ACL Tear Information

acltear.info/anterior-cruciate-ligament-rehabilitation/acl-rehabilitation-phase-3/

JerryPignolet



Post-Surgery ACL Rehabilitation Exercises: Phase 3

Photo: Cleveland Clinic Sports Medicine

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In Phases 1 and 2, you built a base of function and strength. Your body is now ready to regain much of your pre-tear functionality. This includes agility, reaction time, power, flexibility, endurance and more.

Some people complete Phase 3 ACL rehabilitation and return to normal activities: they can walk, use stairs and do their jobs. However, for most people stopping rehabilitation after Phase 3 means giving up aggressive running and jumping.

If your goal is to return to your sport, your rehabilitation program will continue beyond Phase 3 with physical therapy and athletic training combined with group and on-your-own workouts.

Based on research and observation, it is recommended that all patients continue to strengthen and rehab their legs following Phase 3. Successfully completing Phase 3 does not mean you are at full strength. The end of Phase 3 goal for quad strength in the leg with your reconstructed ACL, for instance, is 70 to 75 percent of the strength of your uninjured leg.

When Can You Begin Phase 3?

You begin ACL rehabilitation Phase 3 when your physical therapist, athletic trainer or physician evaluates you and determines:

• The range of motion of your surgical leg is full and equal to your non-injured leg.

- You can do normal daily living activities without difficulty or favoring your injured leg. These include walking, standing, going up and down at least a dozen steps, and getting in and out of a car.
- You're ready to increase resistance in your strength exercises through weights and bands.
- You can do a double leg squat down to at least 60 degrees at the knee with equal weight on both legs with proper mechanics.
- Your self-assessment score is 7 or higher on IKDC question 10 (see self-assessment below).

Phase 3 normally begins seven to ten weeks after surgery. However, the current function of your body, not time, is what matters.

Phase 3 Goals

By the end of Phase 3, you want to be able to:

- **Maintain** full range of motion equal to your other leg with minimal to no swelling or pain. Being able to bend your reconstructed knee the same amount as the non-surgical knee is critical.
- **Continue** to increase the strength of your surgical leg to 70 to 75 percent of the strength of your non-surgical leg by increasing exercise resistance.
- **Continue** to improve single-leg balance (which is harder than it sounds) and improve motor control. You may be measured using the STAR or Y Balance Test[™], which requires specialized equipment.
- **Do** single and double leg hopping in place with proper mechanics and no pain.
- Add sports-specific activities as you can tolerate.

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Evidence-Based ACL Rehabilitation

The evidence-based MOON Knee Group <u>anterior cruciate ligament post-surgery</u> <u>rehabilitation program</u> has five phases. Each has specific goals, exercises and instructions based on two decades of <u>research</u>. Success depends on completing each phase before moving on to the next. Your physician, physical therapist or athletic trainer will measure your progress and instruct you on when to advance.

ACL Rehab Home Pre-Surgery Phase 1 Rehab Phase 2 Rehab Phases 4-5 Rehab Return to Sport No Surgery Rehab Therapist/Trainer Guidelines

Phase 3 New Exercises: Plyometrics

Your new exercises may include <u>basic plyometrics</u>, also known as jump training. Plyometrics muscles use maximum force in a short period. These explosive movements increase speed and strength.

Your physical therapist or athletic trainer will use a half-dozen or more tests to measure your progress.

Phase 3 Guidelines

As you increase your activities and resistance in your exercises, you want to watch your knee for any swelling or decrease in range of motion. These can happen if you skip several days of exercises and then try to do more in your next session. Advancing too quickly can also cause swelling and decreased range of motion.

The recommendations:

- Do your rehabilitation exercises consistently.
- **Tell** your physical therapistf you're having difficulty completing exercises or having pain or swelling.
- **Keep** your in-person appointments. They allow for evaluation and adjustments to move you forward and resolve any issues.

At this point, your therapist or athletic trainer may discuss the functionality you need to <u>return</u> <u>to your sport</u>. If you have access to a workout facility, they may give you exercises to do on your own or in group sessions.

Self-Assessment: Function and Confidence

At the end of Phase 3, you'll be asked to complete two self-assessments:

- Comparing your current knee function to your preinjury function on a scale of one to 10. One means you're unable to perform daily activities. Ten is able to do all daily activities without limitations or discomfort. (This is question 10 from the 2000 IKDC Subjective Knee Evaluation Form. You've probably completed the full IKDC scale at least once by now.)
- Evaluating your confidence in your reconstructed ACL. How you feel about your reconstructed ACL is an important part of your recovery—so important that the ACL Return to Sport after Injury (ACL-RSI) questionnaire is widely used to assess your confidence in the knee.

