

# MAYO CLINIC HEALTH LETTER

Reliable Information for a Healthier Life

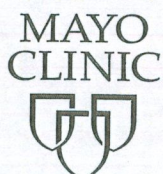
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## Meniscus tears

### Avoiding knee pain

You probably know what it's like to open products with safety lids — press down, twist and turn. While that may work for opening lids, those same types of motions made in relationship to your knee joint can cause trouble.

Maneuvers that forcefully compress and twist or rotate the knee can potentially lead to a torn meniscus, which is cartilage in the knee joint. This cartilage acts like a cushion between the shinbone (tibia) and thighbone (femur).

Meniscal tears are among the most common knee injuries. How torn knee cartilage is treated varies considerably. For older adults, treatment decisions can be more complex if osteoarthritis also is present in the affected knee.

### Inside matter

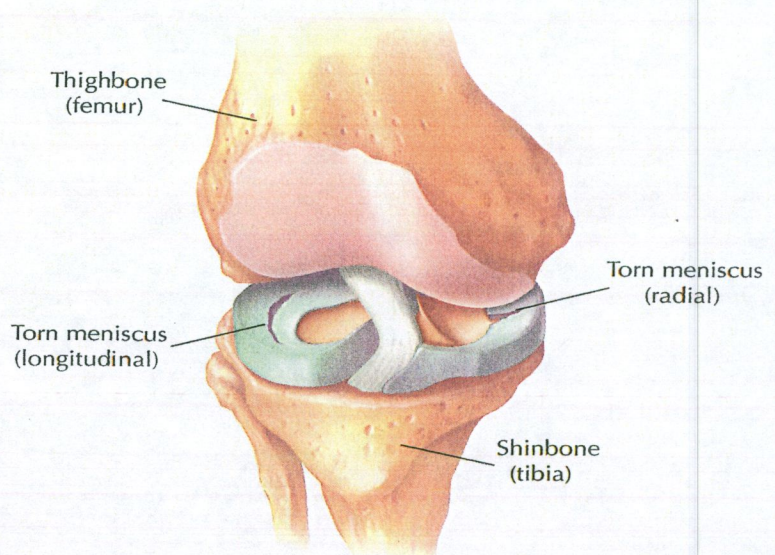
Within the normal knee joint are two C-shaped menisci. The job of each meniscus is to:

- Help absorb and distribute weight and force that's placed on the knee
- Provide stability to the knee when pivoting
- Lubricate the knee joint

In addition, the menisci help protect other cartilage tissue that covers the ends of the joint's tibia and femur bones.

Damage to the menisci may be sudden and severe, as can happen to athletes in competitive contact sports, such as football. The classic dodge maneuver — where you abruptly stop running and change directions — is a common way menisci can tear. Other common moves, such as kneeling and squatting, also can cause damage.

On the flip side, tears may go unnoticed, developing over time from



Meniscal tears are among the most common knee injuries.

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regular joint wear that occurs naturally. Among older adults, wearing down of the meniscus is part of degenerative arthritis that may affect the rest of the aging knee. These changes in the meniscus are best called wear and tear, since they often don't result from an injury and may have no symptoms.

Pain from an actual meniscus injury can vary. The signs and symptoms of a meniscal tear may include:

- A popping sensation when moving the knee
- Swelling or stiffness
- Pain, especially when twisting or rotating your knee
- Possible difficulty straightening your knee fully

### Sorting it out

If you have knee pain or swelling of the joint — whether unexplained or due to injury — or you find you can't move your knee normally, contact your doctor. Along with a clinical history, you'll be asked about any signs or symptoms related to your knee. As part of the physical examination, your doctor may manipulate your knee into different positions in order to put stress on the internal structures, such as the meniscus.

A torn meniscus that causes pain can often be identified during a physical exam. However, if you also have degenerative changes in the joint related to osteoarthritis, determining what might be the actual cause of the knee pain or malfunction can be more challenging. Both the meniscus and arthritis can cause pain.

Imaging studies may include X-rays done in special standing positions, which can show some changes that might be related to osteoarthritis. If there are no major findings on X-rays suggesting significant arthritis and the physical examination indicates you may have a meniscus tear, magnetic resonance imaging (MRI) will likely be done to get a clearer picture of the meniscus and the rest of the knee joint.

But MRI scans are best done only when there are significant symptoms.

In the absence of symptoms, MRI scans could lead to costly and ineffective treatment. MRI images are so sensitive that they can pick up abnormalities in the knees that are causing no noticeable pain. One study of 991 adults between the ages of 50 and 90 with no knee pain found that half of them had meniscal wear-and-tear changes that could be seen on an MRI scan. This means that not all abnormal-looking menisci on MRI scan cause pain.

### Treatment options

Whenever possible, nonoperative conservative measures are generally considered the first line of treatment when there are symptoms of meniscal problems. This approach involves resting your knee by avoiding activities that put pressure on the joint or twist it and cause pain, such as squatting, kneeling and repetitive bending of your knee.

Along with rest, ice can help reduce pain and swelling. Keep your leg elevated while icing the knee for about 15 minutes every four to six hours for a day or two. A nonprescription pain reliever also may help ease knee pain.

Once pain is diminished, the next step is typically physical therapy to strengthen the muscles around your knee and in your legs. Research has shown that improving muscle support around the knee helps to reduce the pain of knee wear-and-tear problems. Physical therapy is supplemented by home exercises, as well. In addition, an injection of cortisone into the knee may help relieve inflammation and pain. This can make the therapy and exercise treatment more effective. If after several months of conservative treatment your knee remains painful, your doctor may recommend surgery.

