

## Proximal Hamstring Tendon Repair

The hamstrings are a group of three muscles that run along the back of the thigh. The hamstrings consist of the semitendinosus, the semimembranosus, and the biceps femoris. They are responsible for powering hip extension (bending your hip backwards) and knee flexion (bending your knee). They attach below the knee joint in the lower leg and onto the ischial tuberosity, a site located on the pelvis deep to the gluteal fold.

Hamstring ruptures are almost always the result of an acute injury (e.g. waterskiing). Other activities such as soccer, sprinting or gymnastics are often implicated, but can also lead to strains or sprains of the hamstring tendon, which seldom require surgery. When the hamstring tendons tear, however, it can involve one, two or all three of the muscles being pulled off the ischial tuberosity.

Initial treatment for tendon tears may consist of conservative treatment, including ice, NSAIDs, cortisone injections, and/or physical therapy. However, depending on the severity and nature of the tendon tear, surgical repair may be recommended.

While there are no “hard and fast” rules, in general it is recommended that tears which involve two tendons with retraction of greater than 2 cm, and tears of all three tendons be repaired surgically. Occasionally, tendons with chronic high-grade partial tearing, which have “failed” non-operative management can also benefit from surgical debridement and repair.

Surgical repair consists of an incision along the back of the thigh, freeing of the tendons from the surrounding tissue and reattachment to the ischial tuberosity. This surgery has a high success rate in terms of returning individuals back to their pre-injury level of activity, treating pain, and restoring strength.



Typically it is ideal for repairs to be done within 4 weeks of the time of injury. However, there have been studies showing good results with repair of more chronic injuries. Sometimes a chronic repair can require tendon grafting, which will be explained in more detail by Dr. Price should that prove necessary.

The risks of surgery include but are not limited to:

- Infection
- Nerve injury to the cutaneous or sciatic nerve
- Knee stiffness
- Failure of healing
- Persistent pain or weakness
- Blood clots
- Risks of anesthesia

Afterwards a hinged hip or knee brace is used to protect the repair. The length of time required to wear the brace is usually a minimum of 6 weeks followed by several weeks of rehabilitation.

## Postop Instructions

You will wake up in the operating room with a brace in place. You will go to the recovery room at and then either to a private room or home after a few hours. You can get out of bed when you wish.

You should continue to apply ice to your buttocks to reduce pain and swelling. If you are admitted overnight you will likely be discharged home on the first postoperative.

## Activites & advice for in the hospital and while at home

1. Please call with any concerns: 617-726-6648
2. Apply ice to the knee as it will be quite helpful. After two days, you can change the dressing to a smaller one to allow the cold to better get to the knee. Be sure to leave the little pieces of tape (steri-strips) in place.
3. After two days it is okay to shower and get the wound wet, but do not soak the wound as you would in a bath tub or hot tub.
4. After surgery there is a variable amount of pain and swelling. This will dissipate after several days. Continue to take the pain medicine you were prescribed as needed. Remember it is called pain control, not pain elimination.
5. It is important to look out of signs of infection following surgery. These can include: fever (temperature > 101.50, chills, nausea, vomiting, diarrhea, redness around your incision, or yellow or green drainage from your incision. Should any of these be present please contact Dr. Price's office immediately.
6. You will have an office visit scheduled 10-14 days after your surgery.

## Phase I: First six weeks after surgery

### Goals:

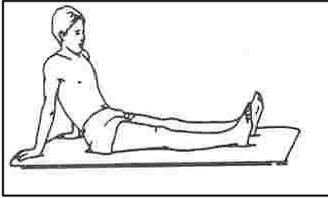
1. Control pain and swelling
2. Activate the quadriceps muscles
3. Protect the repair

### Activities:

1. Brace and crutches: You will go home with crutches and a hip brace limited to 45 degrees. Unless you have been instructed otherwise by Dr. Price, you will be “touch-down” weight bearing. This means you can put a small amount of weight on your foot for balance, but nothing close to your full weight. You should use your crutches at all times for walking.
  - a. At approximately two weeks after surgery you may progress to putting 50% of your weight down while still walking with crutches.
  - b. You may start to progress hip flexion (change the lock setting on the brace) so that by week 4 you are at 60 degrees and by week 6 you are at 90 degrees. It is very important not to progress faster than this, though. Don't undo all your hard work by damaging the repair.
2. Your nurse or therapist will demonstrate the proper form for walking with crutches:
  - a. Put the crutches forward about one step's length
  - b. Put the injured leg forward in line with the crutch tips
  - c. Touch the foot of the injured leg to the floor and put as much weight down as is comfortable (brace on and locked)
  - d. While bearing weight on the injured leg, take a step through with the uninjured leg.
3. Elastic stockings: wear an elastic stocking below the knee until your first postoperative visit. Do at least 10 ankle pump exercises each hour to help prevent blood clots
4. Continue to use ice several times per day, 15-20 minutes at a time.
5. You may notice some numbness along the back side of your thigh. This is often because the cutaneous (skin) nerve was stretched as part of the surgery. Most often this will improve over the course of a few weeks.

