Dynamic Chiropractic

SPORTS / EXERCISE / FITNESS

Chiropractic and the Runner (Part 2 of 2)

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Editor's note: Part 1 of this article appeared in the June 4, 2005 issue: www.chiroweb.com/archives/23/12/03.html.

Inner Knee Pain

The most common painful condition among runners is inner knee pain. It has many causes, but a common one develops from overpronation, in which more than 60 percent of the weight-bearing of the foot is placed on the inside of the foot, and the foot rolls in excessively. As a result, foot stress increases. This in turn allows the kneecap to slide off center and rub against a portion of the knee joint that it should not rub against. The shoe will eventually warp according to the abnormal stress applied to the shoe by the foot.

As a person pronates excessively, the shoe leans in excessively due to this imbalance. As this excessive pronation occurs, increased stress is directed into the undersurface of the kneecap. As a result, the body reacts by depositing calcium underneath the kneecap. The calcium begins to dig into sensitive nerves in the area; pain is often the result when you try and run. This is called chondromalacia or runner's knee, and you don't have to be a runner to suffer from this condition. Treatment involves stretching the quads while standing and leaning back, with one leg forward and one leg in back. Patients should avoid hurdler's-type stretches or stretching the quadriceps while bending the knee.

Correction of the abnormal pronation with straight-laced shoes and/or semi-rigid orthotics with varus wedges is paramount. A common correction is the use of a varus wedge (2-6 degrees). Advise your patient to ride a bike at least three times per week with toe straps, 80 rpm with low resistance (15 degree bend in knee at bottom of pedal arc).

Outer Knee Pain

The second most common type of knee pain that runners suffer from is outer knee pain. Most commonly, this is caused by an oversupination condition - the opposite of overpronation. The foot does not roll in enough, and as a result, the kneecap slides off to one side repeatedly. Pain begins first, and if uncorrected, causes premature degeneration, much like unbalanced tires on your car cause excessive tread wear. Treatment involves correction of the abnormal supination with valgus-wedged flexible orthotics.

Many runners who supinate have come into my clinic with orthotics manufactured by foot doctors; more than half had orthotics designed for an overpronater. As a result, the patient did not get well and actually continued to get worse as a result of the improperly made orthotics. Since 90 percent of knee conditions are caused by overpronation, many rushed doctors assume that the patient automatically needs an orthotic with a varus wedge. The 10 percent of patients who supinate will get worse if they wear this type of wedge. Careful evaluation must be done to avoid this problem.

I always tell the patient to bring me the oldest running shoes he or she has, with the highest

mileage and wear pattern. Much like the tires on your car after they are worn out, shoes will tell a story. Using this method, you will not mistakenly prescribe antipronation orthotics for the oversupinater. The shoes will clearly show which imbalance the runner has, if any. When looking at the wear pattern on the running shoe, the outer heel and the center of the forefoot should be slightly worn. Any deviation signifies the need for a prescription orthotic and modifications that address those imbalances.

In addition to orthotics, the patient should be instructed to bike at least three times per week with toe straps or clips, and to pedal at a cadence of 80 rpm with low resistance. If the patient is supinating when running, the shoes will eventually wear out on the lateral outer sole area. Likewise, if the patient continues to run this way, his or her ankles, knees, iliotibial band, bursae and hips will also eventually experience dysfunction and premature wear. Many runners develop bursitis as a result of oversupination. The IT band crosses over the outer hip bone (greater trochanter of the femur). If the band is too tight, excess friction will be created at the point where the tendon crosses over the hip bone. If the band is too tight, the bursae will swell and pain will result. This pain is simply nature's advice to eliminate the cause, which may be oversupination and/or a tight IT band.

Correct the supination and develop flexibility of the IT band. There are no shoes that have been designed to correct severe supination. We can, however, make orthotic devices specifically designed to correct this condition. These orthotic devices simply incorporate a custom-designed valgus wedge. This specific wedge will change and balance the center of gravity in the lower extremities. An orthotic that reduces supination will often solve a lower extremity imbalance and a bursae/IT band syndrome.

