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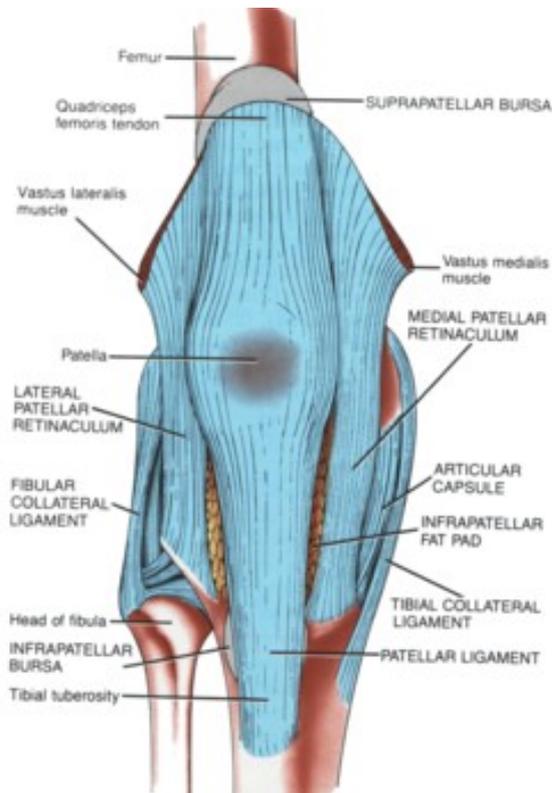
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Chondromalacia and Runner's Knee

Chondromalacia, or runner's knee, is a condition where the articular cartilage, located underneath the kneecap (patella), starts to soften and break down. This cartilage is usually smooth and allows the knee joint to move freely as the knee bends. However, as chondromalacia worsens, the cartilage breaks down, causing irregularities and roughness on the undersurface of the patella, which leads to irritation and pain underneath the patella, or kneecap.

Anatomy of the Knee



The picture to the left is a front-on view of the bones, tendons and ligaments that make up the knee joint. In the very center of the picture is the patella, or kneecap. The blue structure that runs downward from the patella to the tibia (shinbone) is the patella ligament, and located underneath the patella is the articular cartilage.

What causes Chondromalacia?

Overuse (or doing activities that your knees aren't conditioned for), is the major cause of chondromalacia, or runner's knee. Activities that involve a lot of running, jumping or rapid change of direction are particularly stressful to the knee joint. Participants of basketball,

volleyball, skiing, soccer, tennis and other running related sports are particularly vulnerable to runner's knee.

Other factors also contribute, including: being overweight; pronation or inefficient foot mechanics; and insufficient warm up before exercise.

Although chondromalacia can occur to anyone at any time, there are two distinct age groups that are most susceptible.

- **The over 40's;** where general wear and tear of the knee joint is occurring due to age and degeneration.
- **Teenagers;** (especially girls) where rapid growth is causing structural changes to the legs and knees.

What are the Signs and Symptoms of Chondromalacia?

The major symptom of chondromalacia is pain in the area around the kneecap. Activities like walking, running and especially squatting, kneeling or jumping will cause increased pain and discomfort.

Chondromalacia Prevention

Although it is important to be able to treat chondromalacia and runner's knee, prevention should be your first priority. So what are some of the things you can do to help prevent chondromalacia?

1. **Warm Up properly.** A good warm up is essential in getting the body ready for any activity. A well-structured warm up will prepare your heart, lungs, muscles, joints and your mind for strenuous activity. **Avoid activities that cause pain**
This is self-explanatory, but try to be aware of activities that cause pain or discomfort, and either avoid them or modify them.
2. **Rest and Recovery.** Rest is very important in helping the soft tissues of the body recover from strenuous activity. Be sure to allow adequate recovery time between workouts or training sessions.
3. **Balancing Exercises.** Any activity that challenges your ability to balance, and keep your balance, will help what is called, proprioception: - your body's ability to know where its limbs are at any given time.
4. **Stretching.** To prevent chondromalacia, it is important that the muscles around the knee be in top condition. Be sure to work on the flexibility of all the muscle groups in the leg.

5. Strengthening.

Short-arc extensions are done sitting up or lying down. Use a rolled-up towel to support your thigh while you keep your leg and foot in the air for 5 seconds. Lower your foot as you bend your knee slowly. Repeat 10 times for each leg, twice a day.



Straight-leg raises are done lying down. Lift your whole lower limb at the hip with the knee extended, and keep it up in the air for 5 seconds. Then lower slowly. Repeat 10 times for each leg, twice a day.



Quadriceps isometric exercises are done sitting up, with your legs extended in front of you.



Tighten your quadriceps muscles by pushing the knees down onto the floor. Hold for 5 seconds. Repeat 10 times each leg, twice a day.

Stationary bicycling on low tension setting improves your exercise tolerance without stressing your knee. Adjust your seat high enough so that your leg is straight on the down stroke. Start with 15 minutes a day and work up to 30 minutes a day.



6. Footwear. Be aware of the importance of good footwear. A good pair of shoes will help to keep your knees stable, provide adequate cushioning, and support your knees and lower leg during the running or walking motion.

7. Strapping. Strapping, or taping can provide an added level of support and stability to weak or injured knees.