

QUAD TENDON/PATELLAR TENDON REPAIR POST-OP INSTRUCTIONS AND REHABILITATION PROTOCOL

This protocol has been developed for rehabilitation of quadriceps and patellar tendon repairs. This protocol is primarily time based (depends on tissue healing). Many different factors can influence the healing and modifications to this timeline and protocol may be made depending on factors such as chronicity of the injury (time from injury to repair), tendon quality and patient comorbidities (tobacco use, diabetes etc.). Physical therapy is an important part of your recovery from this injury and necessary to regain normal function and strength.

For Patients at a glance

- The first 48 hours after surgery should generally be spent resting and recovering. Elevate your operative leg above your heart level as much as possible for the first couple days to help control pain and swelling
- Use the prescribed ice machine or ice bags 30 minutes every couple hours to control pain/swelling
- Take 1 tablet (325 mg) of aspirin per day**, starting the day after surgery and continuing for **2 weeks**. This is done to decrease the risk of blood clots. If there is personal history of blood clots or if there is any known condition that makes you more susceptible to blood clots please let Dr. Hazelwood know.
- If you had a **nerve block at the time of surgery, it usually wears off 12-24 hrs post-operatively**. It is normal to have some numbness in the leg the first few days after surgery as a result. **The first night after surgery take pain medication before going to bed as the nerve block will often wear off during the night.**
- Take the pain medication as prescribed. You may supplement your pain medication with over the counter Tylenol and Ibuprofen. Please make sure you are not exceeding recommended doses (4 gm of Tylenol per 24 hour).
- Dressing may be removed 3 days after surgery, but keep any steri-strips in place. Try to keep the wound as dry as possible until follow-up.
- It is ok to shower after surgery, but keep the dressings and incision wrapped with saran wrap or something similar. When in the shower, do not scrub or soak the incisions. Just let soap/water run over the knee and pat dry. Do not submerge incisions in bath or pool until fully healed (3-4 weeks).
- Physical therapy should begin within 7-10 days following surgery.
- You will be **weight-bearing as tolerated** with crutches following surgery. However it is very important that the brace is kept locked in full extension for walking and weight bearing for the first 4 weeks. After 4 weeks the brace will be unlocked for walking.
- Use the brace at all times except showering and doing your physical therapy exercises for the first 6 weeks.

-Return to driving: There is no conclusive data to guide the exact time when it is safe to return to driving. You cannot drive while still on narcotic pain medications. In general, there should be adequate range of motion of the knee, minimal pain/swelling, and enough strength in the leg to allow you to quickly brake if needed.

-Stairs: When going up stairs, lead with non-surgical side, when going down stairs lead with crutches and surgical side.

For Physical Therapists

I. Rehabilitation Protocol 0-2 Weeks

- a. **Goals:** Protect Repair, minimize swelling/pain, arrange first physical therapy appointment
- b. **Weight bearing/crutch use:** Weight bearing as tolerated, Brace must be locked at full extension for walking x 4 weeks. Use crutches for assisted ambulation
- c. **Brace/Range of motion:** Use brace at all times for ambulation locked at 0 degrees/full extension. Remove brace for showering and exercises only. The range of motion in your brace is usually set from 0 to 30 degrees. Unlock the brace for sitting/laying down. The range of motion will be set on your brace by Dr. Hazelwood. Wear brace at night
- d. **Strengthening:** ankle pumps, gentle patellar mobilization (medial and lateral only), quad control: quad sets, straight leg raise (in brace only), seated hamstring/calf stretch
- e. **Modalities:** swelling management, retrograde massage

