

Hip Mobility Deficits

ICD-9-CM codes: 843.1 Sprain of the ischiocapsular ligament

ICF codes: Activities and Participation Domain codes:

d4500 Walking short distances (Walking for less than a kilometer, such as walking around rooms or hall ways, within a building or for short distances outside.)

d4500 Walking long distances (Walking for more than a kilometer, such as across a village or town, between villages or across open areas.)

d4154 Maintaining a standing position (Staying in a standing position for some time as required, such as when standing in a queue.)

Body Structure code: **s75001** Hip joint

Body Functions code: **b7100** Mobility of a single joint

Common Historical Findings

Ache in groin/medial thigh after activity – especially after prolonged weight bearing
Progresses to stiffness

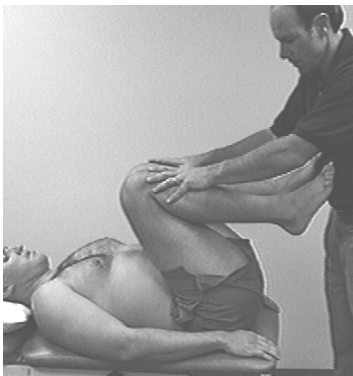
Common Impairment Findings - Related to the Reported Activity Limitation or Participation Restrictions:

Norms

Motion limitations of extension:	20°
internal rotation:	40°
abduction:	40°

Pain at end range - one motion is worse than others and reproduces symptoms

Physical Examination Procedures:



Hip Extension ROM
Starting Point

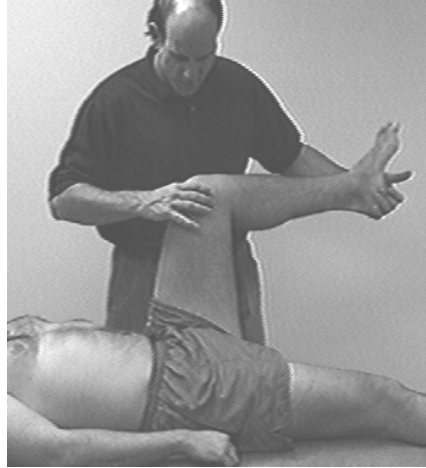


Hip Extension ROM
Measuring Point

Performance Cues:

Flex both hips and posteriorly rotate pelvis to the point where lumbar spine is flush against the table

Lower the involved femur - keeping it in 0° abduction - determine hip extension ROM



Hip Internal Rotation ROM

Performance Cues:

Flex to 90° - maintain

Maintain 0° abduction/adduction

Internally rotate femur to barrier - measure along line of tibia



Hip Abduction ROM

Performance Cues:

Abduct femur until pelvis begins to move

Measure angle of both ASIS's and abducted femur

Hip Mobility Deficits: Description, Etiology, Stages, and Intervention Strategies

The below description is consistent with descriptions of clinical patterns associated with the vernacular term “**Hip Capsulitis.**” There is not an ICD-9 code for a category representing a clinical pattern suggesting “hip capsulitis” or “hip adhesive capsulitis.” The ICD-9 category is most consistent with this pattern is probably 843.1 “sprain of the ischiocapsular ligament.” However, the hip mobility deficits are likely the sequelle of inflammation induced capsular fibrosis following a hip capsular or “ischiocapsular” sprain.

Description: Hip capsulitis, also known as degenerative joint disease (DJD), osteoarthritis (OA), or “wear and tear” arthritis, is the most common type of arthritis and a leading cause of disability worldwide. The incidence of OA increases with age and OA Hip, along with OA of the knee, affects the ability to walk and climb stairs more than any other disease. It is a slow degeneration of joint cartilage, with possible inflammation, pain, muscle weakness, or even loosening of the ligaments of the hip. The normal hip joint has articular cartilage that provides a smooth and cushioned surface between bones. With DJD, the smooth surface becomes rough and pitted. In advanced stages, the smooth surface may wear away completely and the synovium of the joint may be inflamed.

Etiology: Etiology: It is believed that OA results from a combination of genetic abnormalities and joint injuries. Joint injuries may be associated with repetitive manual labor or with repetitive sports, such as ballet. DJD of the hip usually begins gradually, because it normally takes years for the cartilage to become noticeably damaged. Initially, pain is felt at the end of the day. As the disease progresses, pain is commonly felt during the day, especially after exercise or weight bearing activities. Pain commonly subsides with rest, but can later progress to waking the patient at night. Pain is generally felt at the anterior hip, groin, and trochanteric area. The symptoms often progress to significantly deteriorate the quality of life, which may lead to the decision to have a total hip replacement.

