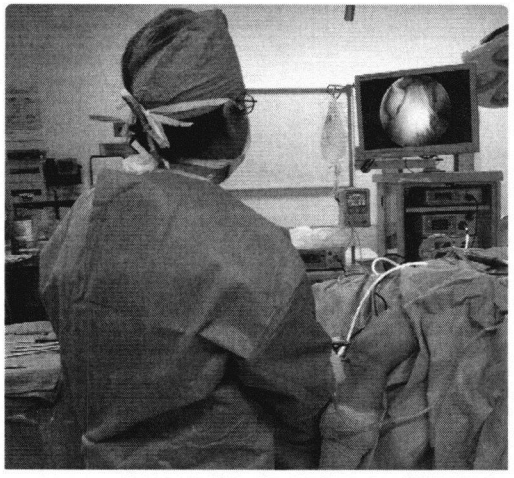
TREATMENT

Knee Arthroscopy

Knee arthroscopy is a surgical procedure that allows doctors to view the knee joint without making a large incision (cut) through the skin and other soft tissues. Arthroscopy is used to diagnose and treat a wide range of knee problems.

During knee arthroscopy, your surgeon inserts a small camera, called an arthroscope, into your knee joint. The camera displays pictures on a video monitor, and your surgeon uses these images to guide miniature surgical instruments.

Because the arthroscope and surgical instruments are thin, your surgeon can use very small incisions, rather than the larger incision needed for open surgery. This results in less pain for patients, less joint stiffness, and often shortens the time it takes to recover and return to favorite activities.



During arthroscopy, your surgeon can see the inside of your knee in great detail on a video monitor.

Anatomy

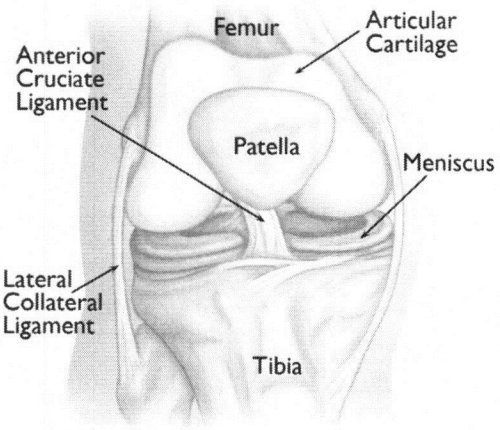
Your knee is the largest joint in your body and one of the most complex. The bones that make up the knee include the lower end of the femur (thighbone), the upper end of the tibia (shinbone), and the patella (kneecap).

Other important structures that make up the knee joint include:

- **Articular cartilage.** The ends of the femur and tibia, and the back of the patella are covered with articular cartilage. This slippery substance helps your knee bones glide smoothly across each other as

you bend or straighten your leg.

- **Synovium.** The knee joint is surrounded by a thin lining called synovium. This lining releases a fluid that lubricates the cartilage and reduces friction during movement.
- **Meniscus.** Two wedge-shaped pieces of meniscal cartilage act as "shock absorbers" between your femur and tibia. Different from articular cartilage, the meniscus is tough and rubbery to help cushion and stabilize the joint.
- **Ligaments.** Bones are connected to other bones by ligaments. The four main ligaments in your knee act like strong ropes to hold the bones together and keep your knee stable.
    - The two collateral ligaments are found on either side of your knee.
    - The two cruciate ligaments are found inside your knee joint. They cross each other to form an "X" with the anterior cruciate ligament in front and the posterior cruciate ligament in back.



Normal anatomy of the knee. Arthroscopy is commonly used to diagnose and treat problems that damage the articular cartilage, ligaments, and other structures around the joint.

