

# **AAOS Clinical Guideline on Sub-Acute (Non-Traumatic) Hip Pain in Adults (>50 Years of Age) Support Document**

## **OVERVIEW**

### Goals & Rationale

This clinical guideline has been created to improve patient care by outlining the appropriate information gathering and decision making processes involved in managing and diagnosing sub-acute hip pain in adults over 50 years of age. Musculoskeletal care is provided in many different settings by many different providers. This guideline has been created as an educational tool to guide qualified physicians through a series of diagnostic and treatment decisions in an effort to improve the quality and efficiency of care.

This guideline should not be construed as including all proper methods of care or excluding methods of care reasonably directed to obtaining the same results. The ultimate judgment regarding any specific procedure or treatment must be made by the treating physician after a full assessment of all circumstances presented by a patient, including the needs and resources of a particular locality or institution.

### Scope & Organization

This document addresses the diagnosis and treatment of sub-acute hip pain in adults over the age of fifty, not arising from trauma, infection, or tumor. Sub-acute hip pain can be acquired from overuse, or athletic activity or can be the first sign of a more chronic underlying condition such as avascular necrosis, inflammatory or degenerative arthritis.

This guideline is intended to address issues faced by first contact physicians only, and provide information on diagnosis and treatment through the patient's first three months of symptoms. This guideline does not address all possible conditions associated with sub-acute hip pain, only those that account for the majority of initial visits to a physician. The guideline provides the user with information used during the initial assessment of the patient, through several critical exclusionary diagnoses, and then on to the determination of a differential diagnosis. The patient presenting to any physician with hip pain should be evaluated to exclude the presence of the following critical exclusionary diagnoses: including neurogenic claudication, spinal stenosis, root claudication, herniated disc, vascular claudication, metastatic disease, fracture, stress fracture, Paget's, and developmental abnormalities. The guideline addresses the following conditions: groin/muscle strain, primary and secondary osteoarthritis, inflammatory arthritis, avascular necrosis, trochanteric bursitis, and meralgia paresthetica. Once a differential diagnosis is reached, the user continues on to a flowchart specific to that diagnosis. Each diagnosis-specific flowchart guides the

user through the initial treatment and possible modified treatment. The flowcharts end where referral to a musculoskeletal specialist is recommended.

### Methodology

Revision Panel: Brian F. Kavanagh, MD, Chair; Jay Lieberman, MD; Kevin Garvin, MD; James Harkess, MD. Original Panel: Robert Poss, MD, Chair; Charles R. Clark, MD; Richard Johnston, MD; John Callaghan, MD; Daniel Berry, MD; Cecil Rorabeck, MD; Matthew Liang, MD; Howard Fuchs, MD; Joseph Zuckerman, MD.

*Process Overview:* The guideline was originally developed by a multi-professional panel led by the American Academy of Orthopaedic Surgeons Task Force on Clinical Algorithms in cooperation with the AAOS Committee on Clinical Policies, the American Association of Neurological Surgeons, the American College of Physical Medicine and Rehabilitation, the American College of Rheumatology, as well as individuals in other medical specialties including family practice. The work group, with the assistance of the AAOS and various private and academic medical centers, completed a review of the relevant literature. The work group then participated in a series of meetings in which information from the literature was extracted and transformed into draft “decision trees.” Information from the literature was supplemented by the consensus opinion of the work group when necessary. Multiple iterations of written review were then conducted by the participating individuals. Modifications, when supported by references from the literature were then incorporated by the work group chairman.

The work group, with the help of Value Health Sciences, performed a new literature search, reviewed and graded articles, incorporating information into the revised guideline as appropriate. Information from the literature was supplemented by consensus. The update of the guideline was completed by the AAOS work group. The work group members completed an objective evaluation of the 1996 guideline. These evaluations assisted the work group in focusing on areas of the guideline that needed expansion or revision.

