



Marino TherapyCenters

Since 1977 and Still Your First Choice

Physical Rehabilitation "Centered on You"

Division of The TherapyCenter, Inc.

# Community Connection

*Our mission is excellence ...*

*in the compassionate and efficient delivery of rehabilitative and preventive health care to the people we know, love, and serve.*

## Cedar Bluff Office

8904 Cross Park Drive  
Knoxville, TN 37923  
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## Farragut Office

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Knoxville, TN 37934  
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## South Knoxville Office

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## Needy Knees: A Closer Look at the Knee

**Let's face it...** we all take our knees for granted – well at least while they are working properly. However, once our knees become "needy" we realize how little we understand about this joint and how we should care for them. Knee pain may occur for many different reasons. To better understand knee problems, it is important to understand some of the anatomy of the knee joint and how the parts of the knee work together to maintain normal function.

**Basic Anatomy:** Ligaments are tissues that join bone to bone. Without strong, tight ligaments to connect the femur (the large bone of the thigh) to the tibia (the large bone of the lower leg), the knee joint would be too loose (unstable). In contrast to the hip or ankle joint that are more stable due to the way the bones are formed in the joints, the knee has very little bony stability and behaves more like a round ball on a flat surface. Because there is no built-in stability in the bones around the knee joint, the ligaments of the knee joint are the most important structures that stabilize the joint.

The ligaments that prevent the knee from moving too far in the side-to-side direction are called the Medial Collateral and Lateral Collateral ligaments. The Anterior Cruciate and the Posterior Cruciate ligaments control the front to back motion of the joint.

**Articular cartilage** is the material that covers the ends of the bones of any joint. This material is about ¼ of an inch thick and is a tough, very slick material that allows the surfaces to slide against one another without damage to either surface.

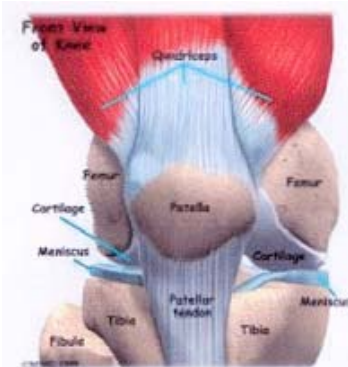
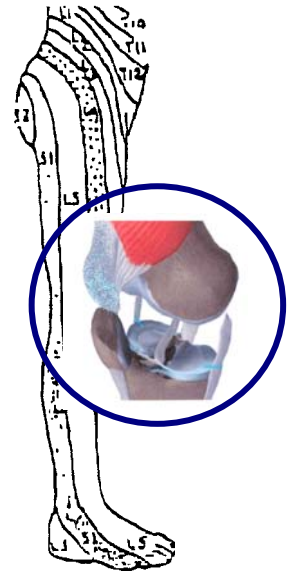
**The Menisci**, two structures that sit between the femur and the tibia are sometimes referred to as the cartilage of the knee. The menisci are important for two reasons. First, they work like a gasket, to spread the force of weight-bearing over a larger area, protecting the articular cartilage. Second, they help the ligaments with stability of the knee. Without each meniscus, the concentration of force onto a small area of the articular cartilage would cause damage, or degeneration (wearing away of the articular cartilage).

**The quadriceps mechanism** is the motor that drives the knee joint and allows us to walk. It is composed of the patellar tendon, the patella (Kneecap), and the quadriceps muscle on the front of the thigh. The patella fits into a groove on the front of the femur. The way in which the patella fits into this groove, and slides as the knee bends, can affect the

overall function of the knee. The patella works like a hinge: when the quadriceps muscle contract the knee straightens, when they relax the knee bends.

While this does not teach you the complete anatomy of the knee, it is a good basis to assist in understanding what are some of the most commonly seen knee problems by physical therapists.

**Patellofemoral Pain Syndrome:** 2.5 million Americans experience patellofemoral pain syndrome. It can result from malalignment of the patella on the femur, weakness of the quadriceps muscles, or tight structures on the lateral (side)



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aspect of the knee. Pain may be felt behind or around the knee cap, grinding noises may be heard during bending or straightening the leg, the knee may feel like it "gives away" without any particular reason, or some mild swelling may be noted around the knee. Many times conservative treatment of pain relief coupled with **physical therapy** for strengthening and stretching, should re-establish motion, power, and stability to the joint.

#### **ACL (Anterior Cruciate Ligament) Injuries:**

The anterior cruciate ligament (commonly referred to as ACL) is the most injured ligament of the knee. The ligament is most commonly injured during athletic activity when the knee is forcefully twisted or hyperextended, usually occurring when the foot is firmly planted and the body changes direction rapidly and the ligament tears. Symptoms will vary but typically there is swelling (due to bleeding into the knee joint from torn blood vessels in the damaged ligament), instability, loss of weight bearing ability, and pain. Diagnosis of ACL injuries involves combinations of x-rays, MRI scan, and/ or arthroscopy by your physician.

Treatment involves aspiration to remove the blood in the joint, bracing, physical therapy and possibly surgery. If reconstructive surgery is indicated, physical therapy will generally be prescribed prior to and following surgery. A **good physical therapy program** will help retrain the proprioceptive nerves as they repair themselves and will strengthen the muscles responsible for stabilizing the knee joint.

**Osteoarthritis:** This is a common problem for many individuals after middle age. The main problem in osteoarthritis is degeneration of the articular cartilage that covers the joint. This results in areas of the joint where bone rubs against bone. Bone spurs may form around the joint as the body's response. Osteoarthritis can also result from an injury to the knee earlier in life. Fractures involving the joint

surfaces, instability from ligament tears, and meniscal injuries (as explained above) can all cause abnormal wear and tear on the knee joint.

Osteoarthritis develops slowly over several years and the symptoms are generally pain, swelling, and stiffening of the knee. The pain experienced is usually worse after activity. You may notice that your knee does fairly well while walking, but after sitting for several minutes the knee becomes stiff and painful. As the condition progresses, pain can interfere with even simple daily activities. Diagnosis of OA can usually be made on the basis of the history, examination, x-rays, and sometimes an MRI may be required by your physician.

Treatment is dependent on the severity/progression of the OA, however, your physician may prescribe a mild analgesic (acetaminophen), or anti-inflammatory (ibuprofen), and in some cases cortisone. **Physical Therapists** can play a significant role in managing OA, through use of modalities to decrease pain, and joint mobilization to provide nutrition and lubrication to the joint surfaces. A general fitness and therapeutic exercise program developed by the physical therapist can assist you in:

- Increasing range of motion to help keep joint surfaces healthy, slowing the degeneration process.
- Increasing strength with isometric while protecting you from further pain and irritation. A trained and conditioned muscle generates forces more quickly, acting as shock absorbers and protects the knee joint.

**So, take a closer look. Are your Knees Needy? If you have questions or concerns, seek the advice of your health care professional to choose the treatment that's best for you.**

**Marino TherapyCenters** offer knee screenings which will provide you with information about your knee problems which should assist you in making the best decisions for your recovery.

Contact Marino TherapyCenters location nearest you to schedule your screening.

## Community Connection

The best patient care is achieved through effective education on ways to maintain and improve quality of life. This newsletter is designed to enhance our communication with those who entrust their care to Marino TherapyCenters.

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**Thank You.**



**Marino TherapyCenters**

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Monday-Friday: 7 am – 7 pm  
Same day emergency appointments  
Evaluations available without referral

- Where patient needs come first Therapist Owned & Operated
- Care for all ages: newborn through senior
- 29 years of quality service in East Tennessee