Until the 1980s, OA was considered to be primarily a degenerative disorder and a natural occurrence of “wear and tear” on joints as a result of aging. Research evidence is now changing this view, with the most crucial and fundamental change being the shift from thinking of OA as a passive, degenerative disorder for which little can be done to the realization that OA is driven by an active disease process of the joint that can be modified by both mechanical and biochemical (drug) interventions.

Acute Stage / Severe Condition: Physical Examinations Findings (Key Impairments)

ICF Body Functions codes: **b7100.3** SEVERE impairments of mobility of a single joint

- Loss of mobility at community level due to pain with ambulation
- May exhibit a Trendelenburg or gluteus medius compensated gait and may use a cane to decrease force on hip
- Difficulty with taking off shoes, socks, and pants
- Considerable hip flexion, abduction, extension, and internal rotation ROM limitations. Restriction in internal rotation has been shown to be the most predictive sign of radiographic OA, and, when present, can factor into decisions regarding the need for radiography
- Weak and painful gluteus medius and tensor fascia lata

Sub Acute / Moderate Condition: Physical Examinations Findings (Key Impairments)

ICF Body Functions codes: b7100.2 MODERATE impairments of mobility of a single joint

As above with the following differences:

- Antalgic gait with shortened stance time of the involved extremity
- Muscle atrophy secondary to disuse associated with pain
- Moderate hip flexion, abduction, and internal rotation ROM limitations
- Gait deviations (e.g., compensated gluteus medius gait) associated with the pain and motor control deficits

Settled Stage / Mild Condition: Physical Examinations Findings (Key Impairments)

ICF Body Functions codes: b7100.1 MILD impairments of mobility of a single joint

As above, with the following differences:

- Morning stiffness or stiffness after inactivity
- Crepitus with active motion
- Pain in the joint after unaccustomed use
- Minimal interference in activities of daily living secondary to joint pain

Intervention Approaches / Strategies

Acute Stage / Severe Condition

Goals: Maximize tissue and joint health – optimize circulation to the hip’s articular cartilage
Decrease pain and inflammation

- Manual Therapy
 - Soft tissue mobilization, joint mobilization and manual stretching to improve hip capsule mobility
 - Remember that it is the tight capsule in a patient with OA at the hip is a primary source of pain and that in the patient with significant pain, the hip joint is more likely to be more “irritable.” Thus, progression of the mobilization should proceed slowly and response to treatment monitored closely.
 - Mobilizations with movement – emphasizing painfree active and passive mobility are manual therapy procedures to consider in this stage
- Therapeutic Exercises
 - Stretching exercises to maintain/improve on gains made with manual procedures, i.e., stretching to increase internal rotation, extension and flexion
 - Strengthening exercises to hip muscles – especially for the hip abductors and hip extensors

- Physical Agents
 - Ice for 20-30 minutes when joint inflamed; heating pad when not
 - Ultrasound for deep heating effect when not inflamed
- Pain Management
 - TENS
 - Corticosteroid (steroid) injections might be necessary. A total hip replacement might be required if conservative (physical therapy) management is not sufficient to control pain and maintain functional independence.
- Re-injury Prevention Instruction
 - Single point cane on side of unaffected limb to lessen load on hip by 60 percent and reduced pain with ambulation.
 - Avoid low chairs, sleeping on the affected side, and bending forward at the hip
 - The patient may benefit from special adaptations in shoe fasteners and devices to help put on and take off shoes and socks

Sub-Acute Stage / Moderate Condition

Goals: Improve hip mobility and stability
 Prevent re-injury to the joint cartilage or capsule
 Restore strength of the muscles around hip

- Manual Therapy
 - Same as above.
 - Proprioceptive neuromuscular facilitation (PNF) techniques – facilitating painfree mobility
- Therapeutic Exercises
 - Progress home exercise program (HEP), using concentric and eccentric exercises for strengthening as tolerated
 - Stretching exercises and general conditioning exercises, such as Yoga and Tai Chi, that focus on balance and flexibility
 - General conditioning exercises, such as cycling, walking, swimming and exercising in the water, are highly recommended. (Jogging and long distance walking be abandoned in favor of non-weight-bearing exercises if they are painful or produce post-exercise pain or stiffness)
 - General conditioning and diet changes will allow for slower deterioration of cartilage – especially if weight loss is achieved
- Physical Agents/ Pain Management
 - Same as above.
 - Medications include acetaminophen, NSAIDs, or COX–2 inhibitors to reduce joint inflammation and/or pain.