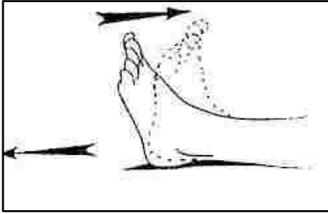
### Exercises:

Program: 7 days per week, 3 times per day		
Quadriceps setting with hip brace in place	1-2 sets	20 reps
Ankle pumps	10 per hour	
Scar mobilization	2-3 minutes	
Passive knee ROM with no hip flexion	1-2 sets	20 reps
*Side-lying hip abduction		
*Calf raises		



### ***Quadriceps Setting***

Lie or sit with knee straight, but hip brace in place. Tighten and hold the front thigh muscle making the knee flat and straight. Hold 5 seconds for each contraction.



### ***Ankle Pumps***

Move the ankle up and down to help stimulate circulation in the leg.

### ***Scar Mobilization***

Gently rub the scar in a circular motion. This will help decrease scar sensitivity. In this phase do not apply lotions or oils. Gentle motion with two fingers should be sufficient.

### ***Passive ROM***

While standing up with the brace in place have a someone bend your knee behind you so that it comes up toward your buttocks. Have the same assistant hold your lower leg so that on the way back down it is being held and does not drop to the ground. It is important to not fire your own muscles at this point, as this may damage the repair.

### ***Other exercises***

It is okay to do upper body cardiovascular exercises with the upper body ergometer or upper body circuit training.

\* DO NOT start these exercises until 2 weeks postoperative

## Phase II: 6-12 weeks after surgery

### Goals:

1. Protect the tendon repair and allow healing
2. Normalize gait
3. Begin muscle strengthening and functional movements

### Activities:

1. Use of the brace and crutches. You may feel like you need the crutches for the first few days after the brace comes off – this is very normal. Gradually start to wean yourself from use of the crutches, ideally over the next two weeks.
2. It is okay to get the wound wet in such as in a bathtub or hot tub.
3. At this point it is okay to start driving. If your right leg was the operated leg, take some practice runs in a deserted parking lot prior to venturing out into rush hour.
4. It is okay to start progressively walking, slowly, on level surfaces. However, you are not cleared for running.

### Exercises:

1. Progressive hip and knee flexion
2. Active stretching of all uninvolved muscle groups
3. Stationary bicycle is okay at this point
4. HS curls – antigravity
5. Hip extension – antigravity
6. At 10 weeks postop may:
  - a. Progress to ankle weight PRE – 1lb per week to 5 lbs
  - b. Bridging SLR
  - c. Wall slides
  - d. Clam shells
  - e. Partial squats

## Phase III: 12-16 weeks after surgery

### Goals:

1. Walk normally
2. Regain and improve range of motion
3. Continue muscle strengthening exercises

### Activities:

1. The repaired tendon is still weak and subject to injury if you overload it. You should continue to be careful when walking up and down steps and inclined surfaces.
2. Continue to use ice if there is knee pain or swelling.
3. You may want to wear a neoprene sleeve over your hamstring as you begin doing more activities, as the warmth and support offers some relief.
4. You should continue to practice walking with increased speed and distances. Do not go so long that the leg aches the next day. No running yet. Sorry.

### Exercises

1. Full range of motion exercises are allowed at this point
2. Gentle HS stretching
3. Start with cautious use of weight training machines. Do not force painful motion – your muscles will fatigue easier and with less weight than you remember. Don't yet push it.
4. Single leg closed chain exercises.

## Phase IV: 16 weeks after surgery

### Goals:

1. Progress strengthening of quadriceps
2. Preserve range of motion
3. Protect repair
4. Return to normal activities

### Activities/Exercises:

1. You may be discharged from PT at some point after the 16th week. This does not mean you are fully recovered, though. Continue the same exercises you have been doing in the previous phase.
2. Continue to progress the amount of weight used in the exercises, but do not overload the hamstring – it will be a good 6 months before it starts feeling normal.
3. You may begin doing walk to jog progressions. Start with 5:1 ratio of walk to run and gradually progress this. Let pain be your guide – do not force painful motion at this point.
4. Sprinting or speed drills may begin at approximately 20 weeks postop.
5. Jumping and plyometrics can begin at approximately 24 weeks postop.