

# PATELLAR DISLOCATION AND SUBLUXATION, SURGERY FOR



## ■ ■ ■ Indications (Who Needs Surgery, When, Why, and Goals)

- If there are loose fragments of bone or cartilage in the knee, surgery to remove the fragments is necessary. Usually, surgery to prevent further dislocations is not performed at the first dislocation, even if surgery is being performed to remove loose fragments.
- If there are no loose fragments of bone or cartilage in the knee, surgery is usually reserved for people who have recurrent patellar dislocation, giving way or knee instability, or patellar pain despite 3 to 6 months of an adequate rehabilitation program.
- Uncommonly, surgery is recommended after the first dislocation, especially in athletes who regularly perform sports that require pivoting, cutting, and jumping.
- Surgery usually is not recommended until the injured knee has full range of motion and there is muscle control of the thigh (usually 3 or more weeks following injury), unless a loose fragment is in the knee.
- Surgery is performed to prevent further dislocations.
- The goal of the operation is to restore normal tracking of the patella; that is, to enable a return to sports that require cutting, pivoting, change of direction, and jumping and landing.
- Return to sports is usually 3 to 9 months after surgery (depending on the type of surgery and rehabilitation).

## ■ ■ ■ Contraindications (Reasons Not To Operate)

- Normal tracking of the patella
- Inability or unwillingness to complete the postoperative program or to perform the rehabilitation necessary
- Infection of the knee (current or previous; not an absolute contraindication)
- Skeletal immaturity (not fully grown yet; not an absolute contraindication)
- Severe knee or patellar arthritis

## ■ ■ ■ Risks and Complications of Surgery

- Infection, bleeding, or injury to nerves (numbness, weakness, paralysis) of the knee, leg, and foot (some numbness, temporary or permanent, on the outer part of the upper leg is not uncommon)
- Swelling or continued pain of the knee
- Rupture or stretching out of the repair, causing recurrent patellar dislocation
- Patella dislocation or subluxation inward
- Knee stiffness (loss of knee motion) or weakness
- Recurrent dislocation or subluxation of the patella
- Pain from the screw used to hold the bone
- Clot in the veins of the calf or thigh (deep venous thrombosis, phlebitis) that may break off in the bloodstream and go to the lungs (pulmonary embolus) or brain (causing a stroke)

- Reflex sympathetic dystrophy (severe pain)
- Nonhealing of bone
- Inability to remove all the loose bodies in the knee

## ■ ■ ■ Technique (What Is Done)

- Different techniques have been used to treat recurrent dislocation of the patella. Procedures are done at or above the patella involving soft tissue only, and there are procedures performed below the patella involving bone.
- Soft tissue procedures include operations to cut the tight structures (retinaculum) on the outer side of the patella (lateral release), with or without tightening the tissues of the inner knee (medial reefing or vastus medialis obliquus muscle [VMO] advancement). Other operations include rerouting tendon or ligament tissue to keep the patella from dislocating (usually for growing children). Surgeries below the patella include cutting the leg bone at the tibial tubercle and moving it inward, which helps the quadriceps mechanism pull in a straight line, reducing the angle and tendency for the patella to dislocate (tibial tubercle transfer).
- Lateral release may be performed with the assistance of the arthroscope and may be done on an outpatient basis (you go home the same day).
- Tibial tubercle transfer (osteotomy) may be preceded by arthroscopy and requires a 1- to 2-day stay in the hospital. When the bone is cut and moved, it is held with screws. After surgery, a brace or cast for 2 to 8 weeks is usually recommended. The screws used to hold the bone usually do not need to be removed unless they bother you.

## ■ ■ ■ Postoperative Course

- Keep the wound clean and dry for 10 to 14 days after surgery.
- Ice your knee for 20 minutes every 2 to 3 hours for the first 1 to 2 weeks after surgery.
- You will be given pain medications by your physician. Take only as directed.
- You may be given a knee brace or cast after surgery.
- Rehabilitation after patella-stabilizing surgery focuses on reducing knee swelling, regaining knee range of motion, and regaining strength in the leg and thigh muscles. Check with your surgeon or physical therapist for the exact exercises to perform. Often a graduated program is specified.

