Lateral Knee Pain in Runners:  
The Role of the Biceps Femoris

The summer calendar is packed with races and runners are piling on the miles. Along with long runs and back-to-back workouts are running overuse injuries. Nearly 80% of runners sustain at least one overuse running injury per year.¹ This month’s article will focus on the biceps femoris hamstring muscle. Biceps femoris tendinopathy (chronic inflammation and dysfunction of the tendon related to overuse) is a common, often misdiagnosed injury which plagues many runners.

The biceps femoris is one of three hamstring muscles. The biceps femoris is the lateral hamstring muscle and is composed of a short head and long head. The long head originates at the ischial tuberosity of the pelvis whereas the short head originates along the posterior portion of the femur. The short and long heads of the biceps femoris insert on the lateral knee (fibular head) and lateral collateral ligament of the knee. The biceps femoris flexes the knee, assists with knee extension, and the short head also externally rotates the tibia. Excessive biceps femoris use and deceleration (eccentric contraction) while running may lead to overuse and inflammation at the origin or insertion. Repetitive irritation due to excessive running or compensatory movement patterns (over-striding, glut/core weakness, poor core stabilization leading to anterior pelvic tilt) may lead to chronic tendinosis. Over-activation of the biceps femoris during hip extension results in less than ideal foot strike placement due to external rotation of the tibia. Repetitive “hamstring-dominant” running increases the risk of overuse injuries in the foot, ankle, knee, and hip by increasing torsional forces at foot strike and during the stance phase of the running stride.

Often misdiagnosed as iliotibial band friction syndrome, biceps femoris tendinosis must be treated through specific release techniques. The photo below demonstrates an effective dynamic release technique using a roll or ball beneath the distal biceps femoris while the subject slowly extends and flexes the knee. Following a period of manual therapy to release the hamstring, a

glut, core, and eccentric hamstring strengthening program must be implemented for long-term symptoms resolution. Closed chain (weight bearing) double and single leg dynamic core, glut, and hip exercises must be included in an effective long-term hamstring strengthening program.

A physical therapist skilled in both therapeutic exercise and manual therapy is the person to evaluate and treat the cause of the pain. Manual therapy is a clinical approach using skilled, specific hands-on techniques to evaluate and treat joint structures and soft tissue restrictions for the purpose of reducing pain, increasing range of motion, reducing soft tissue inflammation, relaxing muscle guarding, improving stability through a joint, facilitating movement, and restoring function.2

Remember, regular strength training and adequate recovery are the best defenses against injury as the greatest predictor of future running injury is a history of prior injury.

John Fiore, PT

john@sapphirept.com
www.sapphirept.com
406-549-5283

---