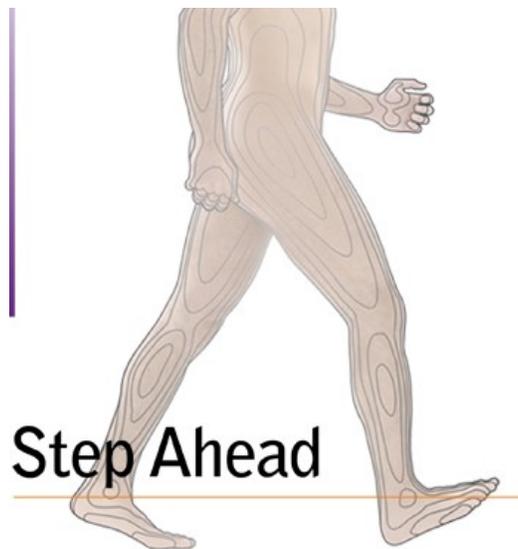


# TIBIAL TUBEROSITY TRANSFER

## Patient Information & Exercise Folder

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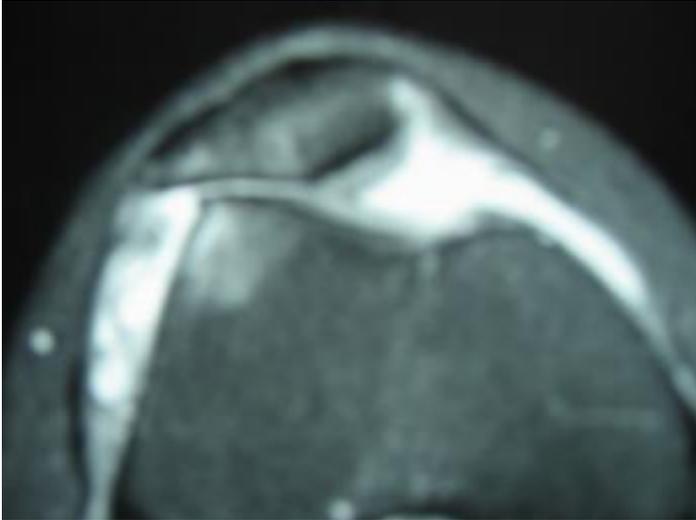
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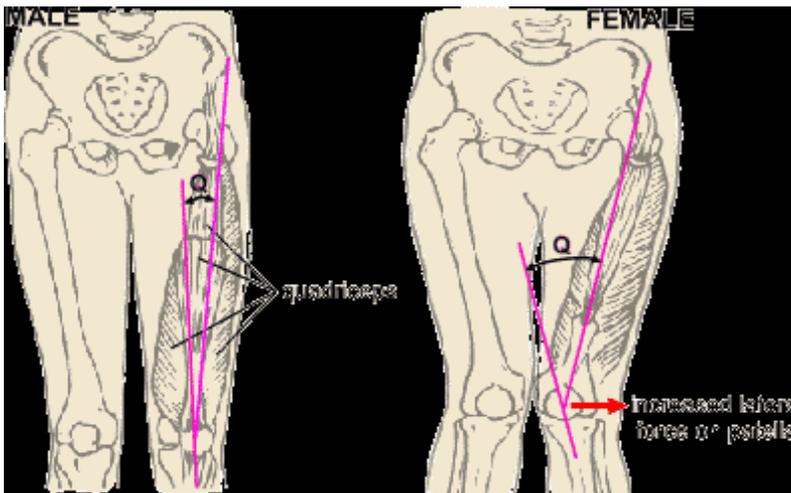
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### Patella Maltracking with Osteoarthritis

Patients with patella malalignment often report chronic knee pain located around the region of the patella. The pain is often made worse with stair use, repetitive knee bending and static sitting positions like when watching a movie. The diagnosis of patella maltracking and Joint overload is made primarily by physical examination. X-rays and MRI will often aid in the diagnosis. Physical therapy is the mainstay for conservative treatment for this condition. If physical therapy fails to relieve the pain associated with patella malalignment then surgical correction is an option. A tibial tubercle transfer may be recommended.



### Tibial Tubercle Osteotomy Surgery:

A Tibial Tuberosity Transfer is a surgical procedure for the treatment of patella maltracking and osteoarthritis. This procedure involves realigning the tibial tubercle; the bump on the front of the shin bone so that the knee cap will track in the center of the femoral groove. By correcting patella tracking, the painful portions of the knee cap are

offloaded and the pain is decreased. By moving the tibial tubercle, medially (towards the inside of the leg) the patella will better aligned to track within its groove.

