

## **Femoroacetabular Impingement**

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The concept of femoroacetabular impingement was first introduced in 1975 by Dr. Stulberg who noted abnormalities in the femoral neck and acetabulum. Later studies by Dr. Demairis recognized subtle anatomic abnormalities in athletes with hip pain. Dr. Ganz furthered these findings by defining these structural abnormalities and helped orthopaedic surgeons understand the idea of femoroacetabular impingement.

The definition of femoroacetabular impingement is an abutment conflict between the bone of the femoral neck and that of the acetabulum. Typically, patients have a combination of Cam impingement (osseous prominence on the femoral neck) and Pincer impingement (over-coverage or abnormal morphology of the acetabulum), both of which are observable findings on radiographic examinations. As has been demonstrated in cadaveric studies, the labrum (cartilage around the acetabulum) anterosuperiorly is subject to high strain even in moderate amounts of flexion and extension. The aforementioned abnormalities can increase this strain and provide a mechanical explanation as to the cause of labral tears and cartilage injuries. The labrum serves as a shock absorber and allows proper joint lubrication. Recent studies have found an association between acetabular labral tears and the early onset of osteoarthritis. Thus, treatment of labral tears and femoroacetabular impingement is crucial for hip preservation. Additionally, histologic analysis has demonstrated nerve endings in the labrum, which in addition to the bony impingement and inflammation in the hip joint represents evidence explaining the pain that these patients experience.

The diagnosis of labral tears in the hip, once thought to be an uncommon injury, has been increasing in frequency because of improvements in diagnostic imaging and clinical examination. With the increased recognition of these pathological processes and the knowledge of the potential consequent hip degeneration, treatment is paramount to patient success with the goal of preventing or prolonging the need for joint replacement.

Open surgical dislocation has given way to the minimally invasive arthroscopic approach, with studies demonstrating similar clinical outcomes between the two techniques. However, the arthroscopic procedures have a much lower morbidity, can be performed on an outpatient basis, and are associated with a much quicker return to activities of daily living. The logistics of the hip joint make the procedure much more complex than shoulder and knee arthroscopy. The joint itself is in a deeper location

Outcome studies have demonstrated encouraging results after arthroscopic repair. Clohisy and McClure found that the majority of their patients had resolution of their symptoms by 1 year. McCarthy et al followed a cohort of 10 athletes with 80% excellent results at an average of 23.6 months follow up. Byrd et al had similar results that were maintained for 5 years post operative.