

# Time and Cost of Diagnosis for Symptomatic Femoroacetabular Impingement

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**Background:** Femoroacetabular impingement (FAI) and labral tears are common causes of hip pain that are often not promptly or properly diagnosed. To our knowledge, no reports have defined the time and cost of diagnosis of labral tears associated with FAI.

**Hypothesis:** Patients with labral tears associated with FAI undergo extraneous diagnostic testing and pain and incur a significant amount of health care costs before they receive appropriate surgical management for their pathology.

**Study Design:** Economic and decision analysis; Level of evidence, 4.

**Methods:** A total of 78 patients diagnosed with symptomatic FAI were surveyed. A standardized questionnaire asked patients about time to diagnosis, symptoms, health care providers visited, imaging tests, and treatments prior to diagnosis. Costs were calculated based on 2012 national Medicare data.

**Results:** Patients in the cohort saw an average of 4.0 health care providers, had an average of 3.4 diagnostic imaging tests, and tried an average of 3.1 treatments prior to diagnosis. The average total amount spent per patient prior to diagnosis was US\$2456.97. The calculated minimum cost of diagnosis, including a visit to an orthopaedic surgeon as well as an anteroposterior pelvis and lateral hip radiograph and 1 magnetic resonance arthrogram, was US\$690.62. The average duration between onset of symptoms and diagnosis of labral tear was 32.0 months.

**Conclusion:** The average amount of health care dollars spent per patient prior to receiving a diagnosis of acetabular labral tear was US\$1766.35 higher than the calculated minimum cost. This figure is based on Medicare payment amounts, which may significantly underestimate the actual charges at many hospitals, thereby increasing the total cost of diagnosis.

**Clinical Relevance:** The costs and pain associated with this time, along with the potential long-term degradation of the hip joint, make it important for all health care professionals to recognize and appropriately manage or refer the patient.

**Keywords:** hip arthroscopy; cost analysis; diagnosis; labral tear

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Hip pain is a common and debilitating symptom experienced by patients of all ages. Two common causes of hip pain in young, active individuals are femoroacetabular impingement (FAI)<sup>29</sup> and labral tears.<sup>11,29</sup> FAI is a pathological mechanical process caused by morphologic abnormalities in the acetabulum and/or femur leading to structural damage. According to the US National Library of Medicine, the diagnosis of FAI requires the presence of soft tissue damage, implying labral or articular cartilage injury.<sup>28</sup> Thus, FAI and labral tears are intricately connected as shear forces in the hip from impingement often damage the labrum, even

without a traumatic injury.<sup>19</sup> Other causes of labral tears include hip dysplasia and acute traumatic injury.<sup>3,32</sup> Recent advances in hip arthroscopy have allowed for less invasive treatment options for labral tears associated with FAI with significant improvements in clinical outcomes.<sup>4,25,27</sup>

Preliminary cost analysis studies have shown that arthroscopic hip intervention for labral tears is cost-effective and provides a positive impact on quality of life for patients with this diagnosis.<sup>31</sup> However, some patients do not receive a timely diagnosis of a labral tear, possibly because of unfamiliarity with this pathology in the medical community and the difficulty of diagnosis via clinical examination.<sup>3,20</sup>

Femoroacetabular impingement may present with subtle radiographic findings (cam lesion, lateral center-edge angle, and alpha angle) and unclear symptoms, leading to an extensive, and in some cases unnecessary, workup before the correct diagnosis is reached.<sup>2,3,24</sup> Potential diagnostic criteria for FAI have been previously defined by Nepple et al<sup>24</sup> (Table 1). The workup for FAI may include imaging tests such as magnetic resonance imaging (MRI), computed tomography (CT) scans, pelvic ultrasounds, and bone scans, as well as other components such as injections, manipulations, and pain medications.

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TABLE 1

Clinical and Radiographic Criteria for Diagnosis of FAI<sup>a</sup>

Hip pain for >3 months
No clinical evidence of inflammatory arthritis changes
Hip internal rotation $\leq 20^\circ$ in $90^\circ$ of hip flexion
Lateral center-edge angle $> 20^\circ$
Alpha angle $> 60^\circ$ on any radiograph view or radial MRI/CT reformat and/or lateral center-edge angle $> 40^\circ$ and/or presence of cranial acetabular retroversion confirmed on MRI/CT
Diagnostic injection or MRI indicating presence of intra-articular pathology or labral damage

<sup>a</sup>From Nepple et al.<sup>24</sup> CT, computed tomography; FAI, femoroacetabular impingement; MRI, magnetic resonance imaging.