**Pre-Surgery:**

Before surgery, patients are instructed to continue to be as active as the knee permits. Continue to participate in the home exercise program provided by your physical therapist.

Anti-inflammatories such as ibuprofen or aspirin must be stopped 5 days prior to surgery. Utilize ice and elevation to control pain and swelling during this period  
s On the night before surgery, do not eat after midnight (no chewing gum or lozenges)  
s On the morning of the surgery you may have your daily pills with a sip of water

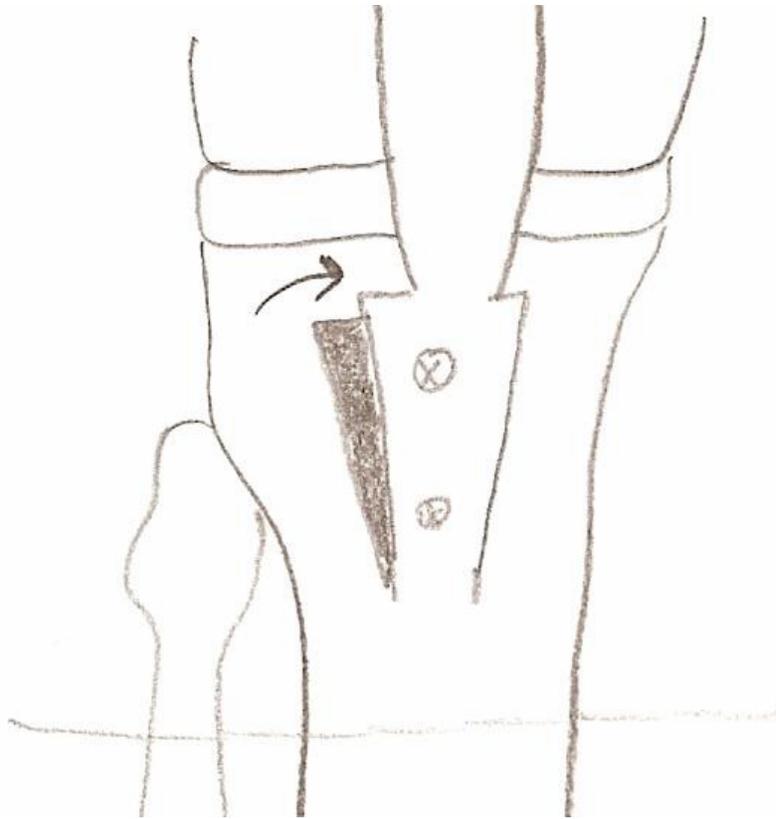
**Surgery:**

The length of the procedure is approximately one hour. The procedure will involve a knee arthroscopy to inspect the inside of the knee joint. Arthroscopic surgery involves using a video camera and small instruments through small incisions to see the anatomy of the knee joint. The video camera allows us to visually inspect the knee joint and specifically evaluate the patella cartilage and assess active patella tracking. Pictures of this will be taken and reviewed during your first post-op visit.

After mobilization of bone, the tubercle is secured with two screws

The tibial tubercle transfer will be conducted through an incision in the front of your leg bellow the patella. A surgical fracture is made in the proximal tibia. This bone portion is then mobilized in a position to assure proper tracking of the patella. Screws are then utilized to secure the mobilized bone in its new place. These screws may need to be removed in the future if they become a source of irritation.

Risks to tibial tubercle osteotomy surgery are rare and involve: Compartment syndrome, blood clots (DVT), infection and delayed bone healing.



**Post-Surgery:**

After the surgery is completed, you will awaken in the operating room and be moved to the recovery area. You may have a drain at the surgical site in order to remove any excess blood. This drain will be discontinued the next morning.

b **Pain Control:** You may take the prescribed medication as directed. You should expect to experience minimal to moderate knee discomfort for several days and even weeks following the surgery. Patients often only need prescription narcotics for a few days following surgery and then can switch to over-the-counter medications such as Paracetamol or Ibuprofen.