When Knee Arthroscopy is Recommended

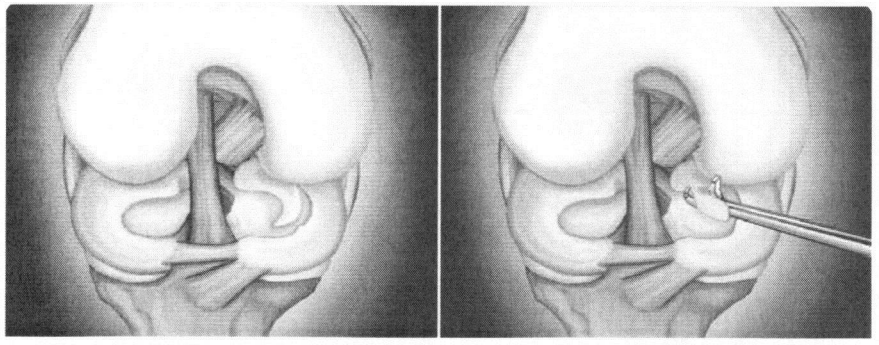
Your doctor may recommend knee arthroscopy if you have a painful condition that does not respond to nonsurgical treatment. Nonsurgical treatment includes rest, physical therapy, and medications or injections that can reduce inflammation.

Knee arthroscopy may relieve painful symptoms of many problems that damage the cartilage surfaces and other soft tissues surrounding the joint.

Common arthroscopic procedures for the knee include:

- Removal or repair of a torn meniscus
- Reconstruction of a torn anterior cruciate ligament
- Removal of inflamed synovial tissue
- Trimming of damaged articular cartilage

- Removal of loose fragments of bone or cartilage
- Treatment of patella (kneecap) problems
- Treatment of knee sepsis (infection)



(Left) A large meniscal tear called a "flap" tear.
(Right) Arthroscopic removal of the damaged meniscal tissue.

Preparing for Surgery

Evaluations and Tests

Your orthopaedic surgeon may recommend that you see your primary doctor to assess your general health before your surgery. He or she will identify any problems that may interfere with the procedure. If you have certain health risks, a more extensive evaluation may be necessary before your surgery.

To help plan your procedure, your orthopaedic surgeon may order preoperative tests. These may include blood tests or an electrocardiogram (EKG).

Admissions Instructions

If you are generally healthy, your knee arthroscopy will most likely be performed as an outpatient. This means you will not need to stay overnight at the hospital.

Be sure to inform your orthopaedic surgeon of any medications or supplements that you take. You may need to stop taking some of these before surgery.

The hospital or surgery center will contact you ahead of time to provide specific details of your procedure. Make sure to follow the instructions on when to arrive and especially on when to stop eating or drinking prior to your procedure.

Anesthesia

Before your surgery, a member of the anesthesia team will talk with you. Knee arthroscopy can be performed under local, regional, or general anesthesia:

- Local anesthesia numbs just your knee
- Regional anesthesia numbs you below the waist
- General anesthesia puts you to sleep

Your orthopaedic surgeon and your anesthesiologist will talk to you about which method is best for you.

Surgical Procedure

Positioning

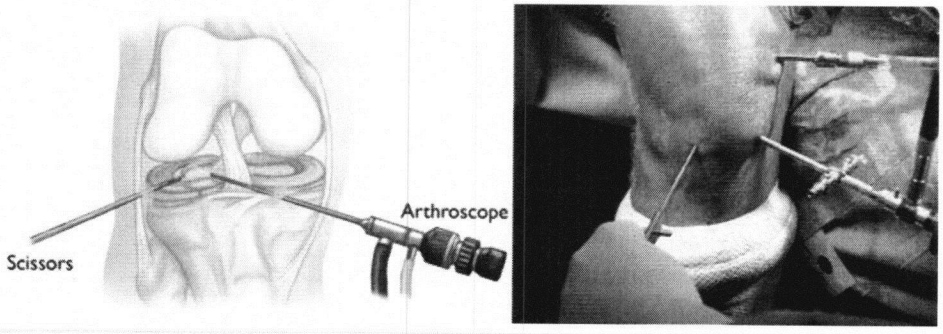
Once you are moved into the operating room, you will be given anesthesia. To help prevent surgical site infection, the skin on your knee will be cleaned. Your leg will be covered with surgical draping that exposes the prepared incision site.

At this point, a positioning device is sometimes placed on the leg to help stabilize the knee while the arthroscopic procedure takes place.