II. Rehabilitation Protocol 2-4 Weeks

- a. **Goals:** Protect Repair, minimize swelling/pain, motion progression
- b. **Weight bearing/crutch use:** Weight bearing as tolerated, Brace must be locked at full extension for walking x 4 weeks. Use crutches for assisted ambulation
- c. **Brace/Range of motion:** Use brace at all times for ambulation locked at 0 degrees/full extension. Remove brace for showering and exercises only. The range of motion in your brace is usually set from 0 to 60-75 degrees. The ROM will be set by Dr. Hazelwood. Unlock the brace for sitting/laying down. Wear brace at night.
- d. **Strengthening:** patellar mobilization (medial and lateral only), quad control: quad sets, heel slides, straight leg raise without lag, side lying hip abduction, adduction
- e. **Exercise Progression:** Closed kinetic chain strengthening, Avoid active knee extension against gravity. **Passive flexion max 60 deg at week 2, after week 3 progress to max 75 degrees.**

III. **Rehabilitation Protocol 4-6 Weeks**

- a. **Goals:** Protect Repair, motion progression
- b. **Weight bearing/crutch use:** Weight bearing as tolerated, Brace will be unlocked for walking after week 4. Use crutches for assisted ambulation
- c. **Brace/Range of motion:** Brace unlocked for ambulation. Remove brace for showering and exercises only. The range of motion in your brace is usually set from 0 to 60-90 degrees. The ROM will be set by Dr. Hazelwood. Wear brace at night unless otherwise told.
- d. **Strengthening:** patellar mobilization, quad control: quad sets, heel slides, straight leg raise without lag, side lying hip abduction, adduction.
- e. **Exercise Progression:** Closed kinetic chain strengthening, Avoid active knee extension against gravity. **Passive flexion max 90 degrees.** Standing hip abduction and adduction, prone leg extension, plank as able without discomfort, calf raise
- f. **Criteria to progress:** Full passive knee extension, passive knee flexion 90 degrees, FWB in brace with no pain, Active knee extension to 0 degrees with quad set.

IV. **Rehabilitation Protocol 6-12 Weeks**

- a. **Goals:** normal gait, motion progression, progressive strengthening.
- b. **Weight bearing/crutch use:** wean off crutches, weight bear as tolerated. May use one crutch on opposite side of repair as needed.
- c. **Brace/Range of motion:** Wean off brace as tolerated, progress motion as tolerated. Avoid deep flexion, lunges and deep squats.
- d. **Strengthening:** patellar mobilization, quad control: quad sets, heel slides, straight leg raise, Leg press with 2 legs, hamstring curl, wall/hair squats, double leg Romanian dead lift, glute bridge,
- e. **Exercise Progression:** pain free passive flexion, active flexion, stationary bike, unilateral step ups and downs at 8-10 weeks, no jog, but progress other cardio equipment. Progression of single leg exercises as appropriate. Proprioception exercises.
- f. **Criteria to progress:** Quad Strength: ability to perform 10 single leg squats 60 degrees, knee PROM 120 degrees, single leg stance 30 seconds involved side, symmetrical gait pattern.

IV. **Rehabilitation Protocol 12-24 Weeks Transitional Phase**

- a. **Goals:** normal gait, restore full ROM, quad muscle length, quad strength, single leg dynamic balance
- b. **Jogging:** Initiate return to jogging program: must have full ROM, resolved swelling and no pain.

- c. **Exercise Progression/Strengthening:** continue prior exercises, progressive hip/core strengthening, restore proximal/distal strength to symmetry compared to contralateral side. Begin lateral movements, initiate agility/plyometric program
- d. **Criteria to progress:** Quad Strength 90% of opposite side

V. Rehabilitation Protocol 6-8 months Return to Sport/Full Activity

- a. **Goals:** Progress running program, restore full strength, return to sport
- b. **Sport/Activity Return:** improve multidirectional control, dynamic movements. Improve landing mechanics, add in sport specific exercises based on patients desired sport. If cutting sport focus on rapid acceleration/deceleration activities. Change of direction activity
- d. **Criteria to progress:** Quad Strength 90+% of opposite side. Good control with cutting exercise/sport specific exercise