



Brace-Free Rehabilitation Protocol for Anterior Cruciate Ligament Reconstruction Using Double-Looped Semitendinosus and Gracilis Tendon Graft (DLSTG)

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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. You must not stop suddenly or turn sharply on your operated knee for the first 4 months after surgery.
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 four 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.

Some 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 some cases, the majority of the rehabilitation can be done at home or while traveling using a stationary bicycle, pool, or exercise equipment at a health club. A physical therapist's treatment and supervision is recommended for optimal results. Physical therapy visits are typically 3 times a week in the 1st 4 weeks then twice a week for the 2nd 4 weeks. 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 (X-rays prior to visit: single-leg hop test)
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 as much weight on the operated leg as pain allows and use your crutches as needed. Crutches may be discarded when the knee is comfortable enough to walk on.
2. **RANGE OF MOTION:** Increase active motion using heel slides for flexion and quad sets or prone stretching for extension within the tolerance of comfort so the knee moves from **nearly full extension to 90 degrees flexion by 7-10 days after surgery.**
3. **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.
4. **WOUND CARE:** You may shower 48 hours after surgery if you cover your leg with a plastic bag. Put a towel around your thigh so that if water gets into the plastic bag it wets the towel and not your wound. If drainage does occur keep the wound dry and covered. If it doesn't stop within 5 days of surgery call the office. You may get the incisions wet, in a shower, 7 days after surgery. Do not soak the knee in a bath tub, hot tub, or swimming pool until 2 weeks after surgery. 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 almost full extension to more than 90 degrees flexion and will likely continue to be sore, stiff, and swollen.

WEEK 2-4

1. **WEIGHT BEARING:** You should be able to discard the crutches between 1 and 3 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. **ROENTGENOGRAMS:** An x-ray of your knee is obtained before your visit. The placement of the graft tunnels and fixation devices will be reviewed with you in the office.
2. **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 (at least 85% of unoperated knee) then full return to work and sports are permitted.

3. **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.

ANSWERS TO COMMON QUESTIONS:

How long will I be in the hospital?

Surgery is performed as an outpatient. Patients go home 4-5 hours after surgery when they can eat and walk with crutches. If you have your own crutches please bring them to the hospital with you.

How long does the surgery take to perform?

The surgery usually requires 1-2 hours to perform. Repairing or removing a torn meniscus can add 15-20 minutes to the operation.

When can I drive a car?

When you feel safe and confident behind the wheel so you can avoid getting into an accident. Generally, driving is often resumed within the first 2 weeks after surgery, but may take longer if you have to work a clutch. Do not drive when you are taking pain pills.

When can I return to work or school?

Motivated people who have a sitting or desk job can usually be back at work by 7-10 days after surgery. Construction workers take 3-4 months.

What is the success rate of the surgery?

90% of patients will have stability nearly equal to the normal knee and will be able to return to full unrestricted activities without any brace.

Can I reinjure the graft?

Of course, remember that you tore your own natural ligament, so it is theoretically possible to rupture your graft. Fortunately, rupture of the graft is uncommon. You are more likely to tear the ACL in the other knee than to re-tear your reconstructed ligament.

Can my therapist watch the operation?

Yes, the therapist can call (727) 724-6169 and let our nurse, Tom Fondren, know if they would like to observe the surgery. It is a hospital policy the non-medical personal are not permitted in the operating room; this includes family and friends.

If you have any more questions, and you should, please write them down in the space below and ask me.