This myriad of diagnostic tests, procedures, and consultations consumes time and money. While some associated costs may be diagnostic and therapeutic, often patients continue to struggle with pain and activity limitations.

Labral insufficiency has been associated in biomechanical studies with irreparable chondral damage,<sup>6</sup> and it has been suggested the labrum plays an important role in preventing osteoarthritis (OA).<sup>2,14,21,30</sup> While more studies are needed to verify the long-term outcomes, it is possible that a delay in the diagnosis and treatment of labral tears associated with FAI could potentially increase a patient's risk of OA and subsequent total hip arthroplasty.<sup>2,16</sup> Although no causal relationship between FAI and OA has been established, recent longitudinal studies have shown that cam lesions in patients between 45 and 65 years of age significantly increase the risk of developing OA and need for total hip arthroplasty.<sup>1,8,10,26</sup> Despite the relative frequency of the disease and the common and successful arthroscopic treatment of it,<sup>11,27</sup> the diagnosis of labral tears remains problematic.

The purpose of this investigation was to investigate the time, health care dollars, imaging, medical procedures, and duration of pain endured by patients before a correct diagnosis of a labral tear is made. Our hypothesis is that patients with labral tears associated with FAI undergo extraneous diagnostic testing and pain and incur a significant amount of health care costs before they receive appropriate management for their pathology.

## METHODS

After approval by the institutional review board at Northwestern University, a prospective evaluation was conducted of 100 consecutive patients who presented to a surgeon for management of hip pain from January 2012 through June 2012. Each patient underwent a history and physical examination by the surgeon, who serves as a specialist at a tertiary care referral center. The surgeon and a board-certified musculoskeletal radiologist subsequently evaluated all anteroposterior (AP) pelvis and lateral hip radiographs and magnetic resonance (MR) arthrograms of the hip to assess for pathology. When available, outside hospital imaging was also reviewed.

Patients were included in this study if they had a labral tear secondary to cam and/or pincer FAI confirmed by

TABLE 2  
Patient Demographics<sup>a</sup>

	No. of Patients	Age, y, Avg (Range)	Female Patients No. (%)
Included	78	34.9 (18-71)	49 (62.8)
Excluded	22	44.3 (18-64)	15 (68.2)
History of lumbar spine problem	5	46.2 (30-62)	5 (100.0)
Fibromyalgia	3	44.2 (34-51)	3 (100.0)
Prior labral repair surgery	2	24.6 (18-32)	1 (50.0)
OA ( $\geq$ Tönnis grade 2)	8	52.2 (43-64)	4 (50.0)
Prior other hip surgery	2	36.6 (41-32)	1 (50.0)
FAI without labral tear	2	35.3 (35-36)	1 (50.0)

<sup>a</sup>Avg, average; FAI, femoroacetabular impingement; OA, osteoarthritis.

clinical examination by the surgeon and via MRI by the staff radiologist as well as the surgeon.

Twenty-two patients were excluded because of coexisting conditions such as lumbar spine problems, fibromyalgia, prior labral repair or other hip surgery, imaging showing osteoarthritis of Tönnis grade 2 or higher, and cam or pincer lesion without labral tear (Table 2). Seventy-eight of 100 patients were confirmed to have a labral tear. Operative treatment was recommended after failure of other treatment options, including conservative management. Conservative management consisted of rest, activity modification, physical therapy, and nonsteroidal anti-inflammatory drugs (NSAIDs). Of these 78 patients, the diagnosis of a labral tear was confirmed arthroscopically in 54 of 54 patients (100%) who had undergone surgery.

A standardized questionnaire was used to survey patients about their course of hip problems prior to diagnosis of a labral tear (Figure 1). The survey was completed by the patient in the clinic after a diagnosis of a labral tear was confirmed. Information regarding the number and type of health care providers visited, number of imaging tests completed, location of pain prior to diagnosis, activities limited by pain, and length of time that the patient experienced symptoms prior to diagnosis were also collected. Length of time to diagnosis was calculated based on the date of onset of symptoms reported by the patient and the date of diagnosis of a labral tear either by the surgeon or an outside physician who diagnosed a labral tear and referred the patient to the surgeon for confirmation and surgical treatment.

