# The Mature Athlete with Hip Arthritis

James A. Browne, MD

**KEYWORDS**

• Mature athlete • Hip arthritis • Arthroscopy

Recent years have seen a growth in participation in sport among older athletes. From elite competitors to weekend recreational warriors, sport remains an important pursuit for many into the middle decades of life. Despite the inevitable decline in athletic performance with age, mature athletes often strive to maintain or improve their performance over time. Masters competitions are now a fixture in most team and individual sports previously thought to be the exclusive pursuit of youth.

The differential diagnosis for sports injuries of the hip in mature athletes is diverse and includes the same potential etiologies seen in their younger counterparts. The key consideration in this population is the potential presence of arthritis. As with other joints, an acute injury may lead to the discovery that the previously asymptomatic hip has pre-existing degenerative changes. The athlete, aware only of the acute injury and interested in quick return to participation, may find this revelation to be emotionally troubling and difficult to accept. An acute injury can also accelerate the onset of arthritic symptoms and lead to significant disability.

Treatment of the injured mature hip without arthritis largely proceeds as outlined elsewhere in this issue with an emphasis on physiologic instead of chronologic age. When arthritis is present, however, the patient and surgeon face difficult decisions when considering surgical options. This article examines the etiology of hip arthritis as well as nonoperative and operative considerations in this patient population.

## SPORTS AND HIP ARTHRITIS

It is well known that the prevalence of hip osteoarthritis increases with age.[1] A recent systematic review reported the mean radiographic prevalence of hip osteoarthritis to be 1.6% in patients 35 to 39 years of age, with a mean interval increase in prevalence of 1.2% every 5 years culminating in a mean prevalence of 14.0% at 85 years and older.[2]

Most authors agree that there is insufficient evidence to support a causal role for physical activity in precipitating hip osteoarthritis.[3,4] While athletes are known to be at an increased risk of osteoarthritis in the joints they use most, this is likely explained

The author has nothing to disclose.
Department of Orthopaedic Surgery, University of Virginia, PO Box 800159, Charlottesville, VA 22908-0159, USA
*E-mail address:* jab8hd@virginia.edu

Clin Sports Med 30 (2011) 453–462
doi:10.1016/j.csm.2010.12.011 **sportsmed.theclinics.com**
0278-5919/11/$ – see front matter 

by the risk of chronic and acute joint injury followed by post-traumatic degenerative changes.[3,5] One large prospective analysis of 16,961 patients found that high levels of physical activity (running 20 or more miles per week) were associated with osteoarthritis among men under age 50, although the study was limited in relying on self-reported data and did not assess occupational physical activity.[6] The literature contains numerous other studies with conflicting results, reporting either an increased risk[7] or no association between sporting activities and osteoarthritis of the hip.[8,9] Interpretation of these studies is limited by their retrospective designs, small numbers, and varying definitions of arthritis. In patients with normal joints and neuromuscular function, lifelong participation in sports with minimal joint impact and torsional loads likely presents minimal risk for the development of osteoarthritis.[10]

Increasing evidence suggests that structural factors play a role in the development of hip arthritis. Both hip dysplasia[11,12] and femoroacetabular impingement[13–15] have been associated with degenerative changes in the hip joint. In both cases, morphologic osseous abnormality is theorized to result in abnormal contact stresses and loading of the articular cartilage, accompanying soft tissue injuries (labral), and ultimately premature degeneration of the joint.[16] In dysplastic hips, reduced surface area for load transmission leads to increased contact stresses on the cartilage, whereas impingement results in bony abutment of the proximal femur and acetabulum with subsequent chondrolabral injury and cartilage degeneration.[15,17,18]

The rate at which degeneration develops in patients with femoroacetabular impingement or mild dysplasia is unknown. While some proponents have suggested that surgical intervention may preserve the hip joint and prevent or delay osteoarthritis,[14,19] there is no high-level evidence to confirm the prophylactic utility of hip arthroscopy in altering the natural history of these structural problems.

## NONOPERATIVE MANAGEMENT

Treatment of the injured hip in a mature athlete typically follows a stepwise progression beginning with over-the-counter analgesics and temporary restriction of activities. Resting the joint can decrease pain and swelling in the acute phase following injury. Physical therapy will not improve any underlying mechanical or structural problems and may exacerbate symptoms in patients with femoroacetabular impingement; extremes of motion and passive stretching should thus be avoided. Permanent activity and behavioral modification, including cessation of certain sporting activities that require supraphysiologic motion or high impact, should be considered in patients with clear underlying abnormal bony morphology consistent with femoroacetabular impingement.[15,20]

Intra-articular corticosteroid injection also may be beneficial in the mature athlete with degenerative changes in the hip joint. At least four randomized controlled trials exist that support transient relief of pain and improvement in function in the majority of patients with hip arthritis treated with intra-articular steroid injection compared with placebo.[21–24] Fairly consistent in these small studies is the observation of good pain relief and improved hip motion for approximately 1 month followed by rapid subsequent decline and no residual benefit past 3 months. The best clinical results are typically seen in patients with mild hip disease only; steroid injections have been reported as efficacious in 75% to 90% of patients with mild arthritis compared with only 9% to 20% of patients with severe arthritis.[23,25] Ultrasound data suggest that the steroid also may have a benefit in reducing synovitis.[26] An intra-articular hip injection thus appears to be best suited for transient reduction of pain in mature athletes with mild arthritis and may be useful depending upon the short-term goals of the patient.