The revised guideline was reviewed and approved by various groups within the AAOS including the Evidence-Based Practice Committee, Council on Research and Scientific Affairs, and Board of Directors.

In developing and revising this guideline the original task force and the work group made every effort to be consistent with the American Medical Association’s Attribute of Practice Parameters. In brief, the guideline was developed by a physician’s organization with scientific and clinical expertise and it is based on a reliable methodology that integrates science and consensus. It is comprehensive and specific, is based on current information, and will be widely disseminated.

*Evaluation of Existing Guidelines:* A search of MEDLINE, the National Guidelines Clearinghouse and the AMA's Clinical Practice Guidelines Directory (1999) was performed. No relevant guidelines were located.

*Literature Review:* A search of MEDLINE was performed in order to update the literature used to develop the original guideline. English language journals were searched from 1988 to 2001, human studies of adults over 19 years of age were included. Of the abstracts generated by the search 35 articles were graded by the work group and included in the bibliography.

*Weighing the Evidence:* All literature cited in the bibliography were reviewed and evaluated for quality according to the following categories:

- Type I        Meta-analysis of multiple, well-designed controlled studies; or high-power randomized, controlled clinical trial.
- Type II       Well-designed experimental study; or low-power randomized, controlled clinical trial.
- Type III      Well-designed, non-experimental studies such as nonrandomized, controlled single-group, pre-post, cohort, time, or matched case-control series.
- Type IV      Well-designed, non-experimental studies, such as comparative and correlational descriptive and case studies.
- Type V       Case reports and clinical examples

*Consensus/opinion as it is used in bibliography:* Articles representing expert consensus and not meeting the rigid I – V measurement are noted to represent consensus/opinion

*Consensus Development:* The work group participated in a series of conference calls and meetings in which information from the literature search was extracted and incorporated into the original algorithm. Information from the literature was supplemented by the consensus opinion of the work group when necessary. Multiple iterations of the guideline were then completed and reviewed by work group members. Modifications (when supported by references from the literature) were then incorporated by the work group chairman.

***Strength of Recommendation:*** The strength of the guideline recommendations for or against an intervention was graded as follows:

- A** Type I evidence or consistent findings from multiple studies of types II, III, or IV
- B** Types II, III, or IV evidence and findings are generally consistent
- C** Types II, III, or IV evidence, but findings are inconsistent
- D** Little or no systematic empirical evidence

*Revision Plans:* The guideline will be reviewed in 2007.

Definition of Terms:

**Musculoskeletal Specialist:** Any licensed medical doctor who has completed a resident training program focused on the management of musculoskeletal conditions, including but not limited to orthopaedists, physiatrists and rheumatologists.

## DIFFERENTIAL DIAGNOSES

### Groin/Muscle Strain

#### *Definition of the Problem and Diagnosis*

Sub-acute groin or muscle strain encompasses a variety of soft tissue causes of hip pain. These include strains of the iliopsoas and rectus femoris muscles and the internal or external rotators, adductors and abductors of the hip; hip pointers (muscle origin avulsions or tears); hip capsule strains. These can be differentiated by location of symptoms based on anatomic locations and functions of the muscle involved. Pain posteriorly with rotational stretch or resisted action of the external rotators may be piriformis muscle strain. Pain anteriorly increased with hip extension and then knee flexion may be a rectus femoris injury. Groin pain with internal or external rotation may represent a capsular inflammation. Groin pain with resisted straight leg raising or resisted hip flexion may be an iliopsoas strain or tendonitis. Consideration should be given to a diagnosis of "sportsman's hernia."

#### *Recommendations*

For those patients presenting to the first contact physician with hip pain, those with incapacitating instability, deformity, or pain should be referred immediately to a musculoskeletal specialist. For the remainder, initial treatment of all these conditions involves rest, NSAIDS, and stretching (physical therapy) with a graduated return to exercise or sport (**"B" recommendation**). Expected response can be slow depending on severity of injury and compliance with treatment regimen. A careful stretching and strengthening program before return to exercise or sport activity is important to avoid re-injury. Perpetuation of symptoms should result in referral to a musculoskeletal specialist.

