

Trigger Points for Runner's Knee

Sara Calabro, LAc

The Boston marathon takes place this month. One of the race's most infamous stretches is Heartbreak Hill. The relatively modest, half-mile incline can feel impossibly steep to runners after they've already logged 20 miles. But no one hates Heartbreak more than participants suffering from runner's knee, a common injury that's exacerbated by running hills.

Acupuncturists trained in trigger-point dry needling can offer immense relief to those who find themselves sidelined by runner's knee and frustrated by the seeming lack of effective treatments.

What Is Runner's Knee?

Runner's knee is usually diagnosed as chondromalacia patella, suggesting damage to the cartilage under the kneecap. Another diagnosis is patellofemoral pain syndrome, indicating poor alignment of the kneecap over the femur. However, in a large number of patients, neither of these diagnoses fully explains what's going on.

This is why runner's knee, for many, is a recurring injury for which pain medications, icing, orthotics and other frequently prescribed treatments offer temporary, if any, relief. Many cases of runner's knee are actually muscular in nature, caused by trigger points that refer pain to the knee.

Choosing Trigger Points

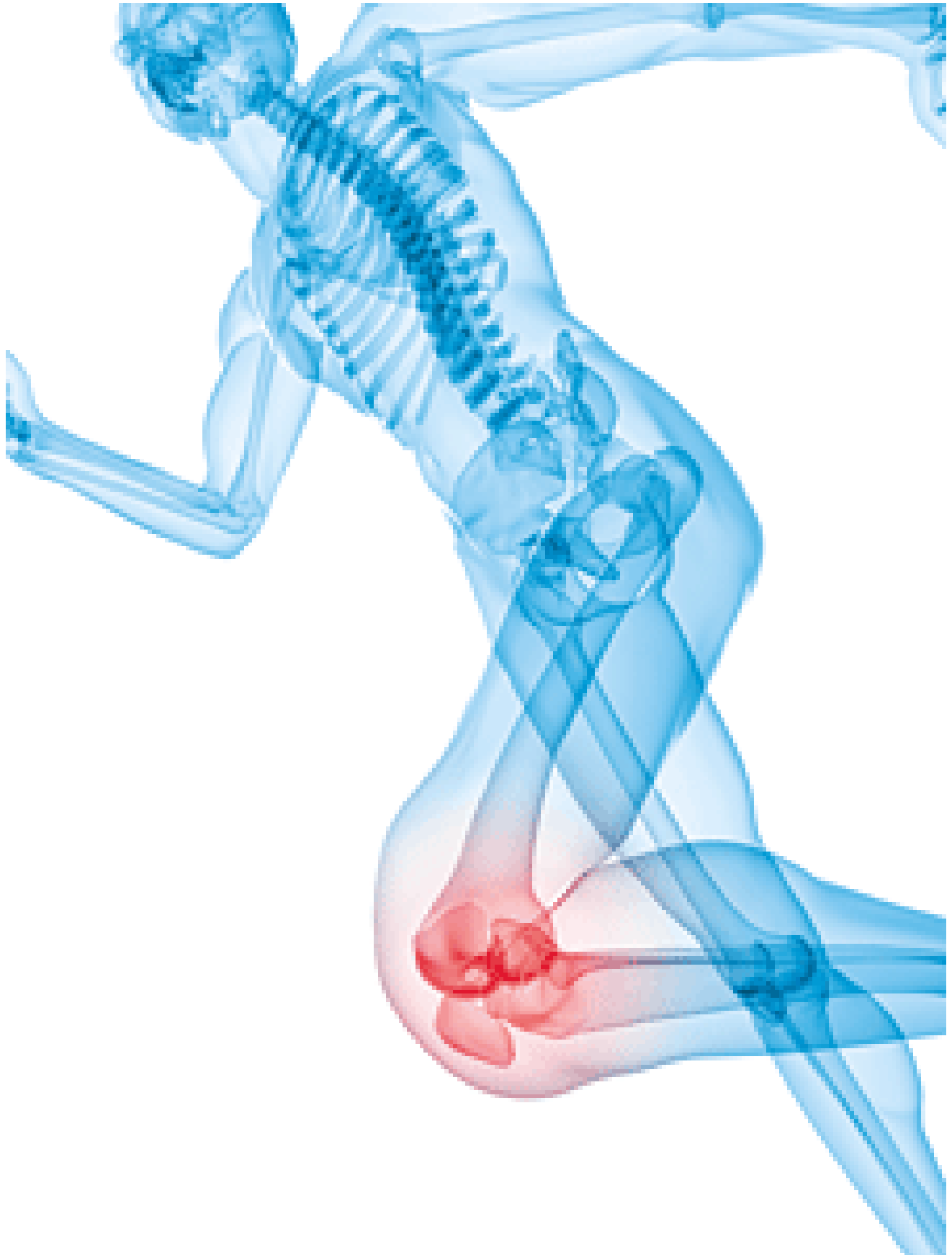
Trigger points in a number of different muscles--the hamstrings, gluteus minimus, and sartorius--can cause knee pain. But the most likely culprit in runners is the quadriceps. The quadriceps femoris muscle group includes the vastus medialis, vastus intermedius, vastus lateralis, and rectus femoris.