Procedure

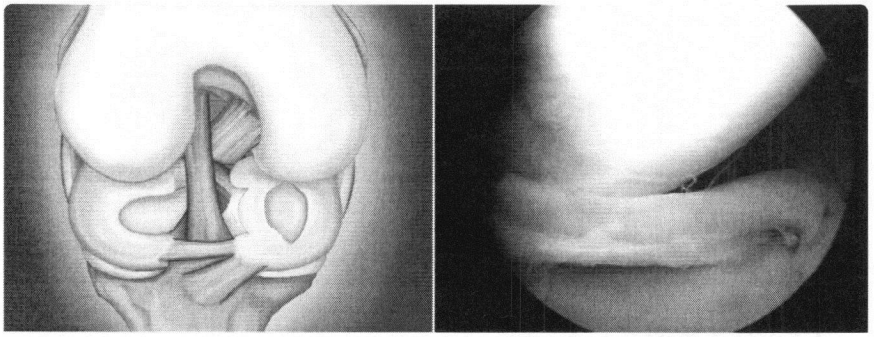
To begin the procedure, the surgeon will make a few small incisions, called "portals," in your knee. A sterile solution will be used to fill the knee joint and rinse away any cloudy fluid. This helps your orthopaedic surgeon see the structures inside your knee clearly and in great detail.

Your surgeon will insert the arthroscope and surgical instruments through small incisions called "portals."



Your surgeon's first task is to properly diagnose your problem. He or she will insert the arthroscope and use the image projected on the screen to guide it. If surgical treatment is needed, your surgeon will insert tiny instruments through other small incisions.

Specialized instruments are used for tasks like shaving, cutting, grasping, and meniscal repair. In many cases, special devices are used to anchor stitches into bone.



(Left) A common type of meniscal tear is a "bucket handle" tear.
(Right) A photo of a bucket handle tear taken through an arthroscope.

Click on the video below to watch arthroscopic treatment for a bucket handle tear.

Closure

Most knee arthroscopy procedures last less than an hour. The length of the surgery will depend upon the findings and the treatment necessary.

Your surgeon may close each incision with a stitch or steri-strips (small bandaids), and then cover your knee with a soft bandage.

A soft bandage will protect your incisions while they heal.

Complications

The complication rate after arthroscopic surgery is very low. If complications occur, they are usually minor and are treated easily. Possible postoperative problems with knee arthroscopy include:

- Infection
- Blood clots
- Knee stiffness
- Accumulation of blood in the knee

Recovery

After surgery, you will be moved to the recovery room and should be able to go home within 1 or 2 hours. Be sure to have someone with you to drive you home and check on you that first evening.

While recovery from knee arthroscopy is faster than recovery from traditional open knee surgery, it is important to follow your doctor's instructions carefully after you return home.

Pain Management

After surgery, you will feel some pain. This is a natural part of the healing process. Your doctor and nurses will work to reduce your pain, which can help you recover from surgery faster.

Medications are often prescribed for short-term pain relief after surgery. Many types of medicines are available to help manage pain, including opioids, non-steroidal anti-inflammatory drugs (NSAIDs), and local anesthetics. Your doctor may use a combination of these medications to improve pain relief, as well as minimize the need for opioids.

Be aware that although opioids help relieve pain after surgery, they are a narcotic and can be addictive. Opioid dependency and overdose has become a critical public health issue in the U.S. It is important to use opioids only as directed by your doctor. As soon as your pain begins to improve, stop taking opioids. Talk to your doctor if your pain has not begun to improve within a few days of your surgery.

Medications

In addition to medicines for pain relief, your doctor may also recommend medication such as aspirin to lessen the risk of blood clots.

Swelling

Keep your leg elevated as much as possible for the first few days after surgery. Apply ice as recommended by your doctor to relieve swelling and pain.

Dressing Care

You will leave the hospital with a dressing covering your knee. Keep your incisions clean and dry. Your surgeon will tell you when you can shower or bathe, and when you should change the dressing.

Your surgeon will see you in the office a few days after surgery to check your progress, review the surgical findings, and begin your postoperative treatment program.

Bearing Weight

Most patients need crutches or other assistance after arthroscopic surgery. Your surgeon will tell you when it is safe to put weight on your foot and leg. If you have any questions about bearing weight, call your surgeon.

Rehabilitation Exercise

You should exercise your knee regularly for several weeks after surgery. This will restore motion and strengthen the muscles of your leg and knee.

Therapeutic exercise will play an important role in how well you recover. A formal physical therapy program may improve your final result.