Arthroscopic knee surgery for a meniscal tear that's causing symptoms is a common orthopedic procedure that's done through tiny incisions around your knee. The arthroscope contains a small camera and light that allow your surgeon to clearly view the inside of your knee on a monitor. Small

surgical tools can be inserted through the arthroscope or through additional tiny incisions to remove portions of or repair meniscal cartilage. You can usually go home the same day, although full recovery may take weeks or months. As part of your recovery, you'll be taught exercises designed to help restore motion and strengthen the muscles of your knee and leg.

However, if osteoarthritis also is present in the affected knee and the meniscal problem is due to wear and tear, surgical treatment may not provide the kind of pain relief or return to better joint function normally expected with arthroscopic surgery. Several studies involving people with meniscal tears and advanced osteoarthritis have demonstrated that arthroscopy — including the prescribed post-surgical physical therapy — offers no advantage over

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nonoperative treatment including physical therapy for relief of symptoms.

Even so, considerable research gaps still exist in this area, in particular for those who have meniscal tears and less advanced osteoarthritis.

### Filling the gap

At present, a large, multicenter study is under way to compare the effectiveness of arthroscopic surgery to nonoperative treatment — physical therapy and joint injections — in people who have both mild to moderate osteoarthritis and meniscal tears. The Meniscal Tear With Osteoarthritis

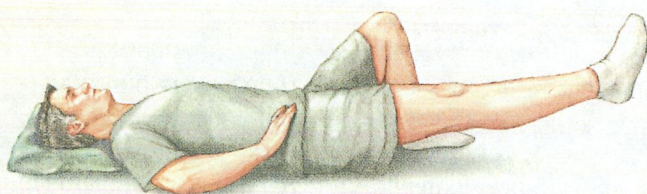
Research (MeTeOR) study involves seven medical centers, including Mayo Clinic. Recruitment for this large-scale clinical trial ended in August 2011, and people were randomly assigned to either the surgical treatment group or the physical therapy group. Each participant will be followed for five years with physical exams, radiology images, questionnaires and phone surveys.

Orthopedic surgeons involved with MeTeOR hope the study outcomes can help clarify treatment choices, especially among older adults who often have knee osteoarthritis along with a meniscal tear. □

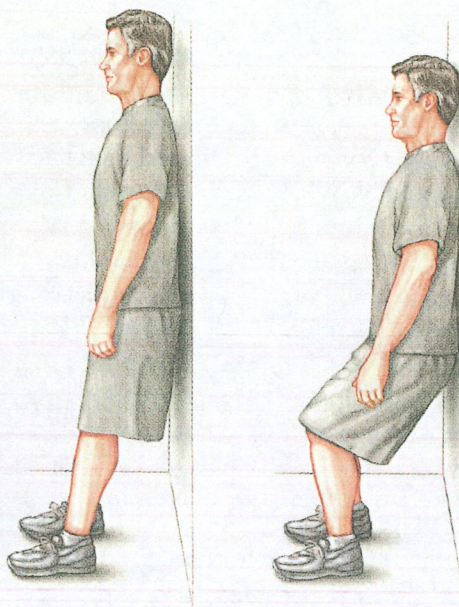
## Give knees a leg up

Take a few minutes each day to help give your knees the support they need. These simple exercises are designed to strengthen the large muscles in your upper leg that play a key role in stabilizing and supporting your knees. Before doing these, warm up for five minutes or so with a low-impact activity, such as walking:

■ **Straight-leg lift** — Lie on your back as shown. Relax your upper body while tightening your stomach muscles so that your low back is flat against the floor. Tighten the thigh muscles in your straight leg and slowly lift it with a smooth motion until it's about a foot off the floor. Hold it for three to five seconds — remember not to arch your back. Then slowly lower your leg to the floor. Repeat and switch sides.



■ **Wall squat** — Stand as shown with your head, back and hips against the wall. Step your feet out about two feet from the wall keeping your feet about hip-width apart. Tighten your stomach muscles and slowly slide down the wall until you are in a high sitting position — don't let your knees move forward over your toes. Hold for five to 10 seconds, then slowly slide up. Repeat. As you get stronger, you may hold the position longer.



## Health tips

### Vision for the future

Some age-related vision changes are inevitable, but there are steps you can take to care for your future eye health, including:

■ **Wearing sunglasses** — Make a habit of wearing sunglasses that block 99 to 100 percent of ultraviolet A and B radiation.

■ **Wearing protective eyewear** — When working with power tools or using chemicals such as household cleaners and garden chemicals, wear protective safety glasses or goggles.

■ **Eating for eye health** — Eat plenty of green leafy vegetables and chose fatty fish, such as salmon. These foods are rich in the carotenoids lutein and zeaxanthin. Certain antioxidants and omega-3 fatty acids have been shown to lower risk of cataracts and macular degeneration.

■ **Scheduling regular eye exams** — Chronic eye disorders, such as macular degeneration, glaucoma and diabetic retinopathy, can cause serious eye damage before you're aware of them. Regular, comprehensive eye exams — which include dilating the eye to get a good look at the back of the eye — can detect eye problems at their earliest stage. Generally, if you're older than 65, exams are suggested every one to two years. However, your eye care provider may recommend more-frequent exams based on your family history and your personal health — such as if you have diabetes.

■ **Stopping smoking** — If you smoke, stop. Smoking is linked to increased risk of age-related macular degeneration, cataracts and optic nerve damage. □