Settled Stage / Mild Condition

Goals: Increase pain-free activity tolerance

Patient education on condition and preventative care

Same as listed above, except

- Therapeutic Exercises
 - Develop a home exercise program (HEP) encompassing stretching, strengthening and aerobic exercises (avoiding high-impact sports)
 - Start or continue with general conditioning activities such as Yoga, Tai Chi and swimming
- Physical Agents
 - Educate on the use of ice and heat as listed above.
- Pain management
 - Acetaminophen (as recommended by the College of American Rheumatology)
 - Exercise to reduce pain and stiffness at this stage, especially morning pain
- Re-injury Prevention Instruction
 - Educate the patient about his or her condition and to avoid symptom producing weight bearing recreational activities or job tasks
 - Teach general body mechanics and proper posture to prevent further deterioration of articular cartilage
 - Body weight reduction, load-carrying modifications, and assistive device use

Intervention for High Performance / High Demand Functioning in Workers or Athletes

Goal: Optimal functioning at desired work or leisure activities

- Work with patient to select appropriate leisure activities that will not speed up the degenerative process of the hip cartilage
- Perform an ergonomic consult at the patient's job (if possible), or simulate the work environment to recommend joint conservation strategies

Selected References

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Manual Therapy for “Hip Capsulitis”

<u>ROM Examination:</u>	Hip Extension:	1 joint muscles and capsule 2 joint muscles
	Hip Flexion:	1 joint muscles and capsule 2 joint muscles and nerves (SLR)
	Hip Internal Rotation:	at 90 degrees of hip flexion at 0 degrees of hip flexion
	Hip External Rotation:	at 90 degrees of hip flexion at 0 degrees of hip flexion
	Hip Adduction	
<u>Intervention:</u>	Soft Tissue Mobilization:	Iliacus (hug knee, fingertips) Psoas (same side, flat fingers) Post Gluteus Medius (sidelying, elbow) Gluteus Max, Quadratus Femoris, Piriformis (sidelying, knuckles)
	Joint Mobilization:	Anterior Glide w/ strap assistance Distraction via strap w/ rotation MWM w/ flexion MWM
	Contract/Relax Stretch:	Iliacus (Thomas Test position) Medial Rotation w/ Hip at 90 degrees (supine) Lateral Hamstrings (using PNF pattern) Medial Hamstrings (using PNF pattern)



Iliacus



Psoas



Gluteus Maximus/Medius



Hip External Rotators

Impairment: Limited Hip Extension
Limited Femoral Anterior Glide



Femoral Anterior Glide

Cues: Position patient so that his/her ASIS's are in contact with the table - with the femoral head/acetabulum distal to the edge of the table
Stand medial to the involved thigh
Use a strap around your 1st rib area and around the distal one-third of the patient's thigh strap
Position strap so that sidebending of your trunk toward the hip slightly increases the patient's hip extension
"Hug" the patient's tibia and ankle with one hand and forearm
Anteriorly glide the proximal femur with the other hand using a sidebend of your trunk

The following reference provides additional information regarding this procedure:
Freddy Kaltenborn PT: Manual Mobilization of the Extremity Joints, p. 181, 1989

Impairment: Limited and Painful Hip Internal Rotation
(at 90 degrees of hip flexion)



Hip Rotation MWM

Cues: Stabilize the pelvis with one hand (stabilize the elbow of this hand against your groin)
“Hug” the involved thigh and leg with the other arm and thorax
Laterally glide the femur using a belt
Sustain the lateral glide while the patient’s femur is actively and passively internally rotated – the passive rotation and overpressure is a result of the therapist’s trunk rotation
Alter the amplitude and direction of the lateral glide in an attempt to provide a deep, tolerable hip “stretch”

The following reference provides additional information regarding this procedure:
Brian Mulligan MNZSP, DipMT: Manual Therapy, p. 103-104, 1995