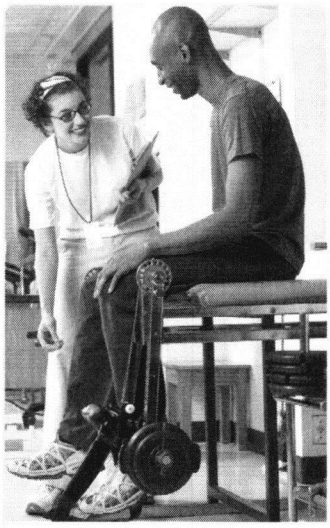
Driving

Your doctor will discuss with you when you may drive. Typically, patients are able to drive from 1 to 3 weeks after the procedure.

Outcome

Many people return to full, unrestricted activities after arthroscopy. Your recovery will depend on the type of damage that was present in your knee.

Unless you have had a ligament reconstruction, you should be able to return to most physical activities after 6 to 8 weeks, or sometimes much sooner. Higher impact activities may need to be avoided for a longer time.



Working with a physical therapist can help you achieve your best recovery.

If your job involves heavy work, it may be longer before you can return to your job. Discuss when you can safely return to work with your doctor.

For some people, lifestyle changes are necessary to protect the joint. An example might be changing from high impact exercise (such as running) to lower impact activities (such as swimming or cycling). These are decisions you will make with the guidance of your surgeon.

Sometimes, the damage to your knee can be severe enough that it cannot be completely reversed with surgery.

Last Reviewed

September 2016

Contributed and/or Updated by

Rick Wilkerson, DO

Peer-Reviewed by

Stuart J. Fischer, MD

OrthoInfo

RECOVERY

Knee Arthroscopy Exercise Guide

Regular exercise to restore strength and mobility to your knee is important for your full recovery after arthroscopic surgery. Your orthopaedic surgeon or physical therapist may recommend that you exercise for approximately 20 to 30 minutes, 2 or 3 times a day. They may suggest some of the exercises shown below. They may also advise you to engage in a walking program.

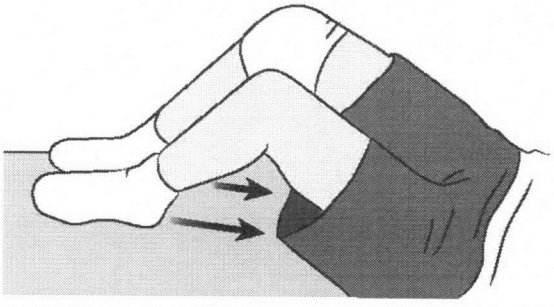
This guide can help you better understand your exercise or activity program, supervised by your orthopaedic surgeon or physical therapist. To ensure your safe recovery, be sure to check with your therapist or surgeon before performing any of the exercises or activities shown.

Initial Exercise Program

Hamstring Contraction

No movement should occur in this exercise. Lie or sit with your knees bent to about 10 degrees. Pull your heels into the floor, tightening the muscles on the back of your thigh. Hold for 5 seconds, then relax.

Repeat 10 times.

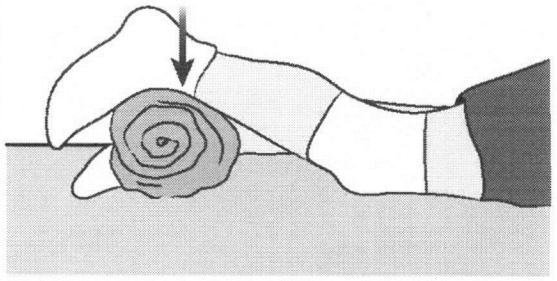


Hamstring contraction

Quadriceps Contraction

Lie on stomach with a towel roll under the ankle of your involved knee. Push ankle down into the towel roll. Your leg should straighten as much as possible. Hold for 5 seconds, then relax.

Repeat 10 times.



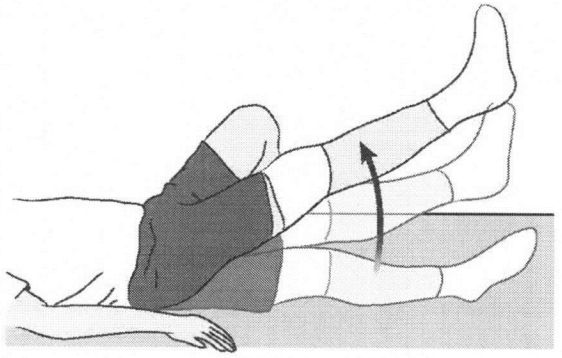
Quadriceps contraction

Straight Leg Raises

Lie on your back, with your uninvolved knee bent. Straighten your involved knee. Slowly lift leg about 6 inches, then hold for 5 seconds. Continue lifting in 6-inch increments, holding each time. Reverse the procedure, and return to the starting position.

