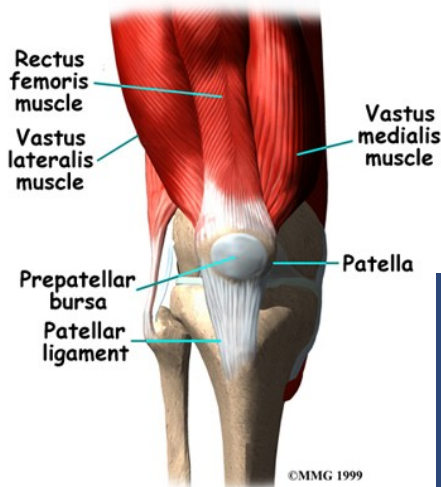


# Getting Back to Pain Free Running

## Knee Pain



Sports & Physical Therapy



Our topic last month regarding foot and ankle pain discussed the importance of understanding the link between mechanics at the foot and what is occurring at the knees, hips and core. Runners frequently experience **anterior knee pain**, commonly referred to as **patellofemoral syndrome** (PFS), or **IT band pain**. In both diagnoses it is common to experience pain with squatting, climbing stairs, simply rising from a chair, and of course with running. IT band pain tends to be to the lateral/ outside of the knee, while PFS pain is more under the kneecap or generalized to the front of the knee.

Mild cases of knee pain typically respond quickly to rest or modified training, stretching and icing however when symptoms persist it is important to consider that muscle strength imbalances may exist. If so, rest and stretching alone will not correct the underlying biomechanical strength problem. Two quick tests that may shed some light on your strength and stability are:

### Single Leg Sit to Stand

Sit on the front edge of a chair with one foot lifted up off the ground. Without using your hands, rise from sitting up to standing, and then slowly back down while noting the amount of effort right vs. left. Also note whether one knee tends to turn or dive inward as you perform this test. If this seems easy and symmetrical, then move to a shorter chair or to a coffee table and repeat.

### Single Leg Stance with Opposite Leg Swing

Stand on one leg, ideally in front of a mirror. While maintaining balance, level shoulders and hips, swing your opposite leg side to side in front of your stance leg. Attempt to keep a continuous motion with the swinging leg and perform up to 20 reps while noting your ability to balance on the single leg and how stable your torso is.

Both of these functional tests often reveal that on the side of knee pain there is a lack of strength or overall stability. More detailed testing with a physical therapist typically uncovers poor strength in several key running muscles that have an important role in maintaining proper alignment of the knee during *shock absorption phase* (footstrike to mid-stance), and during *propulsion phase* (mid-stance to push-off). A lack of strength results in a compensatory knee position in which the kneecap gets pulled away from its normal alignment or the IT band as it crosses the outer knee gets forcefully strained.

Several recent scientific studies (Journal of Orthopedic and Sports Physical Therapy) have indicated that strength and proper muscle firing patterns in the hip muscles (gluteus medius, gluteus maximus) have a significant role in controlling knee alignment and the biomechanics at the knee. Both of these muscles are at work with the above two tests, so a significant asymmetry may indicate that you have weakness in these important running muscles.

**For those of you running with knee pain as described above, feel free to access our “help line” via e-mail or see us for a free injury consult at the race day finish area.**

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