Osteoarthritis

What is osteoarthritis?

Osteoarthritis, also called degenerative arthritis, is a disease that causes the breakdown of the cartilage in joints. Normally, cartilage acts as a smooth, cushioning material inside joints. In osteoarthritis, the cartilage becomes rough and flaky, and small pieces break off. The bone surface of the joint also becomes rough and irregular. As a result, movement of the joint becomes painful and difficult.

Osteoarthritis occurs most often in weight-bearing joints such as the neck, lower back, knees, and hips. It also often affects the fingers.

Osteoarthritis is three times more common in women than in men. It begins to appear in middle age. By age 60, most people have some osteoarthritis, although it may be too mild to cause symptoms.

How does it occur?

Osteoarthritis is caused by excessive wear on joints. Obesity, bad posture, old injuries, and overuse can all cause extra wear on joints. Heredity also appears to play a role.

What are the symptoms?

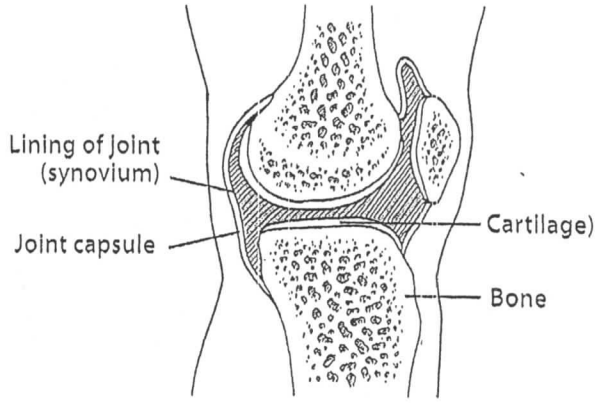
The symptoms of osteoarthritis include:

- mild to severe pain in a joint, especially after overuse or long periods of inactivity, such as sitting for a long time
- creaking or grating sound in the joint
- swelling, stiffness, limited movement of the joint, especially in the mornings
- weakness in muscles around the sore joint from lack of use
- deformity of the joint.

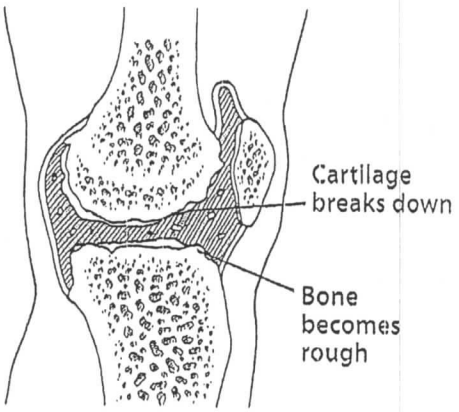
How is it diagnosed?

Your health care provider will review your medical history and examine you. Your health care provider may also order blood tests and x-rays. A sample of fluid in the joint may be taken with a needle to confirm the diagnosis.

Arthritis



Normal Joint (side view of knee)



Joint with Osteoarthritis

How is it treated?

The aim of treatment is to keep the joint working by reducing strain on the joint and by relieving pain, stiffness, and swelling.

Generally, acetaminophen is the best medicine for pain relief in osteoarthritis. Older adults should not take nonsteroidal anti-inflammatory drugs such as ibuprofen (Motrin, Advil, Nuprin). If acetaminophen does not work, see your health care provider for more guidance and evaluation.

Rubbing anti-inflammatory or deep-heat creams over the arthritic joint can sometimes be helpful. Putting an ice pack on your the joint once or twice a day can also help relieve pain. Your health care provider may inject steroids into the painful joint.

If you are overweight, your health care provider may recommend that you lose weight by eating fewer calories, by increasing your physical activity, or both.

Physical and occupational therapy can help you have normal movement again. Regular gentle exercise is very important for controlling osteoarthritis.

Sometimes severely damaged hips and knees are surgically replaced.

How long will the effects last?

