

# MENISCUS TEAR



## ■ ■ ■ Description

The meniscus is a C-shaped cartilage structure in the knee that sits on top of the leg bone (tibia). Each knee has two menisci, an inner and outer meniscus. The meniscus functions like an adapter between the rounded thigh bone (femur) and flat tibia. It also serves to help distribute the forces between the two bones over a greater area (rather than point to point), helps supply nutrition to the cartilage that lines the bones (articular cartilage), and helps stabilize the knee. The meniscus is rubbery tissue that loses its elasticity (rubberyness) with age. Nonetheless, each individual meniscus can be torn. Meniscus tears are very common, occurring in up to one third of all sports injuries. The inner meniscus is injured most often.

## ■ ■ ■ Common Signs and Symptoms

- Pain, especially with standing on the affected leg and squatting, and tenderness along the joint of the knee
- Swelling of the affected knee, usually starting 1 to 2 days after the injury (may occur right after the injury)
- Locking or catching of the knee joint, causing an inability to straighten the knee completely
- Giving way or buckling of the knee

## ■ ■ ■ Causes

- Direct blow to the knee, twisting, pivoting, or cutting (rapidly changing direction while running), as well as kneeling or squatting
- Without injury, due to aging

## ■ ■ ■ Risk Increases With

- Contact sports (football), sports in which cleats are used with pivoting (soccer) or sports in which good shoe grip and sudden change in direction are required (racquetball, basketball, squash)
- Previous knee injury
- Associated knee injury, particularly ligament injuries
- Poor physical conditioning (strength and flexibility)

## ■ ■ ■ Preventive Measures

- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
  - Thigh, knee, and leg strength
  - Flexibility and endurance
- For jumping sports (basketball, volleyball) or contact sports, protect vulnerable joints with supportive devices, such as wrapped elastic bandages, tape, or braces (these have not been proven effective).
- Wear proper protective equipment and ensure correct fit, including proper cleats for the surface.

## ■ ■ ■ Expected Outcome

Some meniscal injuries can heal on their own, and some do not heal but may not cause any symptoms. However, the only definitive treatment for meniscal tears requires surgery. Surgery may provide complete healing in 6 weeks.

## ■ ■ ■ Possible Complications

- Frequent recurrence of symptoms, resulting in a chronic problem; appropriately addressing the problem decreases frequency of recurrence
- Repeated knee injury, particularly if sports are resumed too soon after injury or surgery
- Progression of the tear (the tear gets larger) if untreated
- Arthritis of the knee in later years (with removal of tear or without surgery)
- Complications of surgery, including infection, bleeding, injury to nerves (numbness, weakness, paralysis) continued pain, giving way, locking, nonhealing of meniscus (if repaired), need for further surgery, and knee stiffness (loss of motion)

## ■ ■ ■ General Treatment Considerations

Initial treatment consists of medications and ice to relieve pain and reduce the swelling of the affected joint. Sometimes walking with crutches until you walk without a limp is recommended (you may put full weight on the injured leg). Range-of-motion, stretching, and strengthening exercises may be carried out at home, although referral to a physical therapist or athletic trainer may be recommended. Occasionally your physician may recommend a brace or immobilizer or crutches to protect the joint. Surgery is often recommended as definitive treatment and is performed arthroscopically. Usually the tear is removed partly or completely, although in some instances it is possible to repair the cartilage (less than 20% of the time). After surgery or immobilization, stretching and strengthening of the injured, stiff, and weakened joint and surrounding muscles are necessary. These may be done with or without the assistance of a physical therapist or athletic trainer.

## ■ ■ ■ Medication

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within 7 days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Pain relievers may be prescribed as necessary by your physician. Use only as directed and only as much as you need.

**Heat and Cold**

- Cold is used to relieve pain and reduce inflammation. Cold should be applied for 10 to 15 minutes every 2 to 3 hours for inflammation and pain and immediately after any activity which aggravates your symptoms. Use ice packs or an ice massage.
- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak.

