



## **Dr. Parks' Six Phase Rehab Protocol for ACL Reconstruction**

(Hamstring Grafts)

### **Phase I. (Pre Surgery)**

The specifics of this phase will depend on your specific injury, but in general we encourage gentle range of motion and strength exercising as tolerated to try and get the knee in optimal pre surgical condition. Ask Dr. Parks about specifics. In general, do as much as you can tolerate. Typically best results with arthroscopic ACL reconstruction are obtained by operating a few weeks *after* injury. Knees with combined ACL/MCL injuries are typically fixed 4-6 weeks after injury for the best results.

### **Phase II. (First Week After Surgery)**

Most patients will be discharged the morning after surgery with a bulky dressing, ace wrap and a Velcro straight leg knee immobilizing brace. We encourage the following exercises for the time between surgery and the first post-op visit (about one week after surgery):

- Passive Extension:** lay flat on your back and try to straighten your knee out completely straight. Spend 5 minutes twice a day getting the knee out straight.
- Quadriceps isometrics** (squeeze and tighten the thigh muscles) 15 repetitions (hold for 3 counts) five times per day (brace on).
- Ankle pumps:** 30 ankle pumps, five times a day (brace on).
- Passive Flexion:** Remove the brace, sit on the edge of a bed or table and slowly let the leg bend at the knee (using the other leg to support if needed). Spend five minutes twice a day letting the leg gradually flex at the knee as tolerated. Don't be disappointed if it doesn't bend much, *we will work on that more later.*
- Keep the long white stocking on your non surgical leg as much as possible this week, and bring the spare one (if you have it) to the office for your first appointment one week after surgery.
- Keep the dressing on the surgical leg clean and dry. You don't have to change the dressing. We will remove it at your one week visit. Cover the leg with a garbage bag to shower.
- Keep the knee iced and elevated as much as you can this first week. We understand that not much of the cooling effect of the ice will reach the knee through the bulky dressing, but do the best you can.
- It is not abnormal to feel a rush of pain when you first stand up. This is due to blood flow *and is normal.*

### **Phase III. (First Post Op Visit – one week – through second post op visit – four weeks)**

After one week you will come in for your first post op visit. We will take of all of the dressings, remove your stitches, and make sure the surgical sites are healing nicely. When the dressing is removed, there will be some bruising and swelling and some dried blood. Don't be alarmed, all of that is normal. If everything looks OK, we will have you start formal out-patient physical therapy at a physical therapy facility. ***Expect to go to physical therapy 2-3x /week for four weeks, then 1-2x/week for an additional 4 weeks.*** At the one week post op visit, you can quit wearing the long white stocking on your non surgical leg. We will replace the ace wrap on your surgical leg with one of the long white stockings which you should wear as much as possible for one more week. You may wish to wear it even longer if your knee is swelling a lot. You can shower now, and the wounds can get wet.

-Continue the **quad isometrics** (30 reps five times a day) and the ankle pumps 30 reps five times a day.

-Start trying to perform a **straight leg raise**. Work on this for five minutes, three times a day. Do this by lying flat on your back with your legs out straight. With the brace on, try to raise your surgical leg so that the heel is two feet off the surface you are resting. This can be tough!

-Continue working on sitting on the edge of a bed or table and letting the leg bend at the knee (**passive flexion**). Increase this to five minutes five times a day. See if you can get it to hang straight down (i.e. 90 degree bend at the knee) by the time you come in for your second week post op visit.

-Continue **passive extension**: Increase this to five minutes five times a day. See if you can get your knee completely straight and flat by the time you come in for your second week post op visit.

-**Icing** will be more effective now that the thick dressing is off. Try it for help with pain control. Try using our over the counter medications like, Advil, Motrin, Ibuprofen, Aleve and Tylenol instead of narcotic pain killers.

-Start trying to use the **stationary bike** (seat high, no resistance).

-**Wean off crutches** (Therapist: patients may come off crutches as soon as they can SLR, even if in phase II).

-**Patella mobility exercises**: your therapist will show you exercises that move the knee cap to lesson scarring there.

