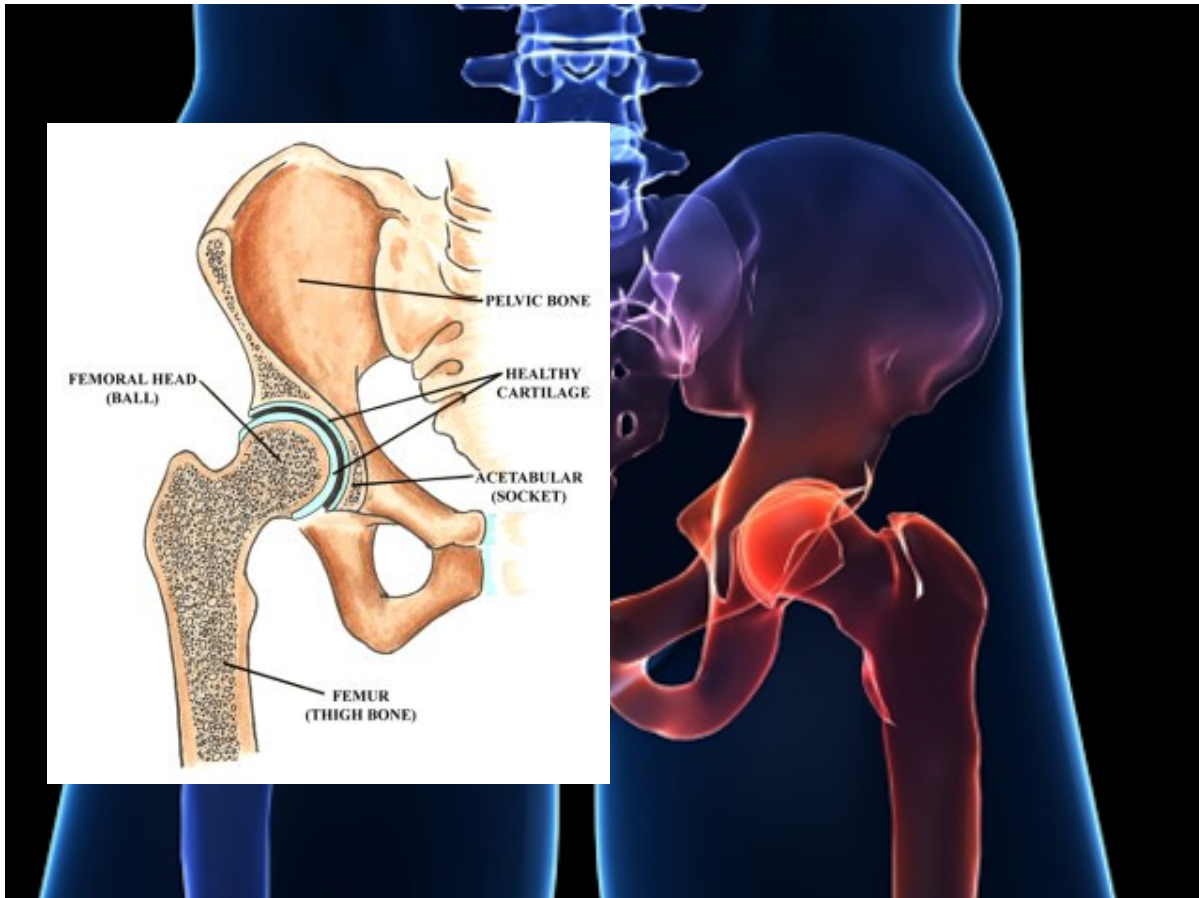


# Femoral Anterior Glide Syndrome: Definition, Assessment and Treatment

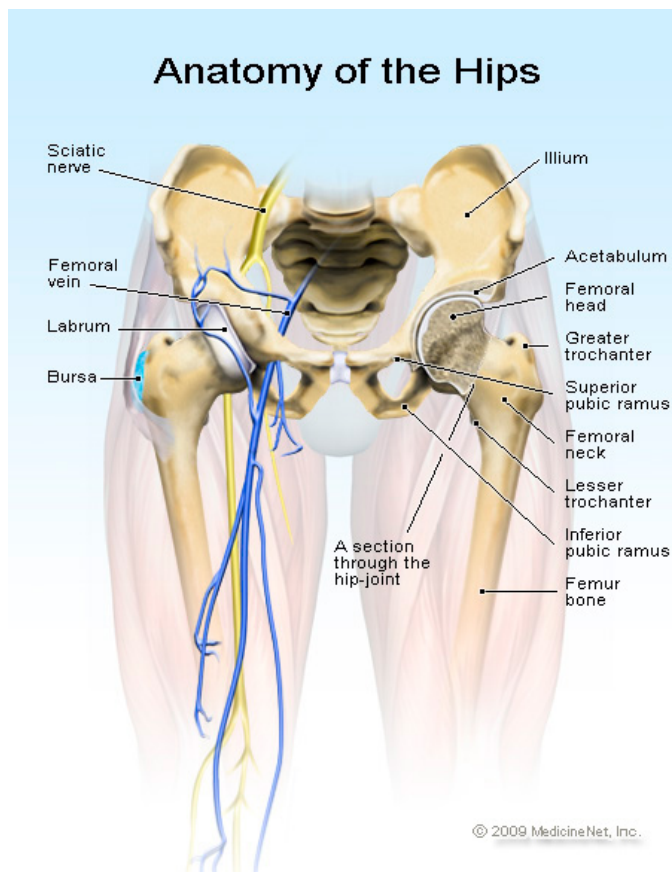


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## Basic Hip Joint Anatomy

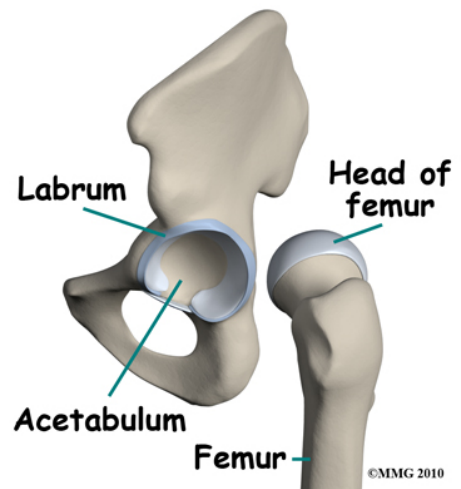


- The hip joint is rotational joint, composed of two bones, generally called a "ball and socket joint" that facilitates movement in almost all directions

- The "ball" is the round head of the femur bone (thigh bone), the largest, strongest bone in the body, and the main bone supporting the musculature of the quadricep muscle.

- The cup shaped "socket" is part of the pelvic bone, and is called the acetabulum.

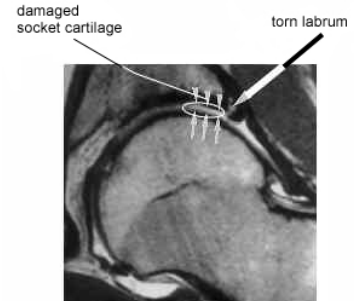
- The ball (**femur head**) is covered in a kind of cartilage (articular cartilage) that promotes movement by providing a cushioned, smooth surface when the bones move across one another.
