



## **Rehabilitation Protocol for Anterior Cruciate Ligament Reconstruction**

### **GOAL:**

To restore range-of motion (ROM), strength, and confidence to the knee while protecting the anterior cruciate ligament (ACL) graft from stretching or rupturing.

### **FACTS:**

1. It requires 4 months for the graft to be transformed into a strong and durable ligament.
2. If the graft should rupture or stretch during this time period it is not repairable.
3. This protocol must be followed throughout the first four months to prevent graft injury.
4. Any deviation from this regimen may unnecessarily compromise your final result.

### **REMINDER:**

When you and I agreed to reconstruct your torn ACL you willingly committed yourself to a six month, vigorous, structured, rehabilitation program. You must understand that the end-result depends to a great extent on your discipline, motivation, and perseverance in performing the exercise program. Without your commitment and energy, the surgery is assured to fail to meet your expectations. With your cooperation and dedication you have an excellent chance to regain the strength, stability, and confidence in your knee that you had before your injury.

Many patients are too busy with the demands of work and family to participate in a formal physical therapy program that requires regular attendance at therapy sessions at inconvenient times during the day. Fortunately, in the majority of cases, rehabilitation can be done at home or while traveling using a stationary bicycle, pool, or exercise equipment at a health club. The following exercise program should be followed **daily on your own** to achieve the goals expected at the end of each time interval. This detailed protocol has been designed as a reference specifically for you, and your trainer or physical therapist.

### **TIMING OF POST-SURGICAL VISITS:**

1. WEEK 1 (7-12 days)
2. WEEK 4
3. WEEK 8
4. WEEK 16
5. TWO YEARS

We are going to carefully monitor your progress at each of these visits. Rarely, it may be necessary to perform a manipulation of your knee or an additional arthroscopy to assist you in regaining motion or to remove adhesions.

### **YOUR REHABILITATION PROGRAM**

## **WEEK 0-2**

1. **WEIGHT BEARING:** Bear weight on the operated leg as tolerated and use your crutches as needed. Crutches may be discarded when the knee is comfortable enough to walk on without a limp.
2. **BRACE:** You will be placed in a brace post-operatively to protect your knee while recovering from anesthesia and to help maintain full extension of your knee. You may remove the brace for range of motion exercises and to allow for cold therapy. This brace will be discontinued once you regain quadriceps control and are able to maintain full extension equal to the other leg on your own.
3. **ELEVATION:** Elevation of your knee above your heart during the first week is essential to reduce swelling. Your foot should be higher than your knee and both should be higher than your heart to allow fluid to flow back into the body. Place support under your foot rather than your knee to allow the knee to maintain full extension while elevating. Pump your foot up and down to help decrease the chance of blood clots and to reduce swelling into your foot.
4. **COLD THERAPY:** Cold Therapy is also essential in reducing the swelling of your leg. Many patients may elect to use a Game Ready device that pumps cold water around the knee. Others may use ice bags to reduce the swelling. Regardless of the method employed, this is important to perform as much as possible during the first couple of weeks and after therapy.
5. **RANGE OF MOTION:** Increase active motion using heel slides and extension stretching within the tolerance of comfort so the knee moves from **0 to 90 degrees by 7-10 days after surgery.**



6. **STRENGTHENING:** Strengthen the knee using straight-leg-raises and isometric quadriceps and hamstring exercises. Rehabilitate the hip by doing abduction, adduction, flexion, and extension exercises.
7. **WOUND CARE:** Please keep the bandage dry until your first office visit. Don't be surprised if bruising develops 3 to 7 days after the operation in the back of the thigh, calf, and ankle.
5. **GOAL:** By two weeks the knee should move from 0 to 90 degrees and will still be sore, stiff, and swollen.

### **WEEK 2-4**

1. **WEIGHT BEARING:** You should be able to discard the crutches between 2 and 4 weeks after surgery.
2. **RANGE OF MOTION:** Increase ROM using the stationary bicycle. Begin with the seat elevated and initially do not apply any resistance to the wheel. Lower the seat as motion increases and add resistance as tolerated. Try to bicycle twice a day for 10 to 15 minutes.
3. **STRENGTHENING:** You may walk unlimited distances and swim as your comfort permits.
4. **GOAL:** By four weeks the knee should extend nearly equal to the opposite knee and flex to at least 120 degrees. It is not unusual to still have some fluid or swelling in the knee which may limit motion. Do not be discouraged if some fluid persists.

### **WEEK 4-8**

1. **STRENGTHENING:** You may use any exercise equipment available to you in your home, gym, and health club. Use lower weight and a higher number of repetitions (20 to 30) to build endurance. Try to exercise 1 hour a day at least 3 to 5 times per week.
2. **GOAL:** By eight weeks the range of motion of the knee should equal the normal side and feel well enough to resume light jogging, golf, shooting baskets, and agility training (i.e. forward and backward running, and sideways running or cross overs)

### **WEEK 8-16**

1. **STRENGTHENING:** Continue to use any exercise equipment available to you in your home, gym, and health club. Increase the weight and resistance on the exercise machines. Long bike rides are encouraged. It's safe to run on a level surface; increase the distance first and then the speed.
2. **GOAL:** By 16 weeks the knee should feel well enough to resume full unrestricted activities and sports including tennis, racquet ball, football, baseball, softball, basketball, soccer, wrestling, volleyball, skating, boxing, and water and snow skiing. .

### **WEEK 16 EVALUATION**

1. **CLINICAL EXAM:** Activity level, hardware symptoms, level of pain, fluid, motion, thigh circumference, stability, and your ability to jump for distance on your reconstructed knee will be measured and assessed. If the knee is stable, pain and swelling are minimal and the leg is strong then full return to work and sports are permitted.
2. **COMMENT:** It may take between six months and a year to regain full confidence in the reconstructed knee. Confidence can only be regained by using the knee and subjecting it to the demands of the sport that you desire to return to.