P Ice bags and elevation should be utilized both in the hospital and after discharge to decrease swelling and pain. Keep ice on for 20 minutes and off for 45 minutes every 4 hours. Utilize ice as much as you can during the first 10 days after surgery. Be careful not to burn your skin with excessive cold exposure.

e At the completion of surgery, you will have a brace placed on your leg. The brace should be maintained in the locked position with all ambulation. The brace may only be removed when sitting with your leg elevated in an extended position.

w **Physical Therapy:** You will receive PT prior to discharge from the hospital. PT will work on ambulation, functional mobility and leg exercises. You should be comfortable walking independently with crutches before leaving the hospital. You will be able to put

as much weight as tolerated on your knee with brace locked in extension. You should participate in the home exercise program provided at the end of this packet until outpatient physical therapy is started.

o If the bandage is draining, reinforce it with additional dressings for the first 48 hours. After 48 hours remove the bandage leave the steri-strips in place. If drainage continues or restarts after 3 days please call GP practice / Hospital.

r You may shower on post up day one. Keep incision covered when showering for up to three days post-op. You may shower with the wound exposed once the wound is completely dry.

c Skin numbness often occurs around the incision. This usually returns but may be permanent

p Eat a regular diet as tolerated and please drink plenty of fluids.

p First post-op appointment is 10-14 days after the surgery.

p You may drive once you establish full control of your extremity (able to perform a straight leg raise, etc.). If your right knee was operated on, this may take a week or more to achieve

t Call your GP / the hospital / my secretary for Temperature >102 degrees, excessive swelling, pain or redness around the incision sites.

s Plan at least 2-3 weeks away from work or school. Utilize this time to decrease swelling and participate in your home exercise program. You may be able to resume work once the pain and swelling resolves (this varies based on job activity).

**Outcomes/Expectations:** It may take from nine months to a year before patients notice significant improvement from their pre-operative condition. Most patients report 80-90% pain relief at this time

## Post-op Rehabilitation Protocol -Tibial Tubercle Osteotomy

### Phase 1 (Weeks 0-2):

**Goals:** Minimize effusion, Progress range of motion, Utilize brace

#### Treatment plan:

- 1) Progress range of motion to full
- 2) Swelling Control with ice and compression wrap
- 3) Brace in place and locked in extension with all ambulation
- 4) Initiate quadriceps and hamstring muscle activation and general leg control
- 4 ) Quad setting, SLR, heel slides, isometric hamstring/quadriceps contraction
- 4 ) Ankle pumps
- 5) WBAT with crutches

### Phase 2 (Weeks 2-6):

**Goals:** Full knee ROM in extension and flexion, progress quadriceps/hamstring strengthening, independent mobility

#### Treatment plan:

- 1) Continue with swelling control
- 2) Full knee ROM (half to full revolution on exercise bike)
- 3) PRE (go easy with direct quadriceps strengthening until 6 weeks post-op)
- 4) Continue brace locked in extension with all ambulation until post-op week 6

### Phase 3 (Weeks 6-12):

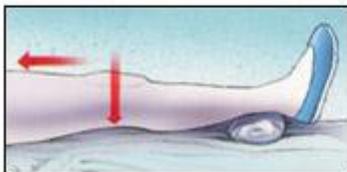
**Goals:** Full lower extremity strengthening/conditioning program, Full activity in gym avoiding open chain full arc exercises

#### Treatment plan:

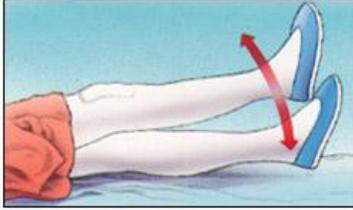
- 1) Progress CKC strengthening
- 2) Progress dynamic balance training

Early Post-operative Exercises *Start the following exercises as soon as you are able. You can begin these in the recovery room shortly after surgery. You may feel uncomfortable at first, but these exercises will speed your recovery and actually diminish your post-operative pain.*

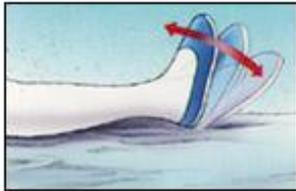
**Quad Sets** - Tighten your thigh muscle. Try to straighten your knee. Hold for 5 to 10 seconds. Repeat this exercise approximately 10 times during a two minute period, rest one minute and repeat.



**Straight Leg Raises** - Tighten the thigh muscle with your knee fully straightened on the bed, as with the Quad set. Lift your leg several inches. Hold for five to 10 seconds. Slowly lower. Repeat until your thigh feels fatigued.



**Ankle exercises:** Actively move the ankle up and down. 5 to 10 times every hour.



**Knee flexion and extension:** Start bending and straightening the knee as soon as you can do.  
5 to 10 times every hour.

