

PERFORMING ARTISTS' HEALTH CORNER

A prelude to performance for dancers, musicians, singers and actors



The Performing Artists' Health Corner is a regular column for *SDP*. The column presents information and/or advice about performing arts-related injury/injury prevention as a resource and should not be used to self diagnose or treat. Performers who experience ongoing pain should seek the advice of a physician or clinician to avoid aggravating current symptoms or potentially causing other more serious injury. No individual diagnosis or treatment plans will be provided through this forum. E-mail questions to info@PAARTSsandiego.com.

BY KATHERINE EWALT

Q. I am a 16-year-old contemporary/ballet dancer and have had pain in the front of my hip for almost 9 months. I went to an orthopedic surgeon, was given anti-inflammatory medications and sent to physical therapy for tendinitis. The physical therapy and medications did not help. After one month off, I still have pain when lifting my leg to horizontal or higher. What could this be, and how can I treat it? —Angie Bevevino

A. Dance activity requires extremes in flexibility and strength throughout the body. We see these demands in the hip joints with various stylistic techniques that involve the lifting/holding the lower extremity at or above horizontal, such as in *développé`a la seconde* (figure 1). Sixty-five percent of dance injuries are repetitive-use injuries (RUI). Iliopsoas tendinosis (formerly tendinitis) is an RUI and presents with pain in the front of the hip with lifting the leg. A brief look at anatomy will highlight potential causes of the pain.

The hip is designed for stability. The head of the femur (ball) sits deep in the acetabulum (socket) of the pelvis surrounded by very strong ligaments and the joint capsule. Individual differences in bony architecture between dancers, including depth of the socket, angle of the femoral head and width of the pelvis, influence how the "ball" glides within the "socket" and, thus, range of motion and efficiency of movement at the hip joint.

The muscles, tendons, ligaments and joint capsule are the soft tissues of the hip. Of particular interest in the case of anterior hip pain are the Iliacus and psoas muscles and tendons (iliopsoas; figure 2), the anterior joint capsule, the iliofemoral/pubofemoral ligaments, and the inguinal ligament (figure 3). The iliopsoas has origins on the spine and pelvis and attaches to the lesser trochanter on the femur. The iliopsoas is the primary hip flexor and assists in abduction (at higher ranges), adduction and external rotation. En route to the lesser trochanter, the tendon passes over the anterior hip capsule and ligaments and under the inguinal ligament (figure 3). The muscle and tendon are in close contact with the inguinal ligament as during movements like *développé*, especially as the hip moves to and beyond 90 degrees where the tendon begins to turn in a "U" around the inguinal ligament (figure 3). Due to the close contact of these tissues, and with repeated flexion of the hip above 90 degrees, the tendon can become irritated resulting in pain, inflammation and possibly tendinosis.

A thorough clinical assessment to determine the exact source of the problem should be conducted to rule out other possible injuries including bursitis, anterior snapping hip, acetabular labral tear, stress fracture/fracture, or even genitourinary system disease. Treatment should include a thorough analysis of dance technique as even subtle imperfections of skill may be the source of the problem. It is recommended the dancer work closely with a clinician well versed in dance to guide appropriate activities and progressions. If the signs and symptoms do not change or worsen, the dancer should seek further advice of a physician. **SDP**



Figure 1

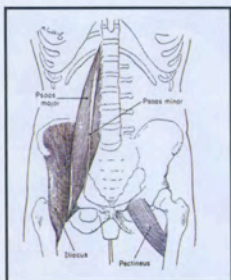


Figure 2

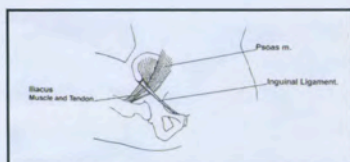


Figure 3

Figure 1: *Développé`a la seconde*

Figure 2: Psoas major, minor and iliacus muscles

Figure 3: Diagram illustrating the iliacus and psoas muscles /tendons as they pass beneath the inguinal ligament. Note how the tendon begins to turn in a "U" during motions such as *développé*.

Model for figure 1: Bernadette Torres, San Diego Ballet Company

Anatomical figures: Fitt SS. *Dance Kinesiology* Second Edition. Schirmer Books, 1996, pg. 146. Sammarco GJ. "The Dancer's Hip" in *Dance Medicine: A Comprehensive Guide*. Pluribus Press, Chicago. 1987, p.231.

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