With the exception of the vastus intermedius, whose trigger points usually refer pain to the mid-thigh region, trigger points in any of the quadriceps muscles can cause knee pain. A key to determining the affected muscle is asking the patient to identify the exact location of the pain.

Vastus Medialis: Trigger points in the vastus medialis refer pain to the front and inner side of the knee. Since trigger points in other muscles can produce similar pain patterns, a tip off to the vastus medialis is if the patient also mentions weakness in the thigh and knee area, including buckling of the knee. Also, vastus medialis trigger points cause deep pain in the knee joint, leading to the common misdiagnosis of knee-joint inflammation.

Vastus Lateralis: Pain on the outer knee suggests trigger points in the vastus lateralis. This is the biggest of the quadriceps muscles, so trigger points can cause pain anywhere along the lateral thigh, as high as the pelvic area, down to just below the knee. In addition to lateral knee pain, signs of vastus lateralis involvement include difficulty sleeping--since many people sleep on their sides, trigger points

up the lateral thigh can cause pain at night--and posterior pain--the vastus lateralis is the only quadriceps muscle whose trigger points can cause pain behind the knee. Vastus lateralis trigger points also can restrict patella movement, evidenced by difficulty flexing and extending the knee after sitting.



Rectus Femoris: Although frequent offenders in cases of runner's knee, rectus femoris trigger points are often missed because of their location. They usually appear near the proximal end of the muscle, on the upper thigh, around ST31. Trigger points in this part of the muscle refer pain directly to the kneecap. The rectus femoris sometimes develops trigger points near the distal end of the muscle, just above the knee, but the upper portion is more common. Since pain in the front of the knee can also be caused by vastus medialis trigger points, palpation is the best way to distinguish rectus femoris involvement. In addition, patients might complain of waking up at night with kneecap pain, as certain side-lying positions shorten the rectus femoris muscle.

For extra locations of quadriceps trigger points and their pain-referral patterns, Janet Travell's "*Myofascial Pain and Dysfunction: The Trigger Point Manual*" is the consummate guide.

Patella Involvement

If quadriceps trigger points are so often to blame for runner's knee, why do orthopedists, sports medicine doctors, and physical therapists talk so much about the patella? Quadriceps trigger points can be a primary source of knee pain, however, they also can cause pain indirectly, by creating dysfunctional tracking of the patella (mentioned earlier as patellofemoral pain syndrome).

In "*Myofascial Pain and Dysfunction*," Travell says, "Normal functioning of the patellofemoral joint depends largely on the dynamic balance between the medial and lateral forces exerted by the vastus medialis and vastus lateralis muscles."

Trigger points disrupt this balance by shortening the muscles and making them tense, essentially pulling the patella offline. Through trigger-point release, the muscles relax to their normal resting state and allow for proper movement of the patella along the groove of the femur.

Acupuncturists, through educating their patients about trigger points and releasing them when appropriate, can play a critical role in demystifying common injuries such as runner's knee.

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