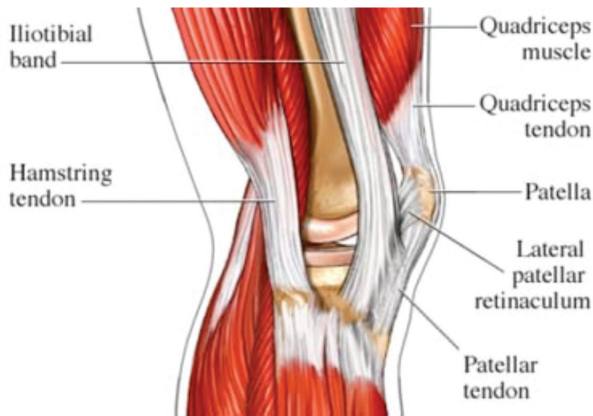




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PATELLOFEMORAL PAIN SYNDROME



WHAT YOU MAY EXPERIENCE

- Along the medial(inner) aspect of the kneecap or just below the kneecap
- When using stairs or going up/down hills
- Worse after prolonged sitting with the knees bent
- More of a dull ache
- Cracking or prating in the knee
- Eventually, knee may want to “catch” and may feel like it wants to give out

POSSIBLE SOURCES

Softening of the cartilage on the patella (kneecap). Roughening of the cartilage under the patella caused by the kneecap not tracking properly (patella does not glide smoothly over the femur/thigh bone). May also be referred to as Chondromalacia Patella. One of the most common knee problems in running and other sports (may occur at any age).

EXCESSIVE PRONATION

- Pronation is a normal movement of the foot that allows the arch to flatten to a degree, which helps the body to absorb shock and adapt to different ground surfaces.
- In analyzing ones gait, first contact is on the heel and outside of the foot, followed by a shift of body weight forward, toward the arch and toes.
- If the foot is weak or tired and/or the footwear is not supportive, then the arch can flatten more than normal, which is excessive pronation.
- Flattening of the arch (excessive pronation) increase stresses on the foot, which can further contribute to ankle, knee, hip and low back problems (a chain reaction).
- This repetitive, excessive pronation is the main contributor to many lower extremities, overuse injuries.

CONTRIBUTING FACTORS

- Mechanical conditions including wide hips (females), knock knees, patella alta (high patella) and subluxating patella.
- Over pronation of the foot.
- Weakness of the quad, especially the VMO (Vastus Medialis Oblique Muscle) which runs along the inner aspect of the thigh and connects at the knee, as well as the gluteus medius muscle.
- Overuse or an increase in hill running or stair use.
- Too large of a Q-angle at the knee (this is the angle of the quad muscle’s effective pull on the knee cap). Less than 12 degrees is normal and greater than 15 degrees is abnormal.

QUICK FIX

The 3 S’s- **Stretching, Strengthening, and Supporting**, along with ICE and REST, have been found to be the simplest and most effective for these injuries:

1. **Stretching** of the hamstring, quad calf and IT Band will help to decrease pressure at the kneecap (**see LOWER LEG STRETCHES sheet**).
2. **Strengthening** of the quad, especially the VMO (vastus medialis oblique muscle) will help the kneecap to glide more correctly through the groove at the knee joint (**see PATELLOFEMORAL PROGRAM on the back of this sheet and 4-DIRECTION LEG STABILIZATION sheet**).
3. **Supporting** the foot with proper shoes and insoles can prevent or help to eliminate the vast majority of lower extremity problems due to faulty biomechanics. You may consult with your Sports Medicine Physician or Sports Medicine Physical Therapist for guidelines about this; they can guide you to an appropriate running store.

FOLLOW-UP

If these quick fixes do not help resolve your problem, this would be the point where you would consult your medical practitioner. You could start with your Primary Care or Sports Medicine Physician. They may test your knee & take x-rays or do an MRI or other tests to narrow down your diagnosis. Follow up from there could be with your Physical Therapist where a combination of manual therapy & specific exercises may help resolve your problem. If damage is significant, you may be referred to an Orthopedic Surgeon.



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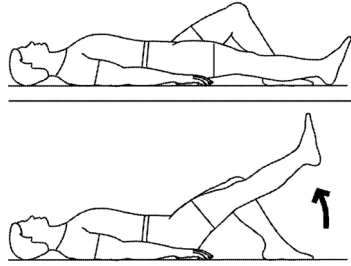
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LEG STRETCHES

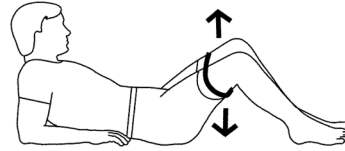
1. STRAIGHT LEG RAISE



Resting on hands, tighten muscles on front of Right / Left thigh, and then lift leg 6 inches from surface. Keep knee locked. Hold 10 seconds.

Repeat 10 times per set.
Do 2-3 sets per session.
Do 1-2 sessions per day.

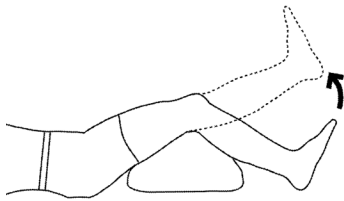
4. HIP ABDUCTION



Loop elastic band around thighs near knees or place hands on the outside of legs near knees for resistance. Keep ankles together, spread knees apart. Return to start position. Hold 10 seconds.

Repeat 10 times per set.
Do 2-3 sets per session.
Do 1-2 sessions per day.

2. TERMINAL KNEE EXTENSION



With Right / Left knee over bolster, straighten knee by tightening muscles on top of thigh. Keep bottom of knee on bolster. Hold 10 seconds.

Repeat 10 times per set
Do 2-3 sets per session.
Do 1-2 sessions per day.

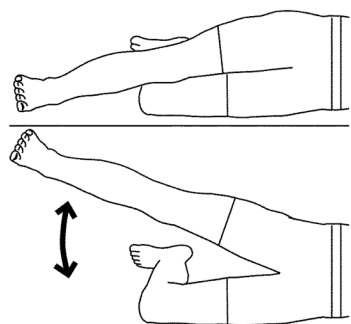
5. STEP UP / STEP DOWNS



Stand on step. Slowly bend Right / Left knee, lowering Left / Right foot to floor. Return by straightening front leg.

Repeat 10 times per set.
Do 2-3 sets per session.
Do 1-2 sessions per day.

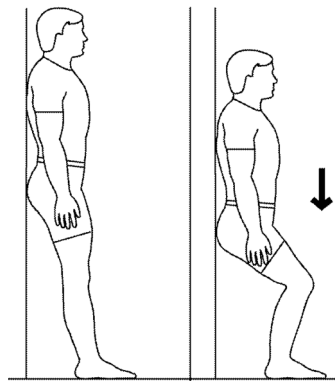
3. HIP ABDUCTION



Tighten muscles on front of Right / Left upper thigh, and then lift upper leg 1-2 feet from surface. Keep knee locked. Hold 10 seconds.

Repeat 10 times per set.
Do 2-3 sets per session.
Do 1-2 sessions per day.

WALL SLIDE



Leaning back and shoulders against wall, slowly lower buttocks until thighs are parallel to floor. Hold 10 seconds.

Repeat 10 times per set.
Do 2-3 sets per session.
Do 1-2 sessions per day.



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