

# Patellofemoral Pain Hits Female Athletes Hard

BY MELINDA TANZOLA  
Contributing Writer

MIAMI — Patellofemoral pain syndrome is the most common sports-related overuse injury in young athletes, occurring in an estimated 30%-40% of female athletes at some point in their career, Dr. Joseph Congeni said at a meeting on pediatric sports medicine sponsored by the American Academy of Pediatrics.

Athletes need to understand the process of PFS and how it is treated, rather than play through their pain or stop sports altogether without seeking treatment.

The syndrome, also known as runner's knee, is usually caused by improper tracking of the kneecap in the patellofemoral groove. A few cases do not involve tracking but result from compression of the kneecap, which can develop if the hamstring muscle is significantly stronger than the quadriceps. This type of PFS more often occurs in younger children who have just gone through their growth spurt or teenage boys.

The incidence of tracking PFS is about five times greater in girls than in boys. Several anatomical factors contribute to PFS, including femoral anteversion, kneecaps pointing toward each other

("squinting patella"), genu varum (bow-leg), and tibia varum. The feet compensate for the malalignment by pronating, and these factors together result in pain, said Dr. Congeni, medical director of the sports medicine center at the Children's Hospital Medical Center of Akron (Ohio).

Chronic overuse injuries like PFS can be more difficult to diagnose and treat than are acute injuries. Many factors are at play, including anatomy, biomechanics, hormonal issues, nutrition, genetics, training errors, and micro- and macrotrauma.

Children with tracking PFS present with pain around the knee that emerges gradually without any specific injury. They may or may not have swelling around the kneecap. Clinicians may see that the patella tracks in a "J" pattern when the leg is extended, because the patella moves inward as it moves up along the knee. Increased ligament laxity or instability also is common in these patients.

The functional tests of a minisquat and a catcher's squat, which will likely be painful in PFS, can help in the diagnosis.

Aside from having a thorough patellar exam, athletes with suspected PFS should undergo a full structural exam—including a careful examination of the hip—to rule out a slipped capital femoral epiphysis

(SCFE). Dr. Congeni recommended, at the very least, clinical evaluation of the internal and external rotation of the hip in these children, as vague knee pain is one of the signs of SCFE. "This is a problem where kids sometimes walk with a limp the rest of their life if we miss it," he said.

PFS is usually a straightforward clinical diagnosis based on history and physical exam, and does not require additional tests. Dr. Congeni recommended x-rays for children who do not improve after a month to rule out other causes and to assess the state of the kneecap.

Dr. Congeni explained that the clinical course of PFS is likely to be a roller coaster of good and bad days, weeks, or months, as activity levels change. Sitting for long periods and walking on stairs or hills can aggravate symptoms.

Treating PFS is a slow process that involves rest and rehabilitation through strengthening (quadriceps and gluteals) and increasing flexibility (quadriceps, hamstrings, and iliotibial band). Bracing can provide some help through a short-term situation. Orthotics can be helpful for correcting mechanical issues, and Dr. Congeni is moving toward orthotics and away from bracing when treating athletes with PFS in his own practice.



Many athletes with the syndrome have a high-riding kneecap, as shown above.

He also suggested asking about the use of nonsteroidal anti-inflammatory drugs. The first goal of treatment in those patients is to help reduce and eventually discontinue the use of these medications. ■

## Cherry Juice May Muscle Out Exercise-Induced Damage, Pain

BY MARY ANN MOON  
Contributing Writer

Drinking cherry juice before and after exercise decreases some indicators of exercise-induced muscle damage, notably pain and loss of strength, reported Dr. Declan A.J. Connolly of the University of Vermont, Burlington, and his associates.

Tart cherries contain cyclooxygenase-inhibiting flavonoids and anthocyanins with high levels of antioxidant and anti-inflammatory activity. Moreover, "consumption of about 45 cherries a day has been shown to reduce circulating concentrations of inflammatory markers in healthy men and women," the investigators noted.

They assessed the effects of drinking cherry juice on symptoms of muscle damage in 14 healthy men with an average age of 22 years.

The subjects drank specially formulated juice from frozen tart Montmorency cherries or a placebo drink for 8 days, then switched to the other drink for another 8 days. They drank one 12-ounce bottle in the morning and another in the evening. Each bottle of juice contained the equivalent of 50-60 cherries and provided at least 600 mg of phenolic compounds and 40 mg of anthocyanins.

After 4 days, the subjects intentionally overexercised one arm, performing a bout of elbow flexion contractions to induce later muscle soreness. The resulting loss of muscle strength was 22% with the



Strength was lost by 22% and 4% of the placebo and juice groups, respectively.

placebo drink but only 4% with the cherry juice, the researchers said (Br. J. Sports Med. 2006;40:679-83).

The cherry drink also decreased muscle pain and shortened its duration. "Pain peaked at 24 hours in the cherry juice trial and subsequently declined, whereas pain continued to increase in the placebo trial to peak at 48 hours," Dr. Connolly and his associates said.

"Although the results of this study indicate a protective effect of cherry juice, it is not possible to conclude that cherry juice supplementation prevented muscle damage because only two of four indirect markers of damage showed an effect.

However, there was clearly a preservation of muscle function attributable to cherry juice. ■

## Restless Legs Syndrome Often Present but Rarely Diagnosed

BY SHARON WORCESTER  
Southeast Bureau

SALT LAKE CITY — Restless legs syndrome is common yet rarely diagnosed in children and teens, Dr. Daniel Picchetti reported at the annual meeting of the Associated Professional Sleep Societies.

Multiple case reports, practice-based study findings, and adult studies showing that more than a third of patients report symptom onset prior to age 20 have hinted at a relatively high prevalence in the pediatric population. Findings from the Peds REST Study—a large population-based study—provides confirmation of that, said Dr. Picchetti of the University of Illinois, Urbana.

In that study of children from more than 10,500 families in the United States and United Kingdom, the prevalence of definite restless legs syndrome (RLS) by the National Institutes of Health consensus criteria definition was 1.9% in children ages 8-11 years, and 2.0% in those ages 12-17 years, suggesting RLS occurs more often than epilepsy or diabetes in this population, he said.

To meet the official diagnosis, patients must meet these NIH criteria:

- ▶ A strong urge to move the legs, which patients may not be able to resist.
- ▶ RLS symptoms start or become worse when resting.
- ▶ Symptoms improve when patients move their legs. The relief can be complete or only partial, but generally starts very soon after activity.

► Symptoms are worse in the evening, especially when patients are lying down.

In the study, moderately to severely distressing symptoms that occurred more than twice weekly were reported by 0.5% of those ages 8-11 years, and by 1.0% of those ages 12-17 years. Furthermore, sleep disturbance and growing pains were significantly more common in those with RLS than in controls, 50% of those with RLS reported the condition had a negative effect on mood, and several medical diagnoses were reported more commonly in RLS patients than would be expected in the general population.

In the U.S. population, for example, RLS patients were commonly diagnosed with ADHD (27%), anxiety disorder (11%), and depression (12%).

Data were collected randomly via Internet survey in April 2005 from a large volunteer research panel. Participants were initially blinded to the survey topic. Responses were provided by the parents of those participants in the 8- to 11-year-old range, and by either parents or the teens themselves in the 12- to 17-year-old range.

Descriptions of RLS symptoms that were provided by children in their own words were convincing in regard to whether they were truly affected by RLS.

"I really got the sense that this was restless legs syndrome—that we got exactly what we were measuring," Dr. Picchetti said, explaining that there was concern about discerning RLS symptoms from other common arthralgias and cramps of childhood. ■