ambulation for 6-8 weeks with use of bilateral Axillary crutches.

Initial Visit: Dressing change

Start PT at 2-3 weeks

May start WBAT with brace locked in extension

At 2-3 weeks home E-stim unit (if needed) for quadriceps muscle re-ed.

At 3 weeks PT can WBAT with brace locked in extension

At 6 weeks typically can open the brace 0-90 degrees with ambulation with bilateral axillary crutches, unless otherwise specified.

PRECAUTIONS: Avoid impact loads/sudden activation (eccentric load)

GOALS:

- A/AAROM 90-100 degrees by 6 weeks, 0-110 degrees by week 8, 0-130 degrees by week 10, and 0-135 degrees by week 12

Week 1-4

No active ROM knee extension.

- PROM knee ext to 0 degrees
- AROM/AAROM knee flexion – very gently – Dr. Rolf will define the safe range at the time of surgery.
- Gradually unlock brace for sitting as PROM knee flexion improves

Exercises:

- Ankle pumps
- Patellar mobilizations
- Hamstring stretch with 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

Week 5:

Gradually increase A/AAROM knee flexion

Exercises:

- Submaximal multi-angle isometrics (30-50% only)
- Continue knee flexion ROM – rocking chair at home

- Active SLR 4 way – no weight for flexion – watch for extensor lag – increase resistance for hip abduction, adduction, and extension.

Add aquatic therapy if available. Move slowly so water is assistive and not resistive

Aquatic therapy exercises:

- With knee submerged in water, knee dangling at 80-90 degrees – slowly actively extend knee to 0 degrees.
- Water walking in chest deep water
- SLR 4 way in the water with knee straight
- Knee flexion in water

Week 6-8:

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.

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

Exercises:

- Total gym semi squats level 3-4
- Gradually increase weight on all SLR, if no lag present
- Weeks 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

Week 9-10

Exercises:

- Total gym level 5-6
- Bilateral leg press – concentric only – no significant load work until 12 weeks.
- Weight shift on minitramp
- Toe rises
- Treadmill – Concentrate on pattern with eccentric knee control

Week 11-16:

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

CRITERIA TO START RUNNING PROGRAM

- 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