Concern about the strength of your knee is normal. An ACL tear is one of the most challenging sports injuries. Recovery takes at least nine months of hard work. Even the most successful ACL reconstruction has a risk of retearing. A confidence assessment can show if something you're feeling, rather than the condition of your knee, is keeping you from advancing toward your return to your sport.

In both self-assessments, answer honestly. Your rehabilitation team can then use your answers to best guide your recovery. This can include introducing thought techniques to build confidence.

Can You Return to Normal Activities After Phase 3?

By the end of Phase 3, you've almost certainly returned to activities of daily living. Patients willing to forego activities with aggressive running or jumping may end their rehabilitation program here. Your physical therapist or athletic trainer will perform a set of diagnostic tests. Using these and your self-assessment, they'll recommend when you're ready to stop rehabilitation or move to the next step like a <u>return-to-sport program</u>.

Important considerations for whether to continue rehabilitation after Phase 3 are:

- If you work, is it physically demanding?
- What is your sport or activity goal? If it is return to sport, continuing supervised rehabilitation is practically a necessity.
- What time and resources can you dedicate to the next phases?

If you're unable to resume your previous level of function or you want to return to a sport with running, jumping, pivoting and turning, the recommendation will be to continue your rehab and return-to-sport program. This might also include group, school and independent training. Group physical therapy and workouts mimic a team atmosphere, increase motivation and encourage participation.

Based on research and observation, it is recommended that all patients continue to strengthen and rehab their legs following Phase 3. To cite just one muscle group: at the end of Phase 3, quad strength in your leg with the torn ACL is required only to be 70 to 75

Phase 3 ACL Rehabilitation Exercises

Alternate Seated Passive-Assisted Knee ExtensionS

- Seated in a chair place the foot of your nonoperative leg under the knee surgery leg behind the foot.
- Gently use your good leg to lift your surgical leg out as straight as possible while keeping your surgical leg relaxed.
- Return to the starting position.
- Repeat 10–20 times two to three times each day.

PRIMARY Standing Hip Flexion With resistance

This is a weight-bearing next step from <u>straight-leg raises</u>. Standing hip flexion challenges your single-leg stability on the stationary leg and the strength of your hip flexors and quadriceps of your moving leg.

- Loop or tie an exercise band around a secure object like a table leg.
- Place one ankle inside the loop and step away until there is slight tension on the band.
- Stand tall and tighten the front thigh (quadriceps) muscle of the leg in the band, straightening and locking the knee.
- Holding your quadriceps tight, lift the leg in the band slightly and kick forward slowly.
- Return to the starting position slowly.
- Complete the movement 12 times.
- Switch legs.
- Perform 1-3 times daily as directed by your physical therapist.

PRIMARY Standing Single-Leg Hip Extension With Resistance

This exercise is a weight-bearing next step from the <u>prone stomach-lying leg raises</u> from Phase 1. Single-leg standing hip extensions challenge the stability of your stationary leg and the strength of the hip extensors of your moving leg.

- Loop or tie an exercise band around a secure object such as a table leg.
- Place one ankle inside the loop and step back until there is slight tension on the band.
- Stand tall. Tighten the front thigh (quadriceps) muscle of the leg inside the band, straightening and locking the knee.
- With your quadriceps tight, lift the leg in the band slightly and kick forward slowly.
- Return slowly to the starting position.
- Complete the movement 12 times.
- Switch legs.
- Perform one to three times daily as directed by your physical therapist.

PRIMARY Standing Single-LEg Hip Abduction With Resistance

This is a weight-bearing next step from side-lying leg raises. Standing single-leg hip abduction challenges your stability and hip strength on the stationary leg and the strength of your hip abductors of the moving leg.

- Loop or tie an exercise band around a secure object such as a table leg.
- Place one ankle inside the loop and step to the side until there is slight tension on the band.
- Lift the left leg slightly and move it out to the side. Keep the knee in the band straight.
- Stand tall. Avoid the temptation to lean your body to the side.
- Return slowly to the starting position.
- Complete the movement 12 times.
- Switch to the other leg.
- Perform one to three times daily as directed by your physical therapist.