- The socket (**acetabulum**) is surrounded by a kind of cartilage called the **labrum**. Forming a ring around the cup, the labrum acts like a suction cup to help seal the ball and cup together.



## What is Femoral Anterior Glide Syndrome?

- Although there are multiple sources for hip pain, Femoral Anterior Glide Syndrome (first named by physical therapist Dr. Shirley Sahrmann) is one of the most common, least diagnosed disorders.

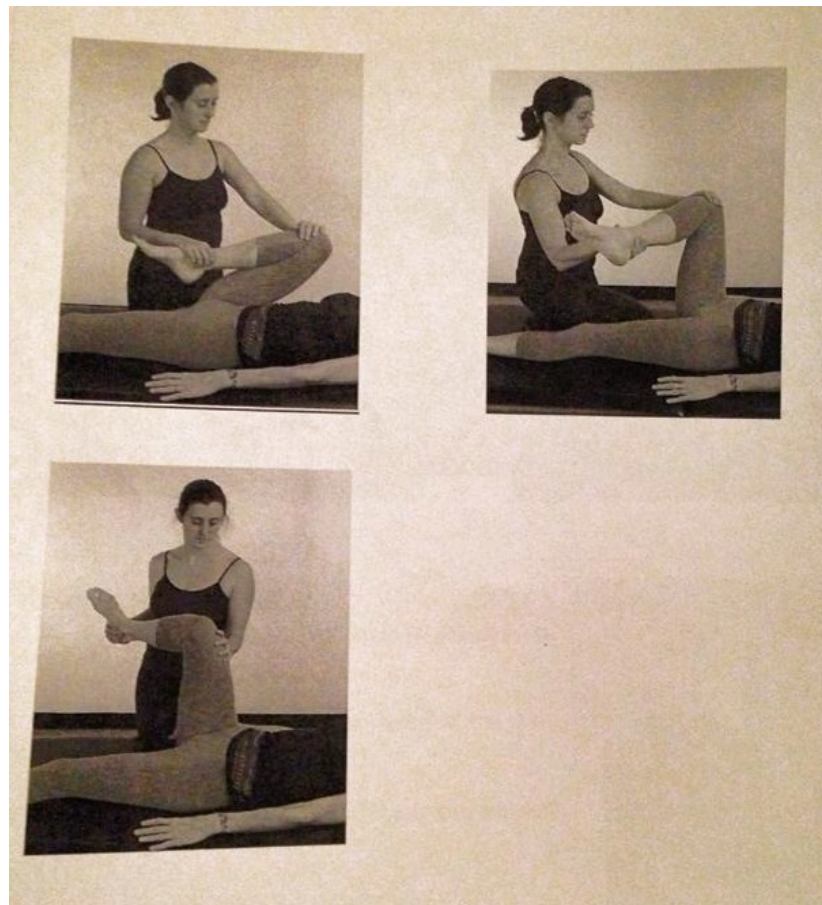
- Hip injury syndromes are commonly named for the direction of the movement associated with the pain. In the case of Femoral Anterior Glide Syndrome, the ball of the femur is excessively pressed against the anterior tissue of the pelvic joint capsule, i.e. the labrum, both as hip is flexed and extended.