#### *Alternative Approaches*

None recommended.

### Primary and Secondary Osteoarthritis

#### *Definition of the Problem and Diagnosis*

Osteoarthritis of the hip can present initially with sub-acute pain in the groin (or deep in the buttock or laterally around the hip). It should be exacerbated by activity. Typically it is present at rest only in more advanced cases. Primary osteoarthritis is basically wear and tear or degenerative arthritis. Secondary osteoarthritis is degenerative arthritis caused by accelerated wear and tear due to some underlying condition. Both primary and secondary OA should have similar symptoms and treatments although radiographs should reveal the underlying condition with secondary arthritis. Examination should reveal pain with extremes of range of motion especially internal rotation, and loss of motion is seen with increasing severity of disease.

### *Recommendations*

For those patients presenting to the first contact physician with hip pain, those with incapacitating instability, deformity, or pain should be referred immediately to a musculoskeletal specialist. For the remainder, initial treatment consists of heat, weight loss, low impact activity, NSAIDS, cane, and home exercise instruction by physical therapist (**“B” Recommendation**). Acute flare of hip arthritis may require a period of rest to help alleviate symptoms prior to the institution of low impact activity. Maintenance of aerobic activity has been recommended (**“D” Recommendation**). Perpetuation of symptoms should result in referral to a musculoskeletal specialist.

### *Clinical Outcomes*

Symptoms should abate with treatment. Increased severity of disease may be a reason for lack of response to therapy.

### *Alternative Approaches*

Over the counter pain medication can be used.

## Inflammatory Arthritis

### *Definition of the Problem and Diagnosis*

Inflammatory arthritis of the hip may present as sub-acute hip pain. History of other joint symptoms, pain at rest at an earlier stage of degeneration as seen on radiographs, and pain with hip rotation may help in the diagnosis. Confirmation with positive laboratory studies (CBC, ESR, ANA, RF) is indicated.

Examination will reveal pain with hip joint motion and loss of motion in more advanced cases or with significant synovitis. FABER test and resisted straight leg lift will cause pain in the groin. Radiographs may reveal symmetric joint space narrowing.

### *Recommendations*

For those patients presenting to the first contact physician with hip pain, those with incapacitating instability, deformity, or pain should be referred immediately to a musculoskeletal specialist. For the remainder, initial treatment for Inflammatory Arthritis involves NSAIDS and other anti-inflammatory medications, and a referral should be made for a rheumatologic work-up (**“B” recommendation**).

### *Clinical Outcomes*

Symptomatic improvement is expected. Failure to respond should indicate the need for referral to a rheumatologist.

### *Alternative Approaches*

Immediate referral to rheumatologist.

## Avascular Necrosis

### *Definition of the Problem and Diagnosis*

Avascular Necrosis is caused by increased intra-osseous pressure in the femoral head leading to necrosis of a segment of bone. Pain can be severe and unrelenting, both with activity and at rest. Examination may not be positive initially although there is generally pain with internal rotation of the hip. There may be a positive history for alcohol or steroid use. MRI can be positive before the radiographs show the condition.

### *Recommendations*

Non-weightbearing with crutches has given temporary pain relief (**“B” recommendation**). Immediate referral to a musculoskeletal specialist is warranted.

### *Clinical Outcomes*

Early pain relief will likely ultimately be followed by the need for surgery in the future. Referral to a musculoskeletal specialist is warranted. Treatment with core decompression of the femoral head has been controversial (**“C” recommendation**). With femoral head collapse, there will be increased pain, secondary osteoarthritis, and prosthetic hip replacement is generally required.

### *Alternative Approaches*

None indicated.

