

Femoroacetabular Impingement (FAI)



Boston Children's Hospital
Child and Young Adult
Hip Preservation Program

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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?

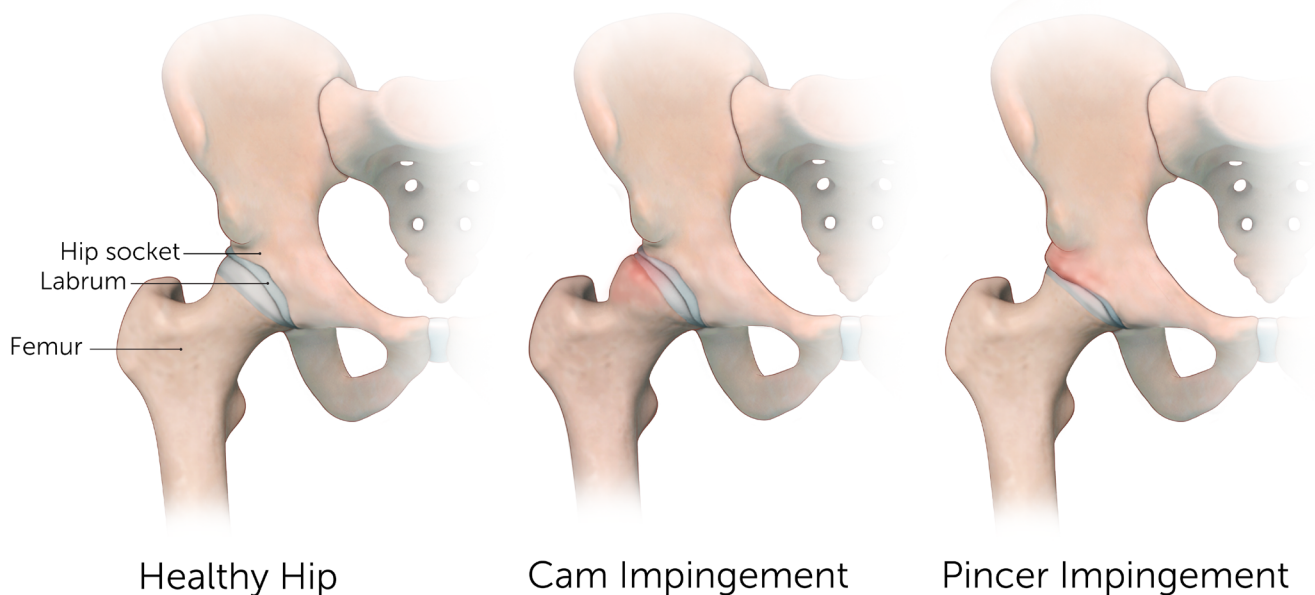
A diagnosis of FAI should be confirmed by an orthopedic hip specialist. This diagnosis involves assessment of a patient history and a physical exam in order to rule out any other causes of hip pain, as well as imaging to confirm the diagnosis. The physical exam will determine if there is any pain with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

The first stage of treatment your physician may recommend is typically physical therapy and activity modification (ceasing any activities that cause pain). If the pain does not go away after a period of rest and physical therapy, an intra-articular injection (shot inside the joint) with numbing medication and a steroid may be recommended. This injection will also help determine whether the pain is coming from inside the joint or from the surrounding muscle.

If pain continues after these initial treatments, your hip specialist may suggest surgical options. In surgical treatment, the femoral head and/or pelvic socket are corrected in order to prevent bone impingement and halt any further damage to the cartilage, and the labrum can be repaired. This type of surgery can range from minimally invasive arthroscopy to an open surgical dislocation, including a periacetabular osteotomy (PAO), in which cuts are made to the pelvis so the acetabulum can be repositioned.

Why choose Boston Children's Hospital?

The Child and Young Adult Hip Preservation Program at Boston Children's Hospital is at the forefront of research and innovation, which means our care providers offer the most advanced treatments available, personalized for you and your hip. Our specialists have pioneered both minimally invasive and open surgical techniques to help treat patients of all ages, and perform more PAOs than any other hospital in the country. No matter how minor or severe your FAI may be, we have the expertise and approach to best treat your condition.

Our expansive team of orthopedic hip specialists provide world-class care throughout each patient's journey, collaborating over both common and complex hip disorders to provide you with comprehensive care. Our goal is the same as yours: to help you get better so you can return to being healthy and pain-free.

Notes

Produced by the Child and Young Adult Hip Preservation Program in the Orthopedic Center at Boston Children's Hospital.

For more information or to request an appointment visit bostonchildrens.org/hip.

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