Repeat 10 times.

Advanced: Before starting, add weights to your ankle, starting with 1 pound of weight and building up to a maximum of 5 pounds of weight over 4 weeks.

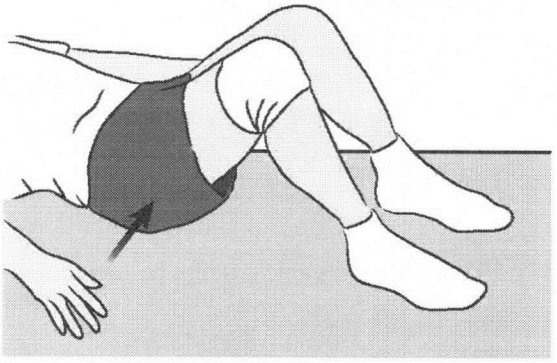


Straight leg raises

Buttock Tucks

While lying down on your back, tighten your buttock muscles. Hold tightly for 5 seconds, then relax.

Repeat 10 times.



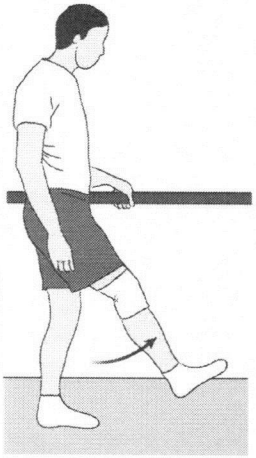
Buttock tucks

Straight Leg Raises, Standing

Support yourself, if necessary, and slowly lift your involved leg forward keeping your knee straight. Return to the starting position.

Repeat 10 times.

Advanced: Before starting, add weights to your ankle, starting with 1 pound of weight and building up to a maximum of 5 pounds of weight over 4 weeks.



Straight leg raises, standing

Intermediate Exercise Program

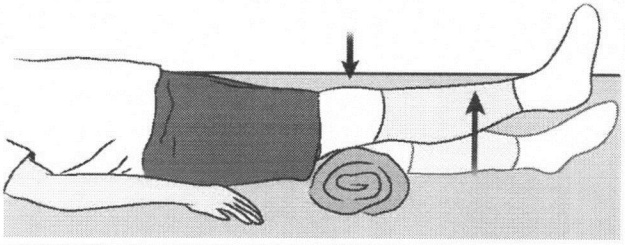
Terminal Knee Extension, Supine

Lie on your back with a towel roll under your knee.

Straighten your knee (still supported by the roll) and hold for 5 seconds. Slowly return to the starting position.

Repeat 10 times.

Advanced: Before starting, add weights to your ankle, starting with 1 pound of weight and building up to a maximum of 5 pounds of weight over 4 weeks.



Terminal knee extension, supine

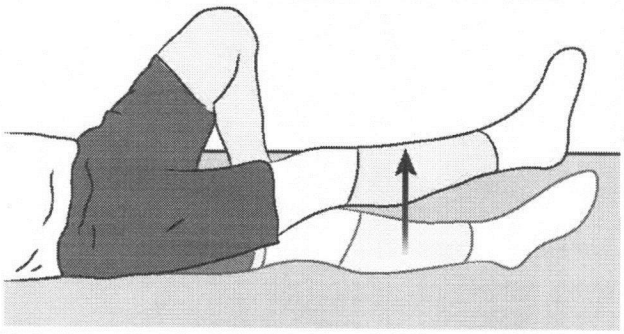
Straight Leg Raises

Lie on your back, with your uninvolved knee bent. Straighten your other knee with a quadriceps muscle contraction.

Now, slowly raise your leg until your foot is about 12 inches from the floor. Slowly lower it to the floor and relax.

Perform 5 sets of 10 repetitions.

Advanced: Before starting, add weights to your ankle, starting with 1 pound of weight and building up to a maximum of 5 pounds of weight over 4 weeks.