## ■ ■ ■ Return to Sports

Return to sports occurs when there is no pain and full range of motion, muscle strength, and endurance of the knee and functional use has been restored. If a tibial transfer has been performed, the bone must be completely healed. Return to sports usually requires 4 to 6 months following realignment surgery.

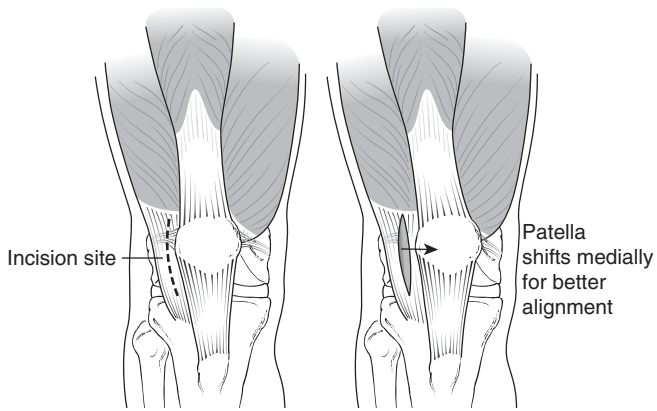


Figure 1

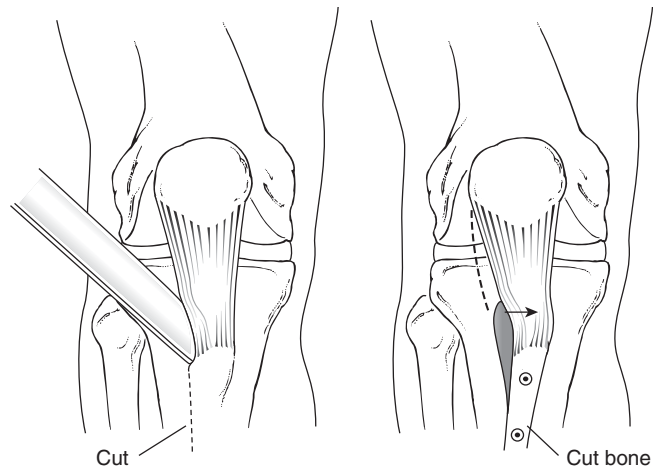


Figure 2

■ ■ ■ **Notify Our Office If**

- You experience pain, numbness, or coldness in the foot and ankle
- Blue, gray, or dusky color appears in the toenails
- You develop increased pain, swelling, redness, drainage, or bleeding in the surgical area
- Signs of infection develop (headache, muscle aches, dizziness, or a general ill feeling with fever)
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

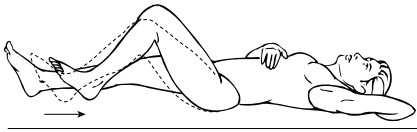
Do not eat or drink anything before surgery. Solid food makes general anesthesia more hazardous.

➤ **RANGE OF MOTION AND STRETCHING EXERCISES** • Patellar Dislocation and Subluxation, Surgery For—Phase I

After surgery for chronic, repeated patella dislocation or subluxation you will *usually* be placed in a knee immobilizer, cast, or brace so that the tissues can begin to heal. At some time during this phase your physician will allow you to begin to bend and straighten your knee. This is often accomplished by allowing you to be in a brace that has hinges to restrict your motion only to what your physician wants you to have. If this is the case, follow your physician's specific instructions.

Once you are allowed to start moving your knee, these are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again. Please remember:

- Flexible tissue is more tolerant of the stresses placed on it during activities.
- Each stretch should be held for 20 to 30 seconds.
- A *gentle* stretching sensation should be felt.