PRIMARY Double-Leg Quarter Squats

Double-leg quarter squats provide an important transition to strengthen further your quadriceps, gluteal muscles and hamstrings. They also enable you to improve weight-bearing movements through your knees.

There are multiple important steps to this exercise. *Avoid having non-targeted muscles perform the workload (called compensation)*. This will help you achieve your goals more efficiently.

- Stand with your feet shoulder-width apart.
- Place your hands on your waist.
- Bend slightly at your hips, then at your knees.
- Lower your buttocks down about six inches as if you were going to sit in a chair.
- Straighten your legs and hips to return to standing.
- Keep your weight evenly on both legs. Avoid shifting weight to the nonoperative side.
- Keep your trunk straight and limit any tilt forward. *Aim to keep the middle part of your knees over your second and third toes without letting your knees go forward beyond your toes.*

You might find it useful to do these squats in front of a mirror. This will show you whether you're keeping weight evenly on each leg.

PRIMARY Double-Leg Heel Raises (calf press)

This exercise will strengthen your calves. This improves your ability to walk, jump and, later in your rehab, run.

- Stand with your feet shoulder-width apart at the edge of a table or counter for support.
- Lift your heels slowly over two seconds to rise onto both toes. Keep your weight evenly on both legs.

- Hold for a short period, then lower slowly for four seconds.
- Repeat two sets of 12 one time per day.
- Make sure your motion is vertical. Do not rock your body. Use your arms only to stay in position, not to lift.

PRIMARY SiNGLE-LEG Heel Raises

This exercise improves the strength of your calves. This improves your ability to walk, jump and later in your rehabilitation, run.

- Stand with your hands on a solid surface and your feet shoulder-width apart.
- Lift and keep the foot of your non-surgical leg off the ground.
- Rise slightly onto the front of the foot and toes of your surgical leg.
- Keeping your toes on the ground, raise the heel of your surgical leg using a 2-second count, then lower using a 4-second count.
- Move straight up and down. Don't rock forward. Don't use your arms to lift.
- Complete this exercise 12 times, two times per day.

PRIMARY Standing Anterior Reach

Standing anterior reach improves the stability and strength of your stationary leg.

- Stand straight with your hands on or just in front of your lower abdomen.
- Bend one knee as you reach the other foot forward as far as you can under control.
- Lightly touch your heel down for added stability.
- Return to standing straight.
- Complete the movement 12 times. Moving slowly increases the benefit.
- Switch legs.
- Perform one to three times daily as directed.

PRIMARY Standing Hip Hinge

This body-weight exercise improves your single-leg stability and hip extensor strength. As your strength improves, you can hold a small weight when advised by your physical therapist.

- Balance on one leg with the knee slightly bent.
- Keep the other leg straight.
- Hinge forward at the hips, bringing your torso down toward the ground until you feel a slight stretch in your hamstrings.
- Allow your straight leg to lift up behind you.
- Keep your low back vertical. Do not bend forward.
- Return to the starting position slowly.
- Complete 12 times.
- Switch to the other leg.
- Perform one to three times daily as directed by your physical therapist.

PRIMARY Side Step Up

This exercise develops strength and stability. This is key for developing base lateral movement skill.

- Stand beside a two- to six-inch step, stable board or platform.
- Place the nearest foot up on the step.
- Lift yourself up on that foot, putting your weight through the heel.
- At the same time, lift your opposite knee in the air to 90 degrees.
- Return to the starting position slowly.
- Step completely off the step.

PRIMARY FRONT Step Ups

- Stand behind a 6-inch step
- Place one foot onto the step and step up with your weight on the heel.
- As you step up, lift your other knee forward and up until your thigh comes to 90 degrees at your hip.
- Slowly return to the starting position, stepping completely off the step.
- Complete the movement 12 times, then switch and do the other leg.
- Perform one to three times daily as directed by your physical therapist.

Phase 3 Exercises

SEATED KNEE EXTENSIONS STANDING HIP FLEXION With Resistance STANDING SINGLE-LEG HIP EXTENSION WITH RESISTANCE STANDING SINGLE-LEG HIP ABDUCTION WITH RESISTANCE Double-Leg Quarter Squats Double-Leg Heel Raises Single-Leg Heel Raises Standing Anterior Reach Standing Hip Hinge Side Step Up Front Step Ups

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