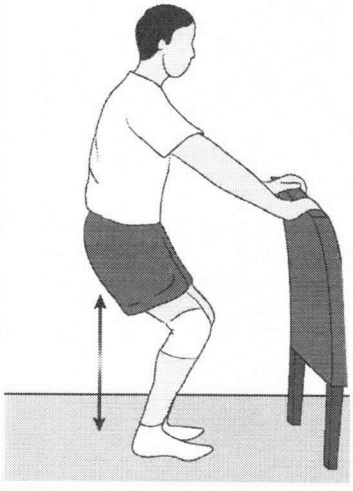


Straight leg raises

Partial Squat, with Chair

Hold onto a sturdy chair or counter with your feet 6-12 inches from the chair or counter. While keeping your back straight, slowly bend your knees. DO NOT go any lower than 90 degrees. Hold for 5-10 seconds. Slowly come back up. Relax.

Repeat 10 times.

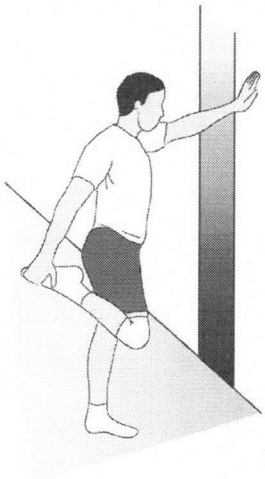


Partial squat, with chair

Quadriceps Stretch, Standing

Standing with your involved knee bent, gently pull heel toward buttocks, feeling a stretch in the front of the leg. Hold for 5 seconds.

Repeat 10 times.



Quadriceps stretch, standing

Advanced Exercise Program

Knee Bend, Partial, Single Leg

Stand supporting yourself with the back of a chair. Bend your uninvolved leg with your toe touching for balance as necessary. Slowly lower yourself, keeping your foot flat. Do not overdo this exercise. Straighten up to the starting position. Relax.

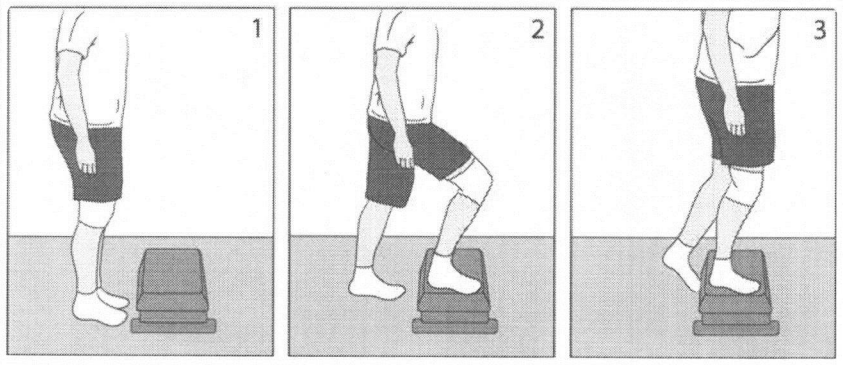
Repeat 10 times.

Knee bend, partial, single leg

Step-ups, Forward

Step forward up onto a 6-inch high footstool or platform, leading with your involved leg. Step down, returning to the starting position. Increase the height of the platform as strength increases.

Repeat 10 times.

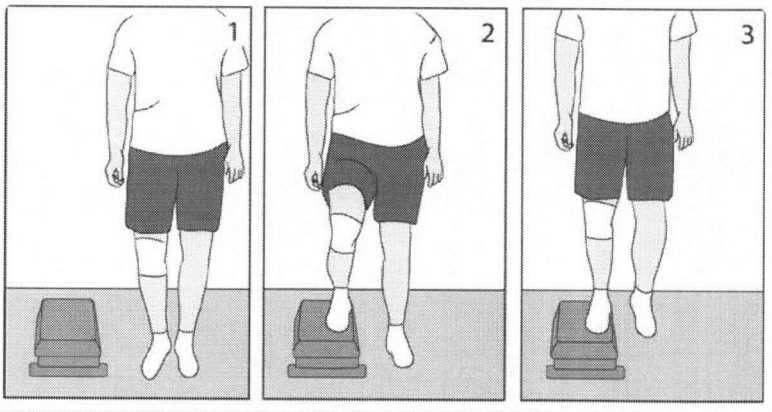


Step-ups, forward

Step-ups, Lateral

Step up onto a 6-inch high footstool or platform, leading with your involved leg. Step down, returning to the starting position. Increase the height of the platform as strength increases.

