

# **Collision Detection Techniques in the Evaluation of Femoroacetabular Impingement**

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## **Abstract**

In the native hip joint, Femoroacetabular Impingement (Fai) is also recognized as a cause of hip arthritis. Correction of the underlying structural abnormality permits the patient to regain a painless functional range of motion. In cam type impingement where the femoral head is aspherical, recontouring of the femoral head neck junction restoring head sphericity has been shown to improve clinical function by means of both open and arthroscopic techniques. However, the less invasive techniques are more difficult in respect to accurately and reproducibly correcting the femoral head/neck deformity. More importantly, what represents a pathological head/neck deformity has not been fully delineate as well as the pathomechanisms of FAI which lead to joint deterioration.

The purpose of our study was to determine the feasibility of performing rapid collision detection technique of the native hip joint using a patient based ct data in order to evaluate FAI.