Patellar Tendon Pain

Much like a lever and a fulcrum, when the quadriceps muscle contracts, the patellar tendon is placed under tremendous stress. When the quadriceps muscle is inflexible, it places the patellar tendon under an increased workload, and it begins to microscopically tear and swell up. Treatment involves iontophoresis and ultrasound. After healing has occurred, a program of quadriceps flexibility should begin.

Piriformis Syndrome

Many runners report gluteal pain when running. Pain may sometimes go down the back of the leg. Have the patient lie down and flex the knee to 15 degrees, and then externally rotate the leg against resistance. Direct tenderness will be found in the piriformis area over the buttock region. If the straight-leg-lift test is positive and causes sciatic pain, externally rotate the leg to see if this lessens the pain. This could indicate compression of the sciatic nerve by the piriformis. Also check the sacroiliac joint.

Treatment should be directed at the cause of the pain, not at treating the symptoms. Possible contributing imbalances are weak abductors, tight adductors, tightness of the anterior portion of the iliotibial band, leg-length difference, tight hamstrings, pronation of the foot, etc. Other contributing factors can be running on side-angled surfaces, increasing stride angle, and running downhill too fast.

ITB Syndrome

Iliotibial band (ITB) syndrome is fairly common in runners, and it almost always occurs on the side of the short leg. To maintain upright posture, the IT band is our lateral stabilizer. Running tightens

this IT band. Over time, if the band becomes too tight, it will cause excessive friction on the greater trochanter of the femur. This friction can cause the bursae to swell and the tendon to inflame. Treatment involves correcting the leg-length discrepancy and stretching two different ways to develop flexibility of the band. Avoid the IT band stretch depicted in running magazines, whereby the runner is standing with one leg crossed over another while he or she stretches laterally. It is fine for the IT band, but it wreaks havoc on the lower back. To correct one condition and cause another condition is not logical.

To stretch the right IT band, instruct your patient to perform the following protocol: Sit in a chair and put your right foot on the opposite knee. Place your right hand under your right knee and your left hand under your right ankle. Lift both of them gently while trying to keep your tibia parallel to the ground. For the next stretch of your right IT band, put your right foot on your opposite knee, and then with your left elbow, contact the outer part of your right knee and gently push it to the left as you rotate your upper body to the right.

Lower Back Pain

Causes of lower back pain in runners include weak abdominals, tight lower back and hamstrings, leg-length discrepancy, disc degeneration, rotational misalignment of the lumbar vertebrae, and/or muscle imbalance. Treatment: The runner should be doing 10 sit-ups (pelvic tilts) for every mile that he or she runs. Hamstring stretches are mandatory, as is chiropractic manipulation of the lumbar vertebrae, along with specific one-sided bending exercises to correct muscle imbalance.

Often, the cause is different than you might think. A pre-existing imbalance, carrying kids on one hip, wearing high heels, sleeping on one side, carrying a heavy purse, maintaining poor posture at work, etc., can cause lower back muscle imbalance. Leg-length discrepancy, IT band syndrome, overpronation, improper biking form, improper repeated lifting (e.g., lifting a kayak over the head to put it on the roof rack of a vehicle), or running on uneven terrain, can add further insult over time.

Most runners have a leg-length discrepancy. It may have developed from running facing traffic on angled highways or sidewalks, or from running counterclockwise on tracks; or it may be pre-existing, with a cause unrelated to running. In addition to performing chiropractic adjustments, you should design specific exercises so that patients can stretch one side of their body and strengthen the other side, to restore lost structural symmetry. Over a few decades of life, we all develop muscle imbalances in one way or another. The greater the imbalances, the greater the chances that these imbalances will express themselves in a painful manner.

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JULY 2005