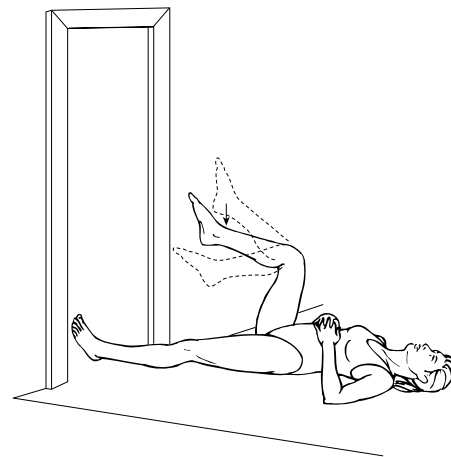
**RANGE OF MOTION** • Knee Flexion

1. Lie on your back with your legs out straight.
2. Slowly slide your heel toward your buttocks. Bend your knee as far as is comfortable to get a stretching sensation.
3. Hold for \_\_\_\_\_ seconds.
4. Return your leg to the starting position.
5. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



**RANGE OF MOTION** • Knee Flexion and Extension

1. Sit on the edge of a table or chair.
2. Use the uninjured/unaffected leg to straighten (extend) and bend (flex) the injured/affected leg.
3. **Flexion**—Cross your ankles, placing the uninjured or unaffected leg on top of the injured/affected leg. Pull your heel(s) backward under the surface you are sitting on to increase the amount you can bend your knee.
4. **Extension**—Cross your ankles, placing the uninjured or unaffected leg under the injured/affected leg. Pull your heel(s) backward under the surface you are sitting on to increase the how much you can straighten your knee.
5. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



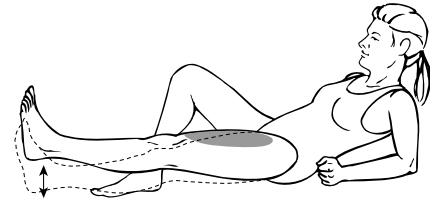
**RANGE OF MOTION** • Gravity Knee Flexion

1. Lie on the floor as shown with your toes/foot lightly touching the wall.
2. Allow your toes/foot to slide down the wall, allowing gravity to bend your knee for you.
3. Obtain a “comfortable” stretching sensation.
4. Hold this position for \_\_\_\_\_ seconds. Then return the leg to the starting position.
5. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.

**> STRENGTHENING EXERCISES • Patellar Dislocation and Subluxation, Surgery For—Phase I**

These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again. They can all be done while in the brace you received after surgery. Please remember:

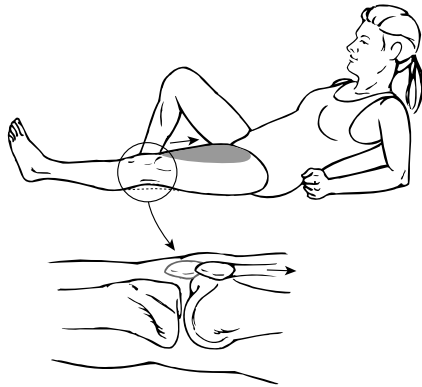
- Strong muscles with good endurance tolerate stress better.
- Do the exercises as *initially* prescribed by your physician, physical therapist, or athletic trainer. Progress slowly with each exercise, gradually increasing the number of repetitions and weight used under their guidance.



**STRENGTH • Quadriceps, 7 Count**

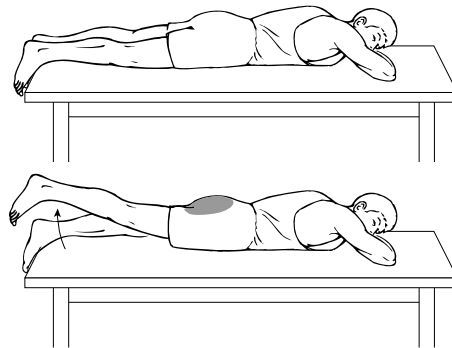
**The quality of the muscle contraction in this exercise is what counts the most, not just the ability to lift your leg!**