All costs associated with diagnostic workup and medical management prior to diagnosis were calculated using the 2012B version (March 2012 release) of the Physician Fee Schedule Search, available through the Centers for Medicare & Medicaid Services Web site (<https://www.cms.gov/apps/physician-fee-schedule/search/search-criteria.aspx>). Healthcare Common Procedure Coding System (HCPCS) criteria were used to calculate each cost. The HCPCS criteria used in our calculations of costs are listed in each data table. The national payment amount was used with all

1. How many health care professionals did you seek care from for your hip problem? \_\_\_\_\_
2. For how many months did you experience hip pain prior to diagnosis? \_\_\_\_\_
3. Which of the following diagnostic tests did you undergo prior to diagnosis?
 

<input type="checkbox"/> X-ray without contrast	<input type="checkbox"/> X-ray with contrast
<input type="checkbox"/> CT scan	<input type="checkbox"/> Ultrasound
<input type="checkbox"/> MRI with contrast (arthrogram)	<input type="checkbox"/> MRI without contrast
<input type="checkbox"/> MRI of spine	<input type="checkbox"/> Bone scan
4. Which of the following treatments did you try for your hip problem?
 

<input type="checkbox"/> Activity restriction	<input type="checkbox"/> Anti-inflammatory pills
<input type="checkbox"/> Narcotic pain killers	<input type="checkbox"/> Manual manipulation
<input type="checkbox"/> Intra-articular steroid injection	<input type="checkbox"/> Trochanteric cortisone injection
<input type="checkbox"/> Physical therapy	
5. What surgeries did you undergo for your hip problem prior to diagnosis?
 

<input type="checkbox"/> Hernia repair	<input type="checkbox"/> Hip arthroscopy
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6. What type of insurance do you have?
 

<input type="checkbox"/> Medicare	<input type="checkbox"/> Medicaid	<input type="checkbox"/> PPO	<input type="checkbox"/> HMO	<input type="checkbox"/> No insurance
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**Figure 1.** Questions in the survey of time to diagnosis for labral tears. CT, computed tomography; HMO, health maintenance organization; MRI, magnetic resonance imaging; PPO, preferred provider organization.

**TABLE 3**  
Summary of Costs

Category	Cost, US\$, Mean (Range)
Health care provider visits	315.05 (0-1245.80)
Diagnostic imaging workup	837.01 (0-4001.10)
Conservative management	1375.44 (0-19,938.09)

modifiers selected. To calculate the cost of all imaging tests and procedures, we used the total cost, which includes the Medicare Technical Component (TC) and professional fee (modifier 26). All prices for physician visits (excluding visits to an emergency room) are based on the nonfacility price.

Seventy-two patients (92.3%) included in this study paid for their health care through private health insurance, 2 patients had Medicaid, 2 patients had Medicare, 1 patient had worker’s compensation coverage, and 1 received medical care free of charge through our institution’s financial assistance program.

## RESULTS

### Monetary Costs of Diagnosis

Health care costs (in US\$) related to the diagnosis of labral tears were divided into health care provider (HCP) visits, diagnostic imaging, and conservative treatments (Table 3). Patients in our cohort visited an average of 4.0 HCPs prior to presenting to the surgeon for definitive diagnosis and treatment of their labral tear (Table 4). Two patients (2.6%) went directly to the surgeon for evaluation of their hip problem without seeing any other HCPs prior to diagnosis. Twelve

patients (15.4%) saw 1 HCP prior to visiting the surgeon regarding hip pain. Six of these 12 patients (50.0%) were former patients of the surgeon or one of his partners. Sixty-four patients (82.1%) saw more than 1 HCP prior to visiting the surgeon. These patients visited, on average, 4.0 (range, 2-15) HCPs prior to receiving the diagnosis of a labral tear. Twenty-two patients (28.2%) saw more than 1 orthopaedic surgeon prior to visiting the surgeon for their hip problem. Fifty-one patients (65.4%) visited more than 1 nonorthopaedic HCP (primary care physician [PCP], emergency physician, physiatrist, general surgeon, chiropractor, neurologist, physical therapist, or athletic trainer) for their hip problem prior to diagnosis of a labral tear. Visits to various HCPs accumulated a total cost of \$24,574.03 among our cohort, or an average cost of \$315.05 (range, \$0-\$1245.80) per patient based on the 2012 national Medicare nonfacility price for each physician visit, not including the costs of seeing an athletic trainer. The most common type of HCP visited by patients in our cohort was an orthopaedic surgeon.