**Notify Our Office If**

- Symptoms get worse or do not improve in 2 weeks despite treatment
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

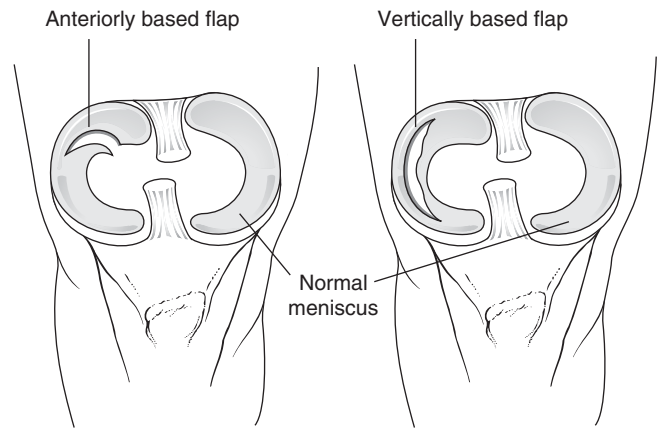
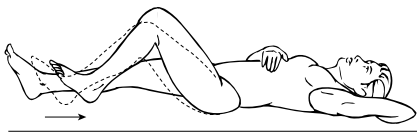


Figure 1

➤ **RANGE OF MOTION AND STRETCHING EXERCISES** • Meniscus Tear, Nonoperative—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 or until your symptoms are resolved. 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.



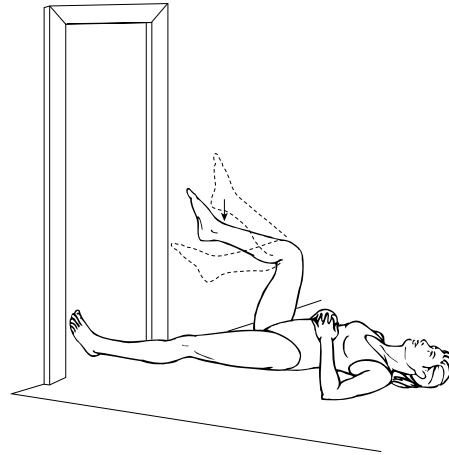
**RANGE OF MOTION** • Knee Flexion

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.



**RANGE OF MOTION** • Knee Extension Sitting

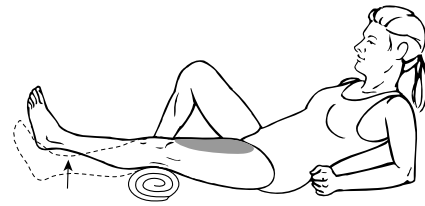
1. Sit with your leg/heel propped on another chair as shown. You may also prop your foot up on a rolled-up towel, a table, or a foot stool.
2. Relax, letting gravity straighten out your knee.
3. Hold this position for \_\_\_\_\_ seconds.
4. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.

**Note:** If authorized by your physician, physical therapist, or athletic trainer, you may place a \_\_\_\_\_ pound weight on your thigh just above your kneecap to obtain a more effective stretch.

**> STRENGTHENING EXERCISES • Meniscus Tear, Nonoperative—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 or until your symptoms are resolved. 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.

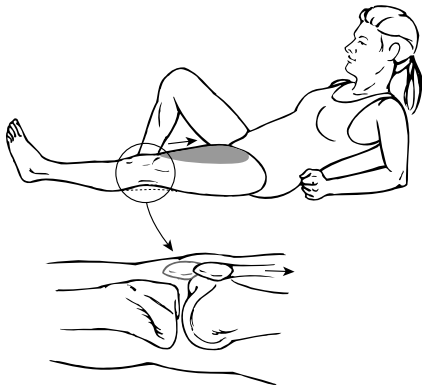


**STRENGTH • Quadriceps, Short Arcs**

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.