1. Tighten the muscle in front of your thigh as much as you can, pushing the back of your knee flat against the floor.
2. Tighten this muscle harder.
3. Lift your leg/heel 4 to 6 inches off the floor.
4. Tighten this muscle harder again.
5. Lower your leg/heel back to the floor. Keep the muscle in front of your thigh as tight as possible.
6. Tighten this muscle harder again.
7. Relax.
8. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



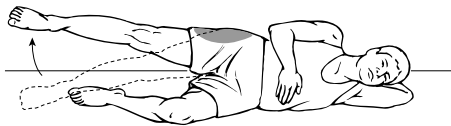
**STRENGTH • Quadriceps, Isometrics**

1. Lie flat or sit with your leg straight.
2. Tighten the muscle in the front of your thigh as much as you can, pushing the back of your knee flat against the floor. This will pull your kneecap up your thigh, toward your hip.
3. Hold the muscle tight for \_\_\_\_\_ seconds.
4. Repeat this exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



**STRENGTH • Hip Extension**

1. Lie on your stomach with your legs straight out behind you.
2. Raise your leg up behind you from your hip. Keep your knee straight. Hold this position for \_\_\_\_\_ seconds.
3. Slowly lower your leg to the starting position.
4. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



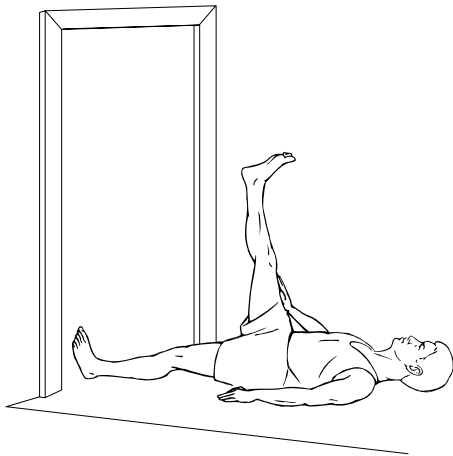
**STRENGTH • Hip Abduction**

1. Lie on your side as shown with the injured/weak leg on top.
2. Bend the bottom knee slightly for balance. Roll your top hip slightly forward.
3. Lift your top leg straight up, leading with your heel. Do not let it come forward. Hold this position for \_\_\_\_\_ seconds.
4. Slowly lower your leg to the starting position.
5. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.

➤ **RANGE OF MOTION AND STRETCHING EXERCISES** • Patellar Dislocation and Subluxation, Surgery For—Phase II

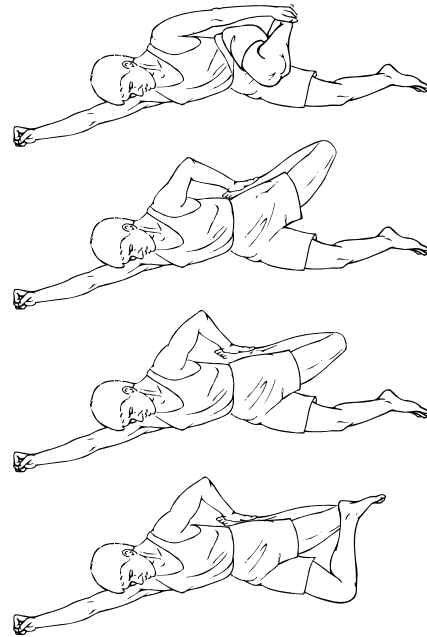
Phase II begins when you are allowed to discontinue use of your brace. At this time you are ready to start bending your knee farther and to start stretching your muscles again. These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again. Progress as your motion and symptoms allow. If you feel too much “pulling” and that your knee cap is coming “out of place,” stop them immediately and consult your physician, physical therapist, or athletic trainer. Please remember:

- Flexible tissue is more tolerant of the stresses placed on it during activities.
- Each stretch should be held for 20 to 30 seconds.
- A *gentle* stretching sensation should be felt.