-At the one week visit, the stitches are removed. The wounds can now get wet in the shower. It is normal to have some numbness on the lateral (outer) side of the incision.

At about 1-2 weeks, ask your physical therapist to help you **switch from the rigid brace to a brace that hinges at the knee**. Your next visit with Dr. Parks will be in three more weeks (5 weeks post op).

## **Phase IV (1 Week – 5 Weeks Post Op)**

In the early part of phase IV you should be getting off of crutches and into the hinged brace. Our main goal in this phase is **range of motion**. Secondary goals are strength, endurance and balance (we will work more on these later). Work on getting your knee all the way straight (full extension) and all the way bent (full flexion).

**Extension:** It is very important to get full extension range of motion as soon as possible after surgery. If you can lay down flat on your back with your leg out straight and the back surface of your knee is contacting the surface beneath it (no gap), congratulations! You have full extension. If you can't (it is not unusual for this to take some work to achieve), then try this stretch: Lay flat on your back with your leg straight out and a rolled blanket or towel under your heel. Let your muscles relax and you will feel a stretch behind your knee. You will get more out of this stretch if you put a weight on the top of your knee to push the stretch a bit. A 5-10 pound bag of sugar or flour works well. So does a phone book opened to the middle and draped over your knee. You need to do this stretch for 10 minutes 10 times a day if you don't yet have full extension.

**Flexion:** By six weeks post op, you should be able to flex at least 120 degrees. A good home exercise to help you reach this goal is to sit on the edge of a chair with the soles your feet planted firmly on the ground. Mark the spot on the ground where your foot is placed. Do not let it move from this spot. Scoot the chair forward an inch or two. This will bend your knee into more flexion. Rest for five minutes in this position and then scoot forward another inch or two. Do this for 10 minutes, 10 times a day.

**Stationary Bike:** The stationary bike is one of the best rehab tools available for the knee. It helps build range of motion, strength and endurance. In phase III, it is used mostly for range of motion. Set the seat position high and set the resistance at zero. The therapists will help you use the stationary bike. If you have a stationary bike, use it at home 15 minutes a day.

**Strength Exercises:** Your therapists will help you learn to use the theraband strength cords and other methods to perform some simple strength exercises. (**Therapists: avoid open chain quad exercise at all phases of all rehab with my patients**). Note: it is not unusual to experience some painless clicking and catching in the joint during phase III & IV. This resolves as the quadriceps gets stronger.

## **Phase V: Five Weeks – Three Months**

This is the strength phase of your recovery. Look down at your wimpy, out of shape thigh muscles! In phase V we start to build them back. While you cannot perform “high risk sports” (sports that involve jumping, running, cutting, or sudden starts/ stops), you can vigorously exercise on training machines like the **stationary bike, elliptical trainer, Nordic track, etc.** **You can swim, and with the guidance of your therapist, work out with light to moderately heavy weights. The therapists will start hamstring theraband exercises to help rehabilitate your hamstrings.**

**You no longer have to wear the brace full time**, but should use it for “at risk” activities (walking on uneven ground, exercise, hiking, etc). You can gradually **increase the resistance on the stationary bike.** At two months after surgery, most of you will no longer need the supervision of a physical therapist. You still need physical therapy!! You will need to do your exercises **on your own from 2 months on**, using tools like the theraband cords, and, if available to you, exercise machines like the stationary bike, weight machines, etc at your school or gym.

## **Phase VI (Three Months – Six Months)**

If it all looks good on your three month visit, you can start jogging (this will be difficult at first) and golf (do not wear spike shoes). You will be strengthening your knee on your own and working on getting back whatever you still lack in range of motion and quad strength. Don’t be discouraged, it can take nine months to get full flexion and full thigh muscle strength back. Your next (and likely final) office visit with Dr. Parks is at six months. During this phase you may feel tempted to start at risk sports that may damage your graft –DON’T DO IT- Any sport that could jerk the knee could injure the graft. If you are thinking about starting a particular sport and aren’t sure if you should, call Dr. Parks and discuss it with him.

After this final visit, if all looks good, you can return to sports without restrictions. We usually recommend wearing your brace for your first season of any sport (skiing, football, Basketball, etc). After that you won’t need it.