Repeat 10 times.

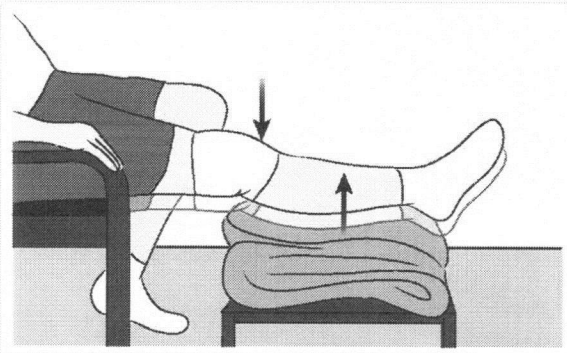


Step-ups, lateral

Terminal Knee Extension, Sitting

While sitting in a chair, support your involved heel on a stool. Now straighten your knee, hold for 5 seconds, then slowly return to the starting position.

Repeat 10 times.



Terminal knee extension, sitting

Hamstring Stretch, Supine

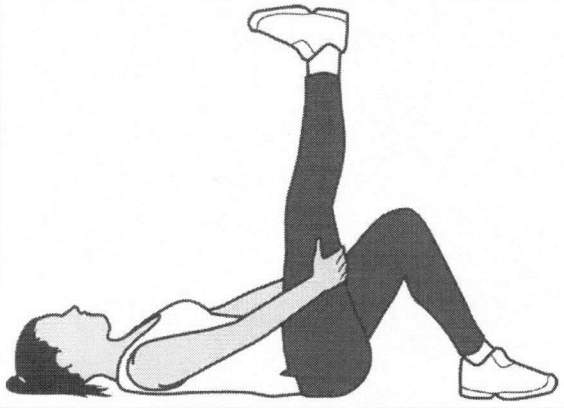
Lie on your back. Bend your hip, grasping your thigh just above the knee. Slowly straighten your knee until you feel the tightness behind your knee. Hold for 5 seconds, then relax.

Repeat 10 times.

Repeat with the other leg.

If you do not feel this stretch, bend your hip a little more, and repeat.

No bouncing! Maintain a steady, prolonged stretch for the maximum benefit.



Hamstring stretch, supine

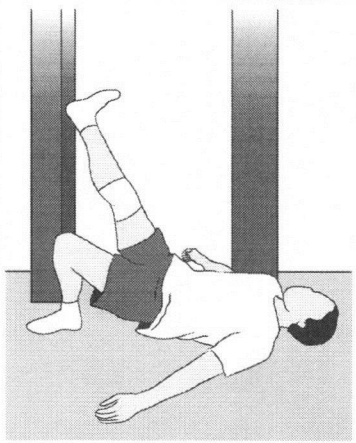
Hamstring Stretch, Supine at Wall

Lie next to a doorway with one leg extended. Place your heel against the wall. The closer you are to the wall, the more intense the stretch.

With your knee bent, move your hips toward the wall. Now begin to straighten your knee. When you feel the tightness behind your knee, hold for 5 seconds, then relax.

Repeat 10 times.

Repeat with the other leg.



Hamstring stretch, supine at wall

Exercise Bike

If you have access to an exercise bike, adjust the seat height so that the bottom of your foot just touches the pedal and complete a full revolution. As you become stronger, slowly increase the tension on the bike.

Start pedaling for 10 minutes a day. Increase the duration by one minute a day until you are pedaling for 20 minutes a day.

Walking

Walking is an excellent physical exercise activity for the middle stages of your recovery from surgery (after 2 weeks).

Running

Your doctor may recommend that you avoid running activities for a period of time after surgery in order to protect your knee. The length of the restriction will depend upon what type of procedure you had. For example, if you had an ACL reconstruction or meniscal repair, your running restriction will be different than if you had torn cartilage removed. Your doctor will talk with you about when it is safe to gradually resume your running activities.

Pain or Swelling after Exercise

As you increase the intensity of your exercise program, you may experience temporary setbacks. If your knee swells or hurts after a particular exercise activity, you should lessen or stop the activity until you feel better.

You should then Rest, Ice, Compress (with an elastic bandage), and Elevate your knee (R.I.C.E.). Contact your orthopaedic surgeon if your symptoms persist.