



MUSCULOSKELETAL PAIN

## Patellar Tendonitis/Tendinosis

Mark A. King, DC

Whenever a patient presents with knee pain, there are many things to consider as the ultimate cause.



**Figure 1: Starting position for the 6" step down, which checks for balance, flexibility (including at the mortise joint) and eccentric control of the glutes**

I once read an article by Dr. Corey Campbell in which he describes the knee as the middle child. By this, he meant that the knee pain, short of direct trauma, is aggravated by the ankle below or the hip/pelvis above. This problem can affect young and elderly patients alike. There is a tendency for the patellar tendinosis with younger patients, under age 35, to be infrapatellar, and for the patients over 35 to be suprapatellar. There is often tenderness to palpation just above or below the patella where the irritation is occurring. Osgood-Schlatter disease occurs in an even younger crowd, specifically young teenagers, and the pain is at the tibial tuberosity. These conditions are particularly aggravated with running and jumping, or walking up steps. With Osgood-Schlatter disease or patellar tendinosis, there are some other common features.

These patients are often quad-squatters rather than glute-squatters. By this, I mean the patient puts extra stress on the knee with normal movements because their hips are too stiff and the glutes are too weak to activate them properly. If you look at Olympic-level squatters, the power is coming from their hips, rather than their quadriceps. Granted, they have strong quadriceps, but the really large power comes from their glutes. These patients will often have tight quadriceps. A modified Thomas test to check for iliopsoas, quadriceps and tensor fascia latae length will be helpful to evaluate that tightness. Resisted-knee extension may be painful.

You also will need to eliminate some of the other possible causes of knee pain. The specific area of pain will often help with the diagnosis. There can be a medial or lateral meniscus injury or possibly ligamentous instability if there has been significant trauma. Chondromalacia patella is easily evaluated by moving the patella around to check for grinding. You need to check for patellar malalignment. Patellar malalignment will lead you to check the external hip rotators and lateral quadriceps for shortening.



**Figure 2:** Completion of the test for the 6" step down, as the patient slowly lowers their right foot down with toes pointing up and lightly touches the right heel to the floor in a smooth and coordinated manner. For more advanced athletes, an 8" step down can be used.

For treatment of patellar tendinosis, be sure to look to adjust the foot/ankle and hips/pelvis as indicated, to make sure there is no joint dysfunction in those areas. You will likely need to stretch out the quadriceps, specifically the rectus femoris and possibly the iliopsoas and TFL. If the patient is a quad-squatter, then teaching them proper squat technique may be quite helpful. If they are driving their squat with glutes rather than quadriceps, they will take a lot of stress off the knee. Local treatment is often needed, including adjusting the knee, transverse friction at the tendon, Graston or ART, or other soft-tissue techniques. Various physiotherapy modalities, including ultrasound or EMS or laser therapy and ice, can be used.

Again, with these knee problems, you need to try to find the cause of the problem and not just treat the local tendon if there is another area that is driving the irritation. Anti-inflammatory nutrition, including essential fatty acids and anti-inflammatory herbs such as ginger or turmeric, are often helpful. From a rehab perspective, I have already mentioned the proper squat technique, but you also can do balance work or short-arc quads, with the patient squeezing out leg extensions for just the last 20 percent to 30 percent of the arc and not doing a full range. The reason they avoid the full range is because of grinding under the patella. Eventually, they can do one-legged quarter squats, ensuring that they try to sit into that quarter-squat, rather than doing a quad squat, which will aggravate the knee further.

A test I particularly like to use to check for glute and hip strength is to watch a patient do a 6" step down (See Figures 1 and 2). You also can watch the patient do a squat. The 6" step down can be increased to an 8" step down if you have a particularly young/athletic patient. They will tend to lose control of the knee as they descend because their glutes are too weak to stabilize, and the knee will adduct or abduct to help gain stability.

For these patients, you will need to do local treatment and also a more holistic evaluation of each patient's condition. Because chiropractors look at the whole body, we are really well-suited to treat these types of conditions and get to the source of the problem. This will help grow your practice and your reputation in your community as an expert for knee problems.

DECEMBER 2007