- This can be exacerbated by a tight psoas pulling the femur forward in the acetabulum, or by a tight piriformis pushing the femur forward in the acetabulum.
- People with this compression of the hip will often also have either a tight psoas, tight piriformis or both.
  - In extreme cases, the labrum itself is torn. Because there is no vascular system within the joint, i.e. no blood flow, the body's natural healing mechanisms, assisted by blood flow, are unable to go to work.
- The syndrome occurs in those who engage in activities (i.e. running, dancing, martial arts and yoga) that encourage excessive hip extension, or hyperextension. Impingement can present at any time in life.
- The chronic nature of the injury and resulting pain may become first evident after prolonged sitting or walking, particularly up hill.
- Femoral Anterior Glide Syndrome is characterized by aching, extreme pain within the hip joint, often radiating into the side of the thigh and the buttocks.
  - While it often begins with a dull ache, as though the interior of the hip had been bruised, if left untreated impingement on the labrum will develop into a piercing pain that, in the long run, limits the mobility of the formerly hyper-mobile joint.
  - Consequently, someone suffering from this syndrome may develop very "tight hips," where there was prior extreme mobility.
    - *This can lead to frustration, and often doing what is the worst thing you can do--ignoring the pain and pushing further.*
- Left untreated, Femoral Anterior Glide Syndrome only worsens, and may promote further injury in collateral areas within the hip structure, and beyond.
  - Common collateral injuries include:
    - Iliopsoas tendonitis and iliopsoas bursitis
    - Knee, lower back, hamstring strains

### **How is Femoral Anterior Glide Syndrome Assessed?**

- In order to pin point damage area of hip, and to rule out other hip movement injury syndromes, hip should be examined in a methodical fashion.
  - Looking for an understanding of rotational abnormalities within ball-socket joint.
  - Hip flexion, adduction, and internal rotation will replicate common movements in which the individual may engage, and therefore also the pain experienced during anterior hip impingement on the labrum.
- In flexion (i.e. knee bent, pressed toward chest), the hip is progressively rotated from external (knee pressed away from body) to internal (knee pressed toward midline of body) rotation. (See following image.)<sup>1</sup>



- In this way, the area of injury along the labrum can be assessed.
- In some cases, medical imagery (x-ray, MRI) should be utilized to evaluate severity of tears or fraying of cartilage and labrum.

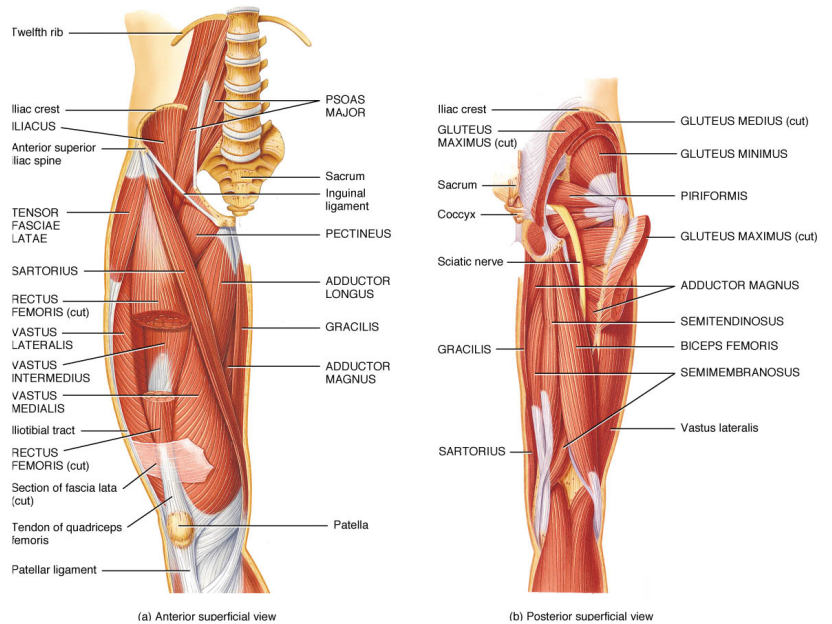
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<sup>1</sup> Image taken from Marlysa Sullivan's *Musculoskeletal Assessment*, 2012