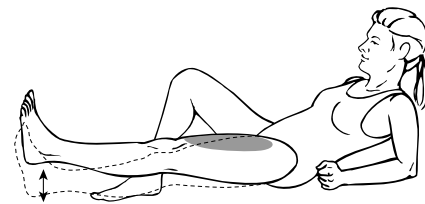
**Additional Weights: OK TO USE      DO NOT USE!!!**

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**STRENGTH • Quadriceps, Isometrics**

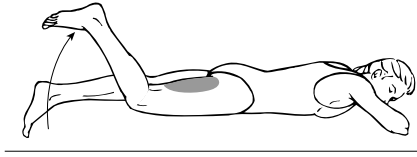
1. Lie flat or sit with your leg straight.
2. Tighten the muscle in the front of your thigh as much as you can, pushing the back of your knee flat against the floor. This will pull your kneecap up your thigh, toward your hip.
3. Hold the muscle tight for \_\_\_\_ seconds.
4. Repeat this exercise \_\_\_\_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



**STRENGTH • 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.

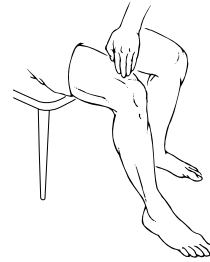


### STRENGTH • Hamstring, Curls

1. Lie on your stomach with your legs out straight.
2. Bend knee to 90 degrees. Hold this position for \_\_\_\_\_ seconds.
3. Slowly lower your leg back to the starting position.
4. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.

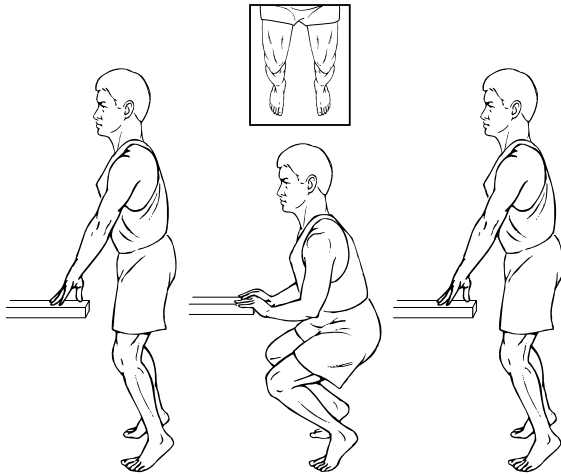
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### STRENGTH • Isometric Quad/VMO

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.



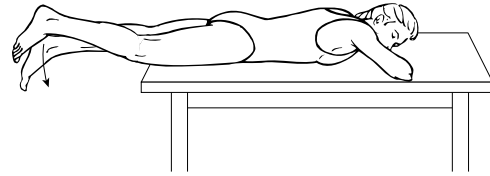
### STRENGTH • Quads

1. Stand with your feet shoulder-width apart and place equal weight on both legs.
2. Keep your kneecaps in line with your toes.
3. Slowly bend both knees, keeping *equal weight* on both legs, and return to a standing position.
4. **Do not bend your knees more than 90 degrees.**
5. You may use the edge of a table or counter for balance if needed.
6. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.

**> RANGE OF MOTION AND STRETCHING EXERCISES • Meniscus Tear, Nonoperative—Phase II**

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

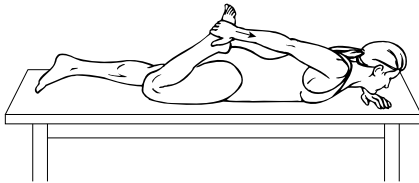
- Flexible tissue is more tolerant of the stresses placed on it during activities.
- Each stretch should be held for 20 to 30 seconds.
- A *gentle* stretching sensation should be felt.



**RANGE OF MOTION • Knee Extension, Prone**

1. Lie on your stomach on a bed or sturdy table with your knee and leg off the table. The kneecap should be off the edge of the bed or table.
2. Allow gravity to straighten your knee for you.
3. Hold this position for \_\_\_\_\_ seconds.
4. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.