The average number of diagnostic tests each patient received prior to presenting to the surgeon was 3.4 (Table 4). The average cost of diagnostic imaging was \$837.01 per patient (range, \$0-\$4001.10), based on the total national Medicare price.

Conservative management is a factor in the initial treatment of hip pain. The average number of treatments that each patient tried prior to presenting to the surgeon was 3.1 (Table 5). Using 2012 Medicare data, this amounted to an average cost of \$1375.44 (range, \$0-\$19,938.09) per patient in treatment modalities before a definitive diagnosis of a labral tear was made, not including the costs of NSAIDs or narcotic medications. The total cost for prolonged NSAIDs or narcotic medications could not be calculated because patients were unable to accurately recall the

TABLE 4  
Health Care Providers Seen and Diagnostic Tests  
Received Prior to Diagnosis<sup>a</sup>

Type of HCP (CPT Code)	National Medicare Payment Amount for Visit, US\$ (Nonfacility Price)	Patients Who Visited Each Type of HCP, No. (%)
Primary care provider (99213)	70.46	45 (57.7)
Emergency physician (99282)	60.25 <sup>b</sup>	6 (7.7)
Neurologist (99203)	105.18	2 (2.6)
PM&R physician (99203)	105.18	4 (5.1)
General surgeon (99203)	105.18	3 (3.8)
Orthopaedic surgeon, all subspecialties (99203)	105.18	57 (73.1)
Joint specialist	105.18	12 (15.4)
General orthopaedic surgeon	105.18	6 (7.7)
Sports medicine specialist	105.18	27 (34.6)
Spine specialist	105.18	6 (7.7)
Chiropractor (99203)	105.18	26 (33.3)
Physical therapist (97001)	73.52	47 (60.3)
Athletic trainer (97005)	N/A <sup>c</sup>	23 (29.5)

Diagnostic Test (CPT Code)	National Medicare Payment Amount, US\$ (Nonfacility Price)	Patients Who Received Each Type of Imaging Test, No. (%)
Radiograph of hip, no contrast (73510)	40.16	57 (73.1)
Radiograph of hip with contrast (73525)	106.54	21 (26.9)
CT pelvis, no contrast (72192)	227.71	9 (11.5)
MR lower extremity joint, no contrast (72195)	481.97	27 (34.6)
MR lower extremity joint with contrast (73722)	505.12	52 (66.7)
Ultrasound of pelvis (76856)	127.64	11 (14.1)
MRI lumbar spine, no contrast (72148)	431.94	8 (10.3)
Whole-body bone scan (78306)	257.66	4 (5.1)

<sup>a</sup>CPT, Current Procedural Terminology; CT, computed tomography; HCP, health care provider; MRI, magnetic resonance (MR) imaging; PM&R, physical medicine and rehabilitation.

<sup>b</sup>Facility price.

<sup>c</sup>No price available from the Centers for Medicare & Medicaid Services Physician Fee Schedule.

total amount of medication taken during the period prior to diagnosis.

The average amount of dollars spent on health care related to a patient's hip problem prior to receiving a diagnosis of a labral tear was \$2456.97, calculated based on the nonfacility national Medicare prices. This total cost included HCP visits, diagnosis of the labral tear, and conservative management. The calculated minimum cost of

TABLE 5  
Treatment Modalities Prior to Diagnosis<sup>a</sup>

Diagnostic Test (HCPCS Code)	National Medicare Payment Amount, US\$	Patients, No. (%)	No. of Treatments, Avg (Range)
Activity restriction	N/A	61 (78.2)	33 wk (1-364)
Anti-inflammatory medication	N/A	64 (82.1)	N/A
Narcotic medication	N/A	18 (23.1)	N/A
Trochanteric cortisone injection (20610)	69.78	19 (24.4)	1.4 injections (1-4)
Intra-articular steroid injection with needle localization by radiograph (20610 and 77002)	148.07	14 (17.9)	1.3 injections (1-3)
Physical therapy return visit (97110)	30.63	49 (62.8)	28 wk (1-260)
Manual manipulation (97140)	28.59	15 (19.2)	N/A

<sup>a</sup>HCPCS, Healthcare Common Procedure Coding System; N/A, not available.

