

Femoroacetabular Impingement (FAI)



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What is FAI?

Femoroacetabular impingement occurs when the ball at the end of the thigh bone (femur) has abnormal contact with the front of the socket (acetabulum) of the pelvic bone. It can be a result of a deformity of the top part of the femur (femoral head) — known as cam impingement — or from a deformity in the socket — known as pincer impingement. These deformities can also occur simultaneously.

What is it caused by?

FAI is caused by abnormal development of the bones of the hip joint, which results in the bones improperly impacting against each other, causing damage to the hip joint's cartilage (labrum).

Deformity of the thigh bone (cam impingement) occurs when the abnormally shaped femoral head and head-neck junction rubs against the hip socket during certain types of motion or prolonged sitting.

Deformity of the socket (pincer impingement) occurs when there is direct contact between the femoral head-neck junction and the rim of the socket. This happens when there is excessive coverage of the femoral head by the front of the socket.

FAI is commonly seen in athletes, as repeated stress on the hip joint can expedite damage to the joint's cartilage. FAI can also be caused by other pediatric hip disorders such as Legg-Calvé-Perthes disease, slipped capital femoral epiphysis (SCFE), or post-traumatic deformities.

Signs and symptoms

- Pain in the groin or hip due to torn labrum
- Pain caused by activity (such as sports) and/or prolonged sitting
- Difficulty flexing the hip
- Popping or clicking of the hip
- Stiffness in the groin or front of the thigh

How is it diagnosed?

A diagnosis of FAI should be confirmed by an orthopedic hip specialist. This diagnosis involves assessment of a patient history and a physical exam in order to rule out any other causes of hip pain, as well as imaging to confirm the diagnosis. The physical exam will determine if there is any pain with hip motion and/or a limited range of motion in your hip.

Your physician will also perform an impingement test, which recreates hip symptoms with motions of flexion, adduction, and internal rotation.

Imaging is necessary for proper diagnosis of FAI. Through a series of hip x-rays, your physician will look for signs of hip impingement, such as a misshapen hip socket and/or upper femur. A CT scan (or CAT scan) may also be performed, as well as an MRI. The CT scan allows the physician to see any mild hip deformities that don't show up on x-ray. An MRI of the hip can also help confirm an FAI diagnosis, and assess the stage of injury to the acetabular labrum and cartilage.

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