**Treatment of Femoral Anterior Glide Syndrome**

- While some extreme cases of Femoral Anterior Glide Syndrome may require surgery, non-surgical treatment measures should always be considered first.
- Rest is essential. If the labrum is only bruised, and not torn, it can heal, so long as the impacting movement is limited, and surrounding muscle groups are simultaneously strengthened.
- Though inflammation is a sign of the body's natural healing mechanisms at work, prolonged stress on an area may result in chronic inflammation which can be more injurious than health-full.
  - An anti-inflammatory regimen, naturopathic, Ayurvedic, allopathic, or otherwise, may be utilized.
- Movement need not be fully limited -- indeed, a balance of strength and flexibility training is essential in the healing process.
  - While you can't necessarily fix a labrum tear non-surgically, you can fix the underlying mechanical cause of the injury, i.e. hyper-active movement and overactive muscle groups.
- Strengthening neighboring muscle groups that may have gone slack due to reliance on flexibility over strength will also be essential.
- In particular, may see weakness in the following areas:

- Short/ hyper-mobile Tensor Fasciae Latae (TFL)
- Weak Glute Max/ Med
- Weak/tight Piriformis and Psoas
- Overactive Hamstrings (hypermobile)
- Weak engagement of abdominal muscles and pelvic floor



- As such, exercises that strengthen these muscle groups, as well as the coordination between them, may be useful in the mitigation of injury.

## **Yogic Interventions: Asana as Therapy**

### ***Asana***

- Though asana may be the culprit, the *conscious practicing of asana is essential to the healing process.*
- Instead of "going deeper," *practitioner should be encouraged to work on engaging other aspects of the pose* (i.e. lifting pelvic floor rather than going deeper in forward bend).
  - It will be essential to begin reframing the asana practice as one of "being" rather than "doing" or "achieving."
- *Mental practice:*
  - Often, resistance to behavior modifications required by the healing process is more mental than physical.
    - The individual will have to "talk back" to the mind when it demands that practice continue as normal--modifications are essential to the healing process.
  - If practitioner is used to pushing hard in his or her asana practice, teacher/therapist can encourage the focused and heightened practice of the other limbs of ashtanga yoga during the healing process.
    - *Tapas* -- Can the practitioner practice discipline moving mindfully, patiently, rather than forcefully, rather than "going deeper"?
    - *Santosha* -- Can contentment with "what is" be practiced rather than suffering for what isn't?
    - *Ahimsa* -- Can the practitioner be non-violent against and non-judgmental about his or her own physical body?
    - *Satya* -- Can the practitioner be truthful about the state of his or her own physical body, so as to make an honest assessment of "what is" be the point of departure for the healing process?
  - Practitioner should explore how other aspects of the *Yamas* and *Niyamas* might serve him or her in the healing process.
- *Physical practice:*
  - *Focus on coordination between muscle groups*, i.e. relationship between gluteal maximus and psoas, TFL and gluteal medius, etc.
    - Mindful movement, far more than deep stretching, should be utilized.
  - *Focus on pelvic floor engagement.*
  - *In static asana*, will want to focus more on pelvic floor/ core engagement more than deep stretching.