TABLE 6  
Most Common Types of Pain and Activity Limitations  
Experienced by Patients Prior to Diagnosis

	Patients, No. (%)
Location of pain	
Groin	56 (71.8)
Greater trochanter region	34 (43.6)
Buttock	31 (39.7)
Thigh	28 (35.9)
Back	20 (25.6)
Limited activity	
Running	68 (87.2)
Other athletic activities	60 (76.9)
Walking	47 (60.3)
Sitting	45 (57.7)
Climbing stairs	43 (55.1)
Biking	32 (41.0)
Lying down	22 (28.2)

diagnosis, including a visit to an orthopaedic surgeon as well as a plain radiograph and 1 MR arthrogram, is \$690.62. The average cost for a PCP visit for a referral to an orthopaedic surgeon is \$70.46.

#### Physical Costs to Patient

The average duration between onset of symptoms and diagnosis of labral tear was 32.0 months (range, 0.3-360 months). The most common location of pain reported by patients in this cohort was in the groin, followed by the greater trochanter region (Table 6).

Patients in this cohort most commonly experienced difficulty with running and other athletic activities prior to diagnosis (Table 6). The majority of patients also had

trouble with daily activities such as climbing stairs, sitting, and walking.

## DISCUSSION

Femoroacetabular impingement is a common cause of hip pain, especially in the young adult population.<sup>29</sup> The prevalence of FAI in the general population is estimated to be approximately 10% to 15%.<sup>29</sup> Among patients with presenting hip or groin pain, this number increases to 22% to 55%.<sup>11</sup> Despite the prevalence of these pathologies, the diagnosis of symptomatic labral tears and FAI has been shown in previous studies to be difficult for HCPs. Burnett et al<sup>3</sup> reported that patients visited an average of 3.3 HCPs before receiving the accurate diagnosis of a labral tear. The average duration of symptoms prior to diagnosis was 21 months.<sup>3</sup> However, this study had fewer patients, and hip arthroscopy only comprised 12% of the surgeon's practice.

Our study found that patients experience pain for an average of 32.0 months prior to receiving a diagnosis of a labral tear. On average, \$2456.97 is spent during this process, calculated based on national Medicare reimbursement rates excluding facility fees. The minimum cost to diagnose a labral tear, which requires an AP pelvis radiograph, a lateral hip radiograph, MR arthrogram (with all cuts, including coronal cuts), and visit to an orthopaedic surgeon, is \$690.62. The average cost of diagnosis for patients in our cohort was nearly 3 times higher than the minimum cost. A more rapid referral to an orthopaedic surgeon specializing in hip pathology (\$105.18) could potentially decrease some of the costs associated with diagnosing labral tears.

It is important to note that our use of national Medicare reimbursement rates may lead to an underestimation of the actual cost of diagnosis of a hip labral tear. Our estimated cost of diagnostic tests per patient and treatments per patient based on Medicare dollars were \$837.01 and \$1375.44, respectively. Actual costs will vary depending on hospital or institution. Based on the charges at our institution, for example, the estimated average cost of diagnostic tests per patient was \$6081.12, and the estimated average cost of treatments per patient was \$3912.34. The possibility of underestimation would only accentuate the high cost of diagnosis of hip labral tears.

Patients in our cohort visited an average of 4.0 different HCPs prior to diagnosis. After orthopaedic surgeons, patients most commonly sought care from a primary care provider or a physical therapist regarding their hip pain. Therefore, it may be beneficial to increase awareness about labral pathologies, especially among these members of the health care community.