## Trochanteric Bursitis

### *Definition of the Problem and Diagnosis*

Trochanteric bursitis is an acute or chronic inflammation of the greater trochanteric bursa and can be associated with insertional tendonitis of the gluteus medius and/or minimus tendons. Lateral hip pain and tenderness are characteristic with pain focused over the greater trochanter. This condition can be associated with tightness of the iliotibial band. Patients with trochanteric bursitis typically cannot sleep on the affected side.

Examination should reveal localized tenderness and radiographs should not reveal significant hip pathology although some degree of osteoarthritis may be seen occasionally.

### *Recommendations*

For those patients presenting to the first contact physician with hip pain, those with incapacitating instability, deformity, or pain should be referred immediately to a musculoskeletal specialist. For the remainder, initial treatment can involve NSAIDS, heat, and physical therapy (including local modalities such as heat, ultrasound, and iontophoresis, and stretching and strengthening) (**“B” recommendation**). Failure to respond may indicate need for local cortisone injection (**B recommendation**).

### *Clinical Outcomes*

Resolution of symptoms should occur with one or a combination of the above treatments. Failure to respond may indicate other causes (underlying hip arthritis, radiculopathy, or gluteus medius tendonopathy). Failure to respond to initial treatment warrants a referral to a musculoskeletal specialist.

### *Alternative Approaches*

Referral to a musculoskeletal specialist for consideration of ITB release and surgical removal of the bursa (**“C” recommendation**).

### Meralgia Paresthetica

#### *Definition of the Problem and Diagnosis*

Meralgia Paresthetica is a condition characterized by pain and often numbness or paresthesias along the distribution of the lateral femoral cutaneous nerve (lateral hip and proximal-lateral thigh). It is caused by pressure on the nerve as it crosses the area of the Anterior Superior Iliac Spine (ASIS) on the brim of the pelvis. It can be aggravated by tight belts or clothing, obesity, or prolonged sitting in a forward leaning position. It has been described in later stages of pregnancy. Electro-diagnosis with somato-sensory evoked potentials may be possible. Examination should demonstrate local tenderness at the ASIS or pain reproduction with sustained local pressure over the ASIS.

#### *Recommendations*

For those patients presenting to the first contact physician with hip pain, those with incapacitating instability, deformity, or pain should be referred immediately to a musculoskeletal specialist. For the remainder, initial treatment involves elimination of the cause of external pressure (**“B” recommendation**), local injection of steroid or local anesthetic (**“B” recommendation**), or topical lidocaine patch for local symptom relief (**“B” recommendation**).

### *Clinical Outcomes*

Symptomatic improvement is expected. Failure to respond should indicate the need for referral to a musculoskeletal specialist.

### *Alternative Approaches*

Immediate referral to musculoskeletal specialist.

### Future Research recommendations:

The revision panel for the clinical guideline on sub-acute hip pain in the adult patient over 50 years of age believes that research directed to assessing outcomes resulting from the use of this guideline to be necessary and beneficial.

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## Interpreting the Guideline Symbols



*Unshaded boxes* represent points in the algorithm where actions are to be taken or information is to be collected (i.e., the “Significant History” information box asks the reader to take a medical history).



*Shaded boxes* are text blocks and are used to provide detailed information about an action to be taken or information to be collected (i.e., the “Significant History” text block defines the history information that is critical to collect to deal with the diagnoses addressed in the algorithm).



*Diamonds* represent decision points (i.e., the “Response to Initial Treatment” diamond asks the reader to decide at what level an intervention has been successful).



*Ovals* indicate end points (i.e., the “Refer to Specialist” circle indicates that the non-specialist should release the patient into the care of a specialist).



*Arrows and connector lines* mean that the reader should continue on in the direction indicated.



*Broken arrows* mean that readers should be aware that further diagnostic and treatment options exist, but that the remainder of the algorithm is intended for use by specialists following referral or consultation with the first contact physician.



*Asterisks* indicate a continuation of the algorithm to another page.



*Clouds* indicate that an intervention is highly controversial and although the information or procedure may be used in practice by some physicians, very little scientific evidence exists to support its effectiveness.