Hip Preservation Information

Dr. Sanjeev Bhatia, M.D.
Dear Patient,

Thank you for choosing Dr. Sanjeev Bhatia at Mercy Health-Cincinnati Sports Medicine & Orthopaedic Center to address your medical needs. We are honored to be able to help you throughout your journey. It is important to know that you'll have a great deal of support & guidance throughout this process. Your team of specialists includes Dr. Bhatia, the Mercy Health Orthopedics staff, and your Physical Therapists. Together, we will set realistic goals to get you to your desirable level of function. It is the mission of this team to work together with you to help you reach your goals.

We look forward to working with you and encourage you to play an active role in the process.

Sincerely,

[Signature]

Dr. Bhatia and our Mercy Health Orthopedic Team
IMPORTANT CONTACT PHONE NUMBERS

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The Hip joint is critical to optimum function with many everyday activities, including activities of daily living and sports. The hip is also critical to our body’s mobility and stability. The hip joints—along with their surrounding muscles, ligaments, and suction seal that is provided by the labrum—are intricately balanced but can be susceptible to wear and tear. When viewed as part of a spectrum, hip problems and disorders range from preclinical conditions, which are often precursors to significant symptoms of hip disease, as well as problems that can result in obvious degenerative disease of the hip. Although hip disease and its treatments are commonly associated with aging, the truth is that many hip disorders begin much earlier in life. Relatively common variations in hip anatomy—including excess bone growth and malformed sockets—can lead to premature wear and tear, even in young adults. New research demonstrates that effective and timely intervention of some hip conditions may slow or reverse their progression and help preserve the native joint.
The Hip Arthroscopy and Joint Preservation Center aims to provide patients from the Midwest region and beyond with a cutting edge, multidisciplinary approach involving injuries of the hip and knee. Using the latest in newly developed arthroscopic and open surgical techniques, newly developed cartilage technologies, and non-surgical rehab protocols and injections, the Center aims to provide young, active individuals with the best evidence-based non-arthroplasty treatment options for relieving hip and knee pain, delaying the progression of end stage arthritis, and returning individuals to sports and function. Additionally, the Center is actively engaged in research and education efforts to advance the understanding of hip and joint preservation, sports medicine, and orthopaedic wellness.
Hip Anatomy

Joint opened: lateral view

- Lunate (articular) surface of acetabulum
- Articular cartilage
- Greater trochanter
- Head of femur
- Neck of femur
- Intertrochanteric line
- Ligament of head of femur (cut)
- Anterior superior iliac spine
- Anterior inferior iliac spine
- Iliopubic eminence
- Acetabular labrum (fibrocartilaginous)
- Fat in acetabular fossa (covered by synovial membrane)
- Obturator artery
  - Anterior branch
  - Posterior branch
  - Acetabular branch
- Obturator membrane
- Ischial tuberosity
- Lesser trochanter
- Transverse acetabular ligament
• The labrum, because of its function in distributing weight-bearing forces, is susceptible to traumatic injury from shearing forces that occur with twisting, pivoting, and falling.
• Due to its nerve innervation, an isolated labral tear can result in pain.
• A majority of tears are located anterosuperiorly.
• Labral tears can cause micro-instability of the hip joint, leading to increased stresses between the femur and acetabulum.
• Instability and impingement can also lead to cartilage lesions and degeneration.
• Cam impingement occurs when the femoral head has an abnormally large radius, with a loss of the normal spherical junction between the femoral head and neck.
• “Cam” refers to the cam effect caused by a nonspherical or abnormal femoral head (ball) rotating inside a normal acetabulum (socket).³
• This may occur as a sequelae of childhood disorders such as slipped capital femoral epiphysis (SCFE), but most commonly is attributed to eccentric closure of the femoral head growth plate during adolescence.
• This will lead to abnormal contact between the femoral head and acetabulum, especially with combined flexion, adduction and internal rotation, causing shear force on the anterolateral edge of the acetabular articular surface.
• With repetitive motion, this eventually results in articular delamination and failure of the acetabular articular cartilage.
• CAM impingement has been recognized as a cause of labral tears and cartilage lesions.
• Cam impingement has approximately a 3-to-1 predilection for males and problems often
A Pincer lesion refers to an abnormal acetabulum with increased overcoverage. Pincer impingement is caused by an abnormally deep or retroverted socket that bumps against a normal “ball” (femoral head/neck). This is opposed to CAM impingement, in which an abnormal “ball” (femoral head/neck) contacts a normal socket (acetabulum).