In addition to visiting an average of 4.0 different HCPs and undergoing an average of 3.1 treatments prior to diagnosis of labral tear, patients also underwent an average of 3.4 imaging tests. In our experience with labral tears, and as supported by the literature,<sup>15-17,23</sup> the only imaging modalities considered necessary for diagnosis, in addition to the clinical examination, are AP pelvis and lateral hip plain radiographs and an MR arthrogram with coronal cuts, which would amount to \$585.44 per patient. In our study, the

average imaging costs prior to diagnosis totaled \$837.01. Although some additional imaging costs may be justified if a clinician is working up a patient for other possible diagnoses, greater awareness and more rapid recognition of labral tears could help decrease the cost of imaging and the overall cost of diagnosis of labral tears. In terms of conservative treatments, while they may provide some temporary symptom relief in some patients with symptomatic FAI, they have not been proven to provide long-term benefit.<sup>13,18</sup>

The multitude of imaging tests, especially radiographs and CT scans, exposes patients to ionizing radiation, which may pose health risks.<sup>9</sup> In addition to initial plain radiographs, MR arthrography with all cuts, including coronal cuts, has been shown to be the modality of choice for identification of labral tears.<sup>2,7,34</sup> It has been reported to give a sensitivity of 90% and an accuracy of 91% for identifying a labral tear or detachment. In comparison, standard MRI yielded a sensitivity of 30% and accuracy of 36%.<sup>7</sup> Some authors have more recently shown better results and have advocated using noncontrast MRI<sup>22</sup>; however, this usually requires specialized protocols and expert interpretation. MR arthrography remains the gold standard for most hip arthroscopy surgeons. The prices of MRI with or without contrast do not differ significantly, but regardless of the preferred MRI technique, it is important to reduce redundancy in imaging to decrease the time and money spent for diagnosing a hip labral tear.

Many patients in this cohort received radiographs with contrast and/or CT scans for their hip problem. Although these imaging modalities may be useful in the workup for other conditions, they are less useful for the diagnosis of labral tears. In some cases, these other imaging techniques represent extra expenditure as well as unnecessary radiation exposure for the patient.<sup>16</sup> While certain imaging tests may have been ordered to evaluate for non-hip or non-FAI pathology, the purpose of this discussion is for greater awareness of FAI.

The most common presenting symptom among our patient population was groin pain, while the most frequent activity limitation was running. These common signs and symptoms of labral tears may allow nonorthopaedic surgeons to more readily recognize the correct disease process and direct the patient to appropriate care. While common muscle strains and tendon sprains occur with greater frequency, a diagnosis of labral tear should be ruled out in patients with prolonged symptoms.

During the average of 32.0 months that it took for patients to receive a diagnosis of a labral tear, patients also underwent a spectrum of medical interventions and treatments in an attempt to alleviate their hip pain. While some believe the hip pain should last more than 3 months prior to the diagnosis of FAI, our study showed that patients did not have an appropriate diagnosis for 10 times that length of time.<sup>24</sup> While most hip pain can be treated conservatively with NSAIDs and physical therapy, the treatment should be guided toward the appropriate diagnosis. Notably, the vast majority of patients used NSAIDs, and 23% of patients used narcotic medication in an attempt to manage hip pain prior to the diagnosis of a labral tear. Prolonged NSAID use has been linked with severe gastrointestinal damage<sup>5</sup> as well as cardiovascular risks.<sup>12</sup> The side effects of narcotic use

have been widely documented and include gastrointestinal effects, mental status changes, pruritus, urinary retention issues, and respiratory problems.<sup>33</sup> Earlier diagnosis of these hip pathologies may help avoid the costly interventions and potential risk to patient health.

This study has several limitations. First, all data were recorded from patients at the time of diagnosis and are thus subject to recall bias. Second, the surgeon has a large referral base for patients who need hip arthroscopy procedures, and therefore his patient population, from which our data were drawn, may not be representative of the typical patient with hip pain. Also, the surgeon works in close affiliation with local professional and college athletic teams, and players on these teams may have had a shorter time to diagnosis of labral tear than can be expected in the general population. This may falsely decrease the average cost and time to diagnosis of patients in this study. Finally, the national Medicare data used to calculate the costs of visits to health care providers, imaging tests, and treatments may not reflect the actual rates for various health care providers.

## CONCLUSION

Hip labral tears are being increasingly recognized by orthopaedic surgeons, particularly those who specialize in hip arthroscopy. Unfortunately, the time to appropriate diagnosis for a patient with such a hip problem is long. While all patients may not need surgical intervention, early diagnosis based on clinical signs and symptoms as well as basic radiographic parameters may guide appropriate treatment and referral. The total mean amount of health care dollars spent per patient prior to making a diagnosis of a labral tear was \$1766.35 higher than the calculated minimum cost of diagnosis. The costs and pain associated with this time along with the potential long-term degradation of the hip joint make it important for all health care professionals to recognize and appropriately manage or refer the patient.

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