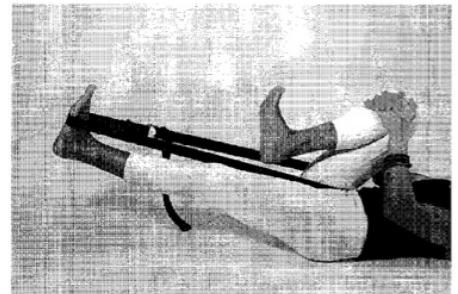
## Femoral Anterior Glide Syndrome: Yoga as Therapy

- For example, in low lunge (eka pada prasaranasana), rather than sinking into forward hip, pressing pelvis toward mat, will want to focus on active lift of pelvic floor
  - While depth may be sacrificed, strength and mindfulness will increase, promoting wiser engagement overall.
- *In movement and transitions*, will want to focus on engagement of core body.
  - For example, in transition between uttanasana and eka pada prasaranasana, will want to focus on lifting in pelvic floor and core engagement so practitioner does not simply sink into hips as knee hits the mat.
- Anywhere where client seems to rely more on flexibility, *promote thoughtful engagement of strength, instead*. This may mean backing off, not going as far as usual, which may frustrate client. See below for additional yogic tools that may be useful in the mitigation of such frustration.
- Will want to work closely with individual client to assess which asana/ movements work best, without strain.
  - Possible sequence:
    - Classical Surya Namaskar:
      - 3-5 rounds
    - Tadasana/ Uttanasana/ Padahasthasana:
      - Work on pelvic floor engagement
    - Trikonasana:
      - Right/ Left sides, maintain for 8-10 breaths working on stability and control
    - Virabhadrasana II:
      - Right/ Left sides, maintain 8-10 breaths
    - Parsvottanasana: Work the psoas in 2 ways, helps the front hip bend and hold the back hip steady strengthening the psoas
    - Garudasana:
      - Strength/ stretch the tensor fascia latae and gluteus medialis activate to rotate the femur inward
    - Supported Virabhadrasana III:
      - Glute max strengthening
    - Ardha Chandrasana:
      - Glute med strengthening
    - Bicycle movement/ Twisting sit ups: Engage the oblique and transverse abdominals, working on stabilizers of the core 10x each side
    - Bujanghasana breathing:
      - Strengthen middle and lower trapezius, rhomboids, transverse abdominals
    - Adho Mukha Svanasana
    - Vashistasana (modified or full)
      - Right and Left sides, for TFL lengthening and strengthening, as well as core strengthening
    - Table top leg lifting:
      - Hamstring, piriformis strengthening/ stretching



## Femoral Anterior Glide Syndrome: Yoga as Therapy

- Salabhasana leg lifting
    - Core, hamstring, piriformis strengthening/ stretching
  - Eka pada capotasana
    - Psoas stretching, pelvic floor engagement
  - Setubandasana breathing series
  - Adho Mukha Virasana:
    - Full release to mat while still maintaining focus on lift of pelvic floor
  - Saavasana
- *Important to note that this injury may often masquerade as weak abdominal engagement. This is because injury to the hip flexor region may severely challenge system-wide engagement in such poses as naavasana (boat pose), as well as any pose that requires the lifting and extending of the leg.*
- *Intensive practice of movements that require engagement of the hip flexor region should be also avoided during the healing process, though core work should not be sacrificed.*
- *Rather, less injurious core strengthening exercises, such as plank (on palms or forearms), vashistasana (modified or full) should be adopted. As always, each individual should work to their personal comfort level.*
- There are, additionally, passive stretches that individuals can do, either with the aid of a yoga therapist, or on their own, that may help mitigate these issues.
- Strap work to relieve Anterior Femoral Glide Syndrome:
    - Make a loop with the strap, starting with the right leg bent and foot flat on the floor the strap goes around the bent thigh, the left foot then presses against the strap to relieve pressure in the hip, hold for a 5 breaths and repeat 3 times. (See pictures for details<sup>2</sup>).



<sup>2</sup> Image taken from Marlysa Sullivan's *Musculoskeletal Assessment*, 2012

### **Additional Yogic Interventions**

#### ***Bandas***

- Mula Banda - engagement of pelvic floor. Conscious core engagement.

#### ***Pranayama***

- Focus on cooling, meditative pranayamas like shitali, calming breathing, and So Hum breathing.

#### ***Meditation***

- Focus on tuning into present moment, getting comfortable with "what is," becoming witness to sensation, so that in asana practice can find natural edge without pushing too far.

**Resources**

Hertling, Darlene & Kessler, Randolph. *Management of Common Musculoskeletal Disorders: Physical Therapy Principles*.

<http://fitnesspainfree.com/why-do-my-hips-hurt-when-i-squat-femoral-acetabular-impingement-part-3/>

<http://walkbyfaithhypermobilityfai.blogspot.in/2012/11/femoral-glide-syndrome-anterior-or.html>

<http://www.nwata.org/storage/2012-meeting-presentations/Hip%20Syndromes%20-%20McVey.pdf>

<http://www.ericcressey.com/newsletter150html>