- The overcoverage can be general (coxa profunda) or local (acetabular retroversion).
- Pincer lesions cause persistent abutment of the femoral head into the acetabulum and can be a cause of posteriorinferior cartilage lesions.
- This can occur from overgrowth of the anterior edge, or retroversion of the acetabulum, which is a condition in which the face of the acetabulum tilts slightly backward instead of its normal forward position.
- With hip flexion, the prominent rim of the acetabulum impinges the labrum against the femoral neck.
- This repetitive microtrauma leads to breakdown and failure of the acetabular labrum.
- Pincer impingement occurs just about equally in males and females and more commonly starts to cause symptoms in middle age.
Medical and Rehabilitation Definitions

- **Acetabulum**: hip socket
- **Anterior**: towards the front of the body
- **AROM**: “active range of motion” = movement is performed by patient
- **Closed Chain**: movement in which the end segment of the exercised limb is fixed to the ground. Ex. standing exercises, leg press
- **Concentric**: contraction of a muscle as it is shortening. Ex. “upward phase” of a biceps curl
- **Eccentric**: contraction of a muscle as it is lengthening. Ex. “lowering phase” of a biceps curl
- **FAI**: femoral acetabular impingement
- **Femur**: thigh bone
- **Gait**: walking pattern
- **Inflammation**: the body’s natural response to protect from infection and surgical trauma. Can cause swelling, heat, and pain.
- **Isometric**: contraction of a muscle without movement
- **Joint Mobs**: Joint mobilization is a type of passive movement of a skeletal joint. It is usually aimed at a 'target' synovial joint with the aim of decreasing joint stiffness or decreasing pain.
- **Labrum**: a fibrocartilaginous rim extending off the acetabulum to deepen the socket and provide a suctioning effect
- **Lateral**: further away from the body’s midline
- **Medial**: towards the body’s midline
- **Muscle Imbalances**: differences in strength or tightness in muscles on either side of the joint
- **Muscle Inhibition**: “shutting down” of a muscle usually due to pain or inflammation
- **Posterior**: towards the back of the body
- **PROM**: “passive range of motion” = patient does nothing, movement performed by someone else
- **Prone**: lying on your stomach
- **ROM**: range of motion
- **RPM**: revolutions per minute
- **Supine**: lying on your back
# Causes of Hip and Groin Pain

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<td>- Lateral or anterior snapping hip</td>
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<td>Increased motion and/or apprehension with long-axis femoral distraction</td>
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*Note: The cause of hip is best determined by the LOCATION of pain.*

- **Anterior Hip Pain** (ie. pain in the front of hip/groin): due to intra-articular (FAI, osteoarthritis, labral tear) vs. extra-articular (iliopsoas tendinitis, groin strain, hernia) pathology.
- **Posterior Hip/Buttock Pain:** most often referred from the spine or SI joints, and not the hip itself.
- **Lateral Hip Pain:** most often due to trochanteric bursitis or abductor (gluteus medius) tears.
Descriptions of Commonly Used Terms and Procedures

Labral repair: The labrum is reattached to the acetabulum with suture anchors to hold it in place.

Debridement: Removal of small frayed edges of the torn labrum by an arthroscopic shaver tool.

Osteoplasty: An osteoplasty is performed at the head-neck junction of the femur. During this procedure a motorized burr is used to shave down the bony abnormality and re-creates a “normal” shape of the femoral neck.

Rim Trimming: A rim trimming procedure is used to address the bony abnormality of the acetabulum (socket) of the hip using a motorized burr.

Microfracture: A microfracture technique is performed to address cartilage lesions on the acetabulum or on the femoral head. A pic (awl) is used to create bleeding of the bony surface where the cartilage is damaged. This blood forms a clot which matures into new cartilage. The clot is delicate and requires minimal weight-bearing and good mobility for proper healing.

Chondroplasty: Minimal cartilage damage is repaired using a motorized burr tool to shave off any frayed edges.

Capsular Plication: A plication is done to tighten a loose capsule. During a capsular plication the capsular tissue is pulled together and closed with sutures to hold the tissues together and adding stability to the joint.

Thermal Capsulorraphy: During a thermal capsulorraphy, a high temperature probe is moved across the tissue in a striped pattern causing shrinkage of the tissue, thus stabilizing the joint.

Ligamentum teres debridement: In patients with partial tearing of the ligamentum teres, frayed tissue is removed similar to the labral debridement.

Synovectomy: A synovectomy is performed in patients who exhibit significant inflammation of the lining of the joint. During this procedure a heat probe is used to remove the irritated tissue.

Iliotibial Band Release: The iliotibial band (ITB) is a thick band of tissue that runs from the hip to the knee along the outer side of the thigh. A release is done when the ITB is excessively tight, causing irritation (bursitis) to the outer aspect of the hip.

Labral Reconstruction: This procedure is performed when the labrum is small, of poor quality, or not repairable. A piece of fascia lata allograft or autograft is used to replace the damaged labrum. It is held in place with suture anchors along the acetabular rim.
References