Unfortunately, osteoarthritis is a lifetime disease that can worsen over time. Avoiding repeated injury to your joints can help, but damaged cartilage cannot repair itself.

How can I take care of myself?

Although no one yet knows how to prevent osteoarthritis, you can help prevent symptoms by following these guidelines:

- Keep your joints in good working order. Stay fit. Do any exercises recommended by your health care provider or physical therapist for posture, muscle strength, and joint mobility. Daily moderate exercise is much better for your joints than occasional strenuous exercise. Walk a little each day if you can. Be sure to wear comfortable, well-cushioned walking shoes. Otherwise, you can exercise while sitting down or go swimming. The water in a warm swimming pool can help support your weight while you exercise, and the warmth helps improve joint movement.
- Protect your joints by doing warm-up exercises before strenuous activity.
- Use a knee pad to protect your knees when you are kneeling.
- Take the medicine your health care provider recommends for controlling your osteoarthritis.
- Keep your body healthy by eating a healthy, varied, low-fat diet.
- Follow your health care provider's recommendations for weight control.

soft tissue in or around your tendon causing pain you may need surgery to remove it.

You will be given rehabilitation exercises to help you return to your sport or activity. While you are recovering from your injury you will need to change your sport or activity to one that does not make your condition worse. For example, you may need to swim instead of play basketball.

When can I return to my sport or activity?

The goal of rehabilitation is to return you to your sport or activity as soon as is safely possible. If you start too soon you may worsen your injury, which could lead to permanent damage. Everyone recovers from injury at a different rate. Return to your sport or activity will be determined by how soon your knee recovers, not by how many days or weeks it has been since your injury occurred. In general, the longer you have symptoms before you start treatment, the longer it will take to get better.

You may safely return to your sport or activity when, starting from the top of the list and progressing to the end, each of the following is true:

- Your injured knee can be fully straightened and bent without pain.
- Your knee and leg have regained normal strength compared to the uninjured knee and leg.
- Your knee is not swollen.
- You are able to jog straight ahead without limping.
- You are able to sprint straight ahead without limping.
- You are able to do 45-degree cuts.
- You are able to do 90-degree cuts.
- You are able to do 20-yard figure-of-eight runs.
- You are able to do 10-yard figure-of-eight runs.
- You are able to jump on both legs without pain and jump on the injured leg without pain.

How can I prevent patellar tendonitis?

Patellar tendonitis is usually caused by overuse during activities such as jumping or running or biking uphill. It can best be prevented by having strong thigh muscles.

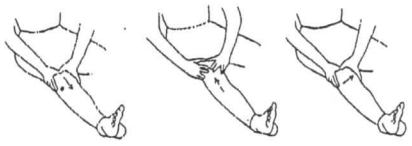
The following may also help prevent injury:

- When you exercise, wear shoes that fit properly and are right for the activity.
- Gently stretch before and after exercising.

How can I treat patellar tendonitis?

You can start doing the patellar mobility exercise as soon as it is not too painful to move your kneecap. You can do the hamstring stretch right away. When the pain in your knee has decreased, you can do the quadriceps stretch and start strengthening the thigh muscles using the rest of the exercises.

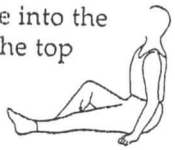
1. PATELLAR MOBILITY: Sit with your injured leg outstretched in front of you and the muscles on the top of your thigh relaxed. Take your index finger and thumb and gently press your kneecap down toward your foot. Hold this position for 10 seconds. Return to the starting position. Next, pull your kneecap up toward your waist and hold it for 10 seconds. Return to the starting position. Then, try to gently push your kneecap inward toward your other leg and hold for 10 seconds. Repeat these for approximately 5 minutes.



2. STANDING HAMSTRING STRETCH: Place the heel of your leg on a stool about 15 inches high. Keep your knee straight. Lean forward, bending at the hips until you feel a mild stretch in the back of your thigh. Make sure you do not roll your shoulders and bend at the waist when doing this or you will stretch your lower back instead. Hold the stretch for 15 to 30 seconds. Repeat 3 times.

