TROPICAL
MEDICAL GROUP

Dx: ☐ Right ☐ Left

Patient Name: _____

Date of Surgery: _____

PT/OT: Evaluate and treat. Follow the following protocol.

Signature/Date: _____

888-9-TROPICAL www.TropicalMedicalGroup.com

ACL Injury Preoperative Rehabilitation

Goals:
* **Control pain and swelling**
* **Restore normal range of motion**
* **Develop muscle strength sufficient for normal gait**
* **Mentally prepare for surgery**

One of the most common complications following ACL reconstruction is loss of motion, especially loss of extension. Loss of knee extension has been shown to result in a limp, quadriceps muscle weakness, and anterior knee pain. Studies have demonstrated that the timing of ACL surgery has a significant influence on the development of postoperative knee stiffness.

THE HIGHEST INCIDENCE OF KNEE STIFFNESS OCCURS IF ACL SURGERY IS PERFORMED WHEN THE KNEE IS SWOLLEN, PAINFUL, AND HAS A LIMITED RANGE OF MOTION.

The risk of developing a stiff knee after surgery can be significantly reduced if the surgery is delayed until the acute inflammatory phase has passed, the swelling has subsided, a normal or near normal range of motion (especially extension) has been obtained, and a normal gait pattern has been reestablished.

Before preceding with surgery the acutely injured knee should be in a quiescent state with little or no swelling, have a full range of motion, and should have a normal or near normal gait pattern. More important than a predetermined time before performing surgery is the condition of the knee at the time of surgery. Use the following guidelines to prepare the knee for surgery:

Immobilize the knee

Following the acute injury you should use a knee immobilizer and crutches until you regain good muscular control of the leg. Extended use of the knee immobilizer should be limited to avoid quadriceps atrophy. You are encouraged to bear as much weight on the leg as is comfortable.

Control Pain and Swelling

Crushed ice along with nonsteroidal anti-inflammatory medications such as Advil, Motrin, Ibuprofen, Aleve (2 tablets twice a day) are used to help control pain and swelling. The non-steroidal anti-inflammatory medications are continued for 7 - 10 days following the acute injury.

Restore normal range of motion

You should attempt to achieve full range of motion as quickly as possible. Quadriceps isometrics exercises, straight leg raises, and range of motion exercises should be started immediately.
Full extension is obtained by doing the following exercises:

Passive knee extension.

- Sit in a chair and place your heel on the edge of a stool or chair.
- Relax the thigh muscles.
- Let the knee sag under it's own weight until maximum extension is achieved.

Heel Props:

- Place the heel on a rolled towel making sure the heel is propped high enough to lift the thigh off the table.
- Allow the leg to relax into extension.
- 3 - 4 times a day for 10 - 15 minutes at a time. See Figure 1 below.



Figure 1. Heel prop using a rolled towel.

Prone hang exercise.

- Lie face down on a table with the legs hanging off the edge of the table.
- Allow the legs to sag into full extension.

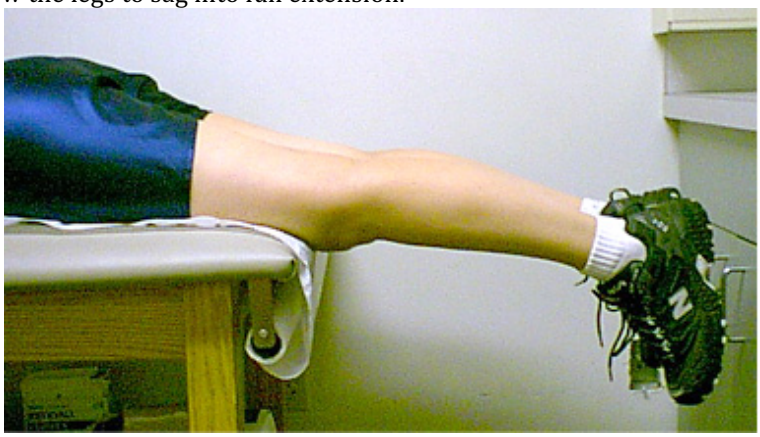


Figure 2. Prone Hang. Note the knee is off the edge of the table.

Bending (Flexion) is obtained by doing the following exercises:

Passive knee bend

- Sit on the edge of a table and let the knee bend under the influence of gravity.

Wall slides are used to further increase bending. Figure 3.

- Lie on the back with the involved foot on the wall and allow the foot to slide down the wall by bending the knee. Use other leg to apply pressure downward.



Figure 3. Wall Slide: Allow the knee to gently slide down

Heel slides are used to gain final degrees of flexion. Figure 4.

- Pull the heel toward the buttocks, flexing the knee. Hold for 5 seconds.
- Straighten the leg by sliding the heel downward and hold for 5 seconds.

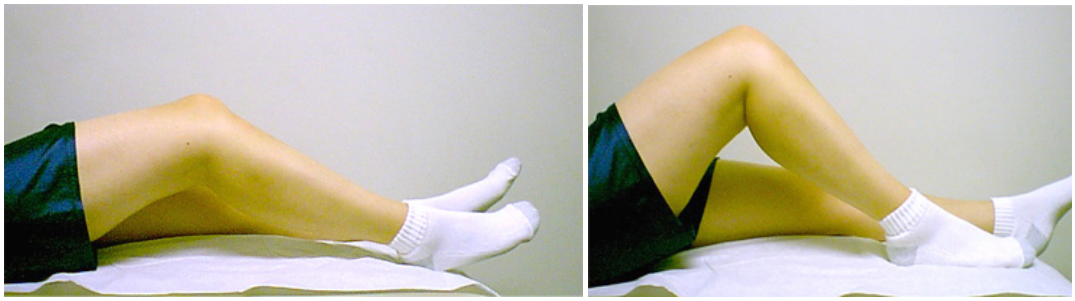


Figure 4. Heel slide – leg is pulled toward the buttocks

- In later stages of rehabilitation, do heel slides by grasping the leg with both hands and pulling the heel toward the buttocks.



Figure 5. Heel slides in later stages of rehabilitation

Develop muscle strength

Once 100 degrees of flexion (bending) has been achieved you may begin to work on muscular strength:

Stationary Bicycle. Use a stationary bicycle two times a day for 10 - 20 minutes to help increase muscular strength, endurance, and maintain range of motion. See Figure 6



Figure 6. Stationary Bicycle helps to increase strength

Swimming is also another exercise that can be done during this phase to develop muscle strength and maintain your range of motion.

Low impact exercise machines such as an elliptical cross-trainer, leg press machine, leg curl machine, and treadmill can also be used.

This program should continue until you have achieved a full range of motion and good muscular control of the leg (you should be able to walk without a limp).

Mentally prepare

- Understand what to realistically expect of the surgery
- Make arrangements with a physical therapist for post-operative rehabilitation
- Make arrangements with your place of employment.
- Make arrangements with family and/or friends to help during the post-operative rehabilitation