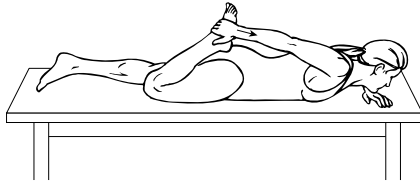
**FLEXIBILITY** • Hamstrings, Doorway

1. Lie on your back near the edge of a doorway as shown.
2. Place the leg your are stretching up the wall keeping your knee straight.
3. Your buttock should be as close to the wall as possible and the other leg should be kept flat on the floor.
4. You should feel a stretch in the back of your thigh.
5. Hold this position for \_\_\_\_\_ seconds.
6. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



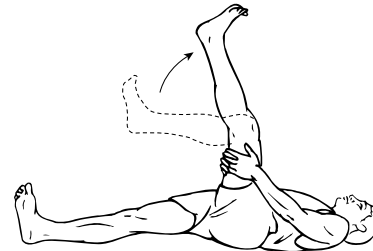
**ILIOTIBIAL BAND STRETCH**

1. Lie on your side as shown. The muscle/iliotibial band to be stretched should be on top.
2. With your hand, grasp your ankle and pull your heel to your buttocks and bend your hip so that your knee is pointing forward as in the top drawing.
3. Rotate your hip up so that your thigh is away from your body as shown and in line with your body. Keep your heel to your buttocks.
4. Bring the thigh back down and behind your body. Do not bend at the waist. Keep your heel pressed to your buttocks.
5. Place the heel of your opposite foot on top of your knee and pull the knee/thigh down farther. You should feel a stretch on the outside of your thigh near your kneecap.
6. Hold this position for \_\_\_\_\_ seconds.
7. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



**STRETCH • Quadriceps, Prone**

1. Lie on your stomach as shown.
2. Bend your knee, grasping your toes, foot, or ankle. If you are too “tight” to do this, loop a belt or towel around your ankle and grasp that.
3. Pull your heel toward your buttock until you feel a stretching sensation in the front of your thigh.
4. Keep your knees together.
5. Hold this position for \_\_\_\_\_ seconds.
6. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



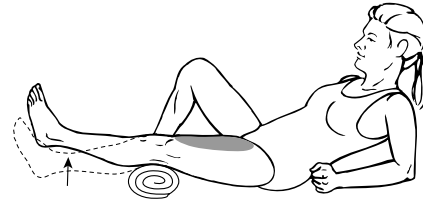
**FLEXIBILITY • Hamstrings**

1. Lie on your back with your leg bent and both hands holding on to it behind the thigh as shown.
2. Your hip should be bent to 90 degrees and the thigh pointing straight at the ceiling.
3. Straighten out your knee as far as you can. Keep your thigh pointing straight toward the ceiling.
4. Keep the other leg flat on the floor.
5. Hold this position for \_\_\_\_\_ seconds.
6. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.

➤ **STRENGTHENING EXERCISES • Patellar Dislocation and Subluxation, Surgery For—Phase II**

These are some of the exercises you may *progress to* in your rehabilitation program. These exercises are usually done during the second phase of your rehabilitation program. *Do not progress to these until you have been authorized to by your physician, physical therapist, or athletic trainer.* You may continue with all exercises started in Phase I also. Please remember:

- Strong muscles with good endurance tolerate stress better.
- Do the exercises as *initially* prescribed by your physician, physical therapist, or athletic trainer. Progress slowly with each exercise, gradually increasing the number of repetitions and weight used under their guidance.

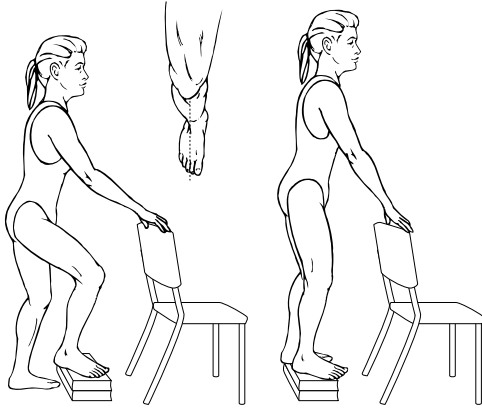


**STRENGTH • Quadriceps, Short Arcs**

1. Lie flat or sit with your leg straight.
2. Place a \_\_\_\_\_ inch roll under your knee, allowing it to bend.
3. Tighten the muscle in the front of your knee as much as you can, and lift your heel off the floor.
4. Hold this position for \_\_\_\_\_ seconds.
5. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.