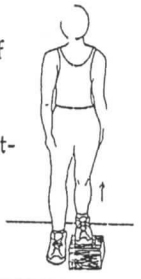
3. QUADRICEPS STRETCH: Stand an arm's length away from the wall, facing straight ahead. Brace yourself by keeping the hand on the uninjured side against the wall. With your other hand, grasp the ankle of the injured leg and pull your heel toward your buttocks. Don't arch or twist your back and keep your knees together. Hold this stretch for 15 to 30 seconds. Repeat 3 times.

4. QUADRICEPS ISOMETRICS: Sitting on the floor with your injured leg straight and your other leg bent, press the back of your knee into the floor by tightening the muscles on the top of your thigh. Hold this position 10 seconds. Relax. Do 3 sets of 10.



5. STRAIGHT LEG RAISE: Lie on your back with your legs straight out in front of you. Tighten up the top of your thigh muscle on the injured leg and lift that leg about 8 inches off the floor, keeping the thigh muscle tight throughout. Slowly lower your leg back down to the floor. Do 3 sets of 10.

6. STEP-UP: Stand with the foot of your injured leg on a support (like a block of wood) 3 to 5 inches high. Keep your other foot flat on the floor. Shift your weight onto the injured leg and straighten the knee as the uninjured leg comes off the floor. Lower your uninjured leg to the floor slowly. Do 3 sets of 10.



7. WALL SQUAT WITH A BALL: Stand with your back, shoulders, and head against a wall and look straight ahead. Keep your shoulders relaxed and your feet 1 foot away from the wall and a shoulder's width apart. Place a rolled up pillow or a soccer-sized ball between your thighs. Keeping your head against the wall, slowly squat while squeezing the pillow or ball at the same time. Squat down until you are almost in a sitting position. Your thighs will not yet be parallel to the floor. Hold this position for 10 seconds and then slowly slide back up the wall. Make sure you keep squeezing the pillow or ball throughout this exercise. Repeat 10 times. Build up to 3 sets of 10.

8. KNEE STABILIZATION: Wrap a piece of elastic tubing around the ankle of your uninjured leg. Tie the tubing to a table or other fixed object.

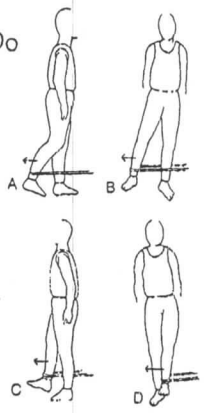
A. Stand on your injured leg facing the table and bend your knee slightly, keeping your thigh muscles tight. While maintaining this position, move your uninjured leg straight back behind you. Do 3 sets of 10.

B. Turn 90° so your injured leg is closest to the table. Move your uninjured leg away from your body. Do 3 sets of 10.

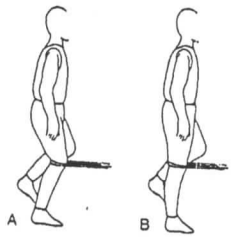
C. Turn 90° again so your back is to the table. Move your uninjured leg straight out in front of you. Do 3 sets of 10.

D. Turn your body 90° again so your uninjured leg is closest to the table. Move your uninjured leg across your body. Do 3 sets of 10.

Hold onto a chair if you need help balancing. This exercise can be made even more challenging by standing on a pillow while you move your uninjured leg.



9. RESISTED KNEE EXTENSION: Make a loop from a piece of elastic tubing by tying it around the leg of a table or other fixed object. Step into the loop so the tubing is around the back of your injured leg. Lift your uninjured foot off the ground. Hold onto a chair for balance, if needed.



A. Bend your knee about 45 degrees.
B. Slowly straighten your leg, keeping your thigh muscle tight as you do this.

Do this 10 times. Do 3 sets. An easier way to do this is to perform this exercise while standing on both legs.