**Note:** *If authorized by your physician, physical therapist, or athletic trainer, you may place a \_\_\_\_\_ pound weight on your ankle to obtain a more effective stretch.*



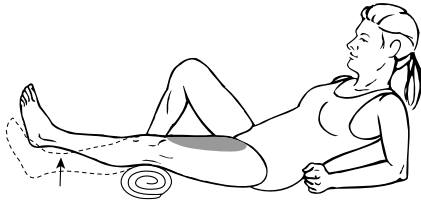
**STRETCH • Quadriceps, Prone**

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.

> **STRENGTHENING EXERCISES • Meniscus Tear—Phase II**

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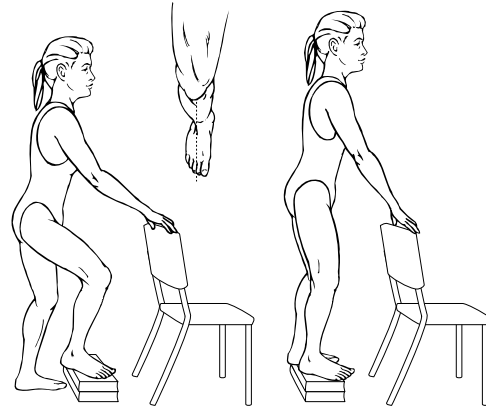


**STRENGTH • Quadriceps, Short Arcs**

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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.
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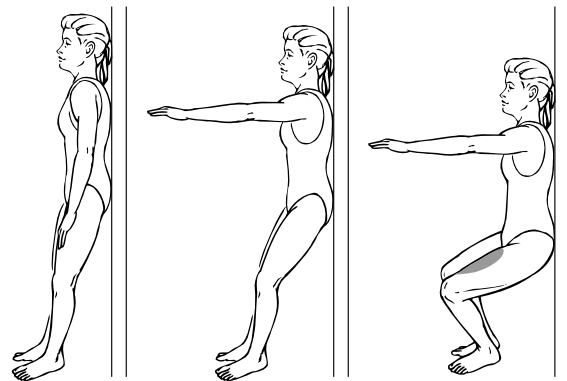
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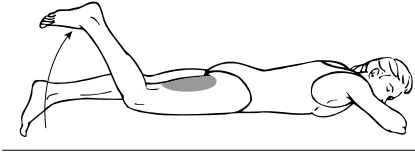
**STRENGTH • Quadriceps, Step-Ups**

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.

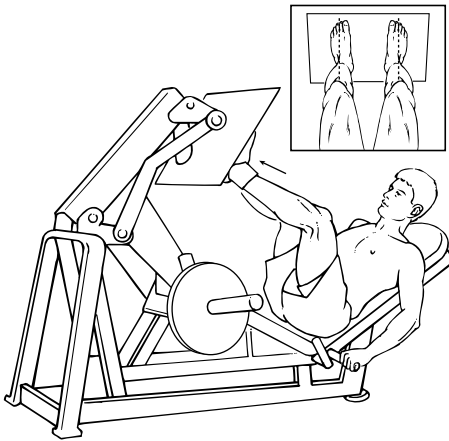
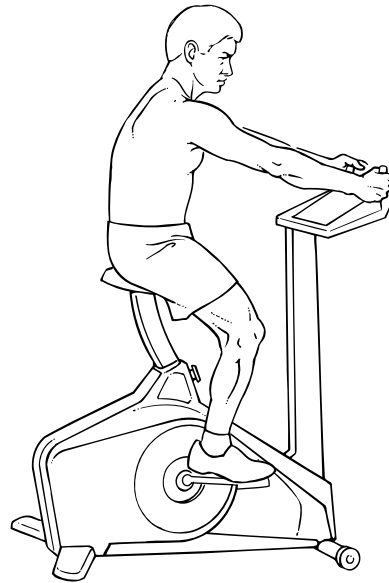


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Notes:

(Up to 4400 characters only)

Notes and suggestions