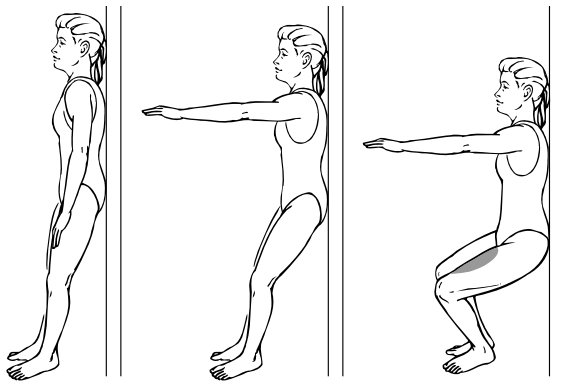
**Additional Weights: OK TO USE      DO NOT USE!!!**

*If okay'd by your physician, physical therapist, or athletic trainer, a \_\_\_\_\_ pound weight may be placed around your ankle for additional weight.*



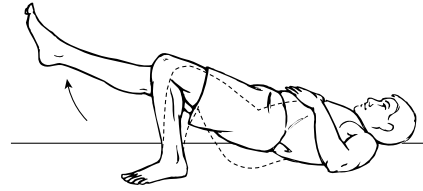
### STRENGTH • Quadriceps, Step-Ups

1. Use a step or books.
2. Place your foot on the step or books approximately \_\_\_\_\_ inches in height. Make sure that your kneecap is in line with the tip of your shoe or your second toe.
3. Hold on to a hand rail, chair, wall, or another object for balance if needed.
4. Slowly step up and down. Make sure that the kneecap is always in line with the tip of your shoe or your second toe. Lightly touch the heel of the opposite leg to the floor and return to the starting position.
5. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



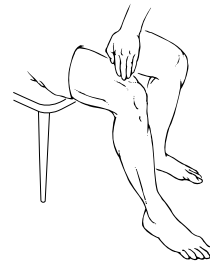
### STRENGTH • Quadriceps, Wall Slide

1. Stand with your back against the wall. Your feet should be shoulder-width apart and approximately 18 to 24 inches away from the wall. Your kneecaps should be in line with the tip of your shoes or your second toe.
2. Slowly slide down the wall so that there is a \_\_\_\_\_ degree bend in your knees. (*Your physician, physical therapist, or athletic trainer will instruct you how to progress the amount of bend based on your symptoms and diagnosis.*)
3. Hold this position for \_\_\_\_\_ seconds. Stand up and rest for \_\_\_\_\_ seconds.
4. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



### STRENGTH • Hip Extension

1. Lie on your back with your knees bent and feet flat on the floor.
2. Push down, raising your hips/buttocks off the floor.
3. Keep your pelvis level. Do not allow it to turn/rotate.
4. You may do this exercise with both legs together (which is easier) or with just one leg as shown (which is harder). Hold this position for \_\_\_\_\_ seconds.
5. Slowly lower to the starting position.
6. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



### STRENGTH • Isometric Quad/VMO

1. Sit in a chair with your knee bent 75 to 90 degrees as shown in the drawing.
2. With your fingertips, feel the muscle just above the kneecap on the inside half of your thigh. This is the VMO.
3. Push your foot and leg into the floor to cause the thigh muscles to tighten.
4. Concentrate on feeling the VMO tighten. This muscle is important because it helps control the position of your kneecap.
5. Tighten and hold for \_\_\_\_\_ seconds.
6. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.

Notes:

(Up to 4400 characters only)

Notes and suggestions