Bibliographic Cite	Literature Type	Level of Evidence	Purpose	Population	Intervention and Outcome Measures	Results/ Recommendations	Study Limitiations
Annabell L, Master V, Rhodes A, Moreira B, Coetzee C, Tran P. Hip pathology: The diagnostic accurcy of magnetic resonance imaging. J Ortho Surg Res. 2018; 13(1):127.	Single-center, retrospective, consecutive, multi-reader	Low	To determine the accuracy of non-contrast MRI for diagnosis of intra-articular hip derangements and identify radiological features that could increase the accuracy of the diagnosis.	Consecutive series of hip arthroscopies performed between March 2011 and January 2013. A total of 71 cases (41 male, 30 female) with MRI in 68 patients were thus available. The 71 cases were obtained from four different radiology providers. Patients with MRIs performed within 6 months before hip arthroscopy were included.	Study compared preoperative analysis of MRI imaging versus an arthroscopic examination. Two musculoskeletal radiologists reported the data independently. All hip arthroscopies were performed by a single surgeon. Patients with MRIs performed within 6 months before hip arthroscopy were included. Outcome measures included observer accuracy identifying ligamentum teres tears, labral lesions, and chondral rim damage. Secondary outcome measures included inter-observer variability and correctly staged ligamentum teres tears.	The accuracy of radiology reporting for ligamentum teres tears, labral damage, and chondral rim lesions was 85.92% for each instance. The MRI findings most consistent with labral tears include the presence of linear high signal traversing the articular surface into the labrum, presence of intra-labral fluid signal, and loss of homogenous low signal triangular morphology. Chondral rim damage was difficult to diagnose, but abnormal signal at the chondrolabral junction with partial thickness defects would suggest damage. Ligamentum teres tears are commonly found but poorly graded. Thickening and increased signal suggests synovitis while discontinuity and fraying suggests partial tearing. The authors conclude that conventional non-arthrographic MRI offers an accurate non-invasive method to screen patients with symptoms referable to the hip by revealing the presence of labral tears, chondral defects, and ligamentum teres tears/synovitis. This study demonstrates that tears and synovitis of the ligamentum teres as potential sources of hip pain can be accurately identified on conventional non-arthrographic MRI. However, MRI has poor specificity and negative predictive value, and thus, a negative MRI result may warrant further investigation.	The limitations of this study included possible sampling bias, with the high prevalence of disease in the patient cohort, which clearly reflects the presentation of hip symptoms. Patients without hip pain were not included.
Chopra A, Grainger AJ, Dube B, et al. Comparative reliability and diagnostic performance of conventional 3T magnetic resonance imaging and 1.5T magnetic resonance arthrography for the evaluation of internal derangement of the hip. Eur Radiol. 2018;28(3):963-71.	Observational study	Moderate	To compare the diagnostic accuracy of conventional 3T MRI against 1.5T MR arthrography (MRA) in patients with clinical femoroacetabular impingement (FAI).	68 British symptomatic patients with clinical FAI	Sixty-eight consecutive patients with clinical FAI underwent both 1.5T MRA and 3T MRI. Imaging was prospectively analysed by two musculoskeletal radiologists, blinded to patient outcomes and scored for internal derangement including labral and cartilage abnormality. Interobserver variation was assessed by kappa analysis. Thirty-nine patients subsequently underwent hip arthroscopy and surgical results and radiology findings were analysed.	Both readers had higher sensitivities for detecting labral tears with 3T MRI compared to 1.5T MRA (not statistically significant p=0.07). For acetabular cartilage defect both readers had higher statistically significant sensitivities using 3T MRI compared to 1.5T MRA (p=0.02). Both readers had a slightly higher sensitivity for detecting delamination with 1.5T MRA compared to 3T MRI, but these differences were not statistically significant (p=0.66). Interobserver agreement was substantial to perfect agreement for all parameters except the identification of delamination (3T MRI showed moderate agreement and 1.5T MRA substantial agreement). Conventional 3T MRI may be at least equivalent to 1.5T MRA in detecting acetabular labrum and possibly superior to 1.5T MRA in detecting cartilage defects in patients with suspected FAI.	Study limitations include small study size and the assumption that the surgical findings at arthroscopy were the gold standard, although the two radiologists in the study were completely blinded to the results of the arthroscopy and the proportion proceeding to surgery, and the images were prospectively interpreted in a random order, there is a risk of inevitable detection bias towards a largely symptomatic patient population.
Crim J, Oserowsky A, Layfield LJ et al. Comparison of radiography and histopathologic analysis in the evaluation of hip arthritis. AJR Am J Roentgenol. 2019; 213(4):895-902.	single-center, retrospective, multi-reader	low	To establish the correlation of radiography findings with findings of gross and microscopic histopathologic analysis to assess the usefulness of radiography in preoperative assessment for hip arthroplasty.	Nine hundred fifty-three cases were eligible for the study. The radiographs were supine in 639 cases and standing in 314. The mean patient age was 60 years (range, 18–94 years). The indication for femoral head resection was almost always osteoarthritis, but fracture, avascular necrosis, tumor, and infection were also indications. Twelve cases were inflammatory or infectious arthritis rather than osteoarthritis, leaving 941 cases in which severity of osteoarthritis was assessed.	Radiology and pathology reports from 953 consecutive femoral head resections were reviewed to establish the correlation of radiography and pathology findings as used in routine clinical practice. In 83 cases MR images were also available for review. Both radiologists and pathologists prospectively used a four-grade scale of absent, mild, moderate, or severe osteoarthritis. The grades established by radiologists and pathologists were compared by means of both the four-grade system and a simplified two-grade system of none-to-mild versus moderate-to severe osteoarthritis.	Resection was performed for osteoarthritis in 941 cases and for infection, inflammatory arthritis, avascular necrosis, fracture, or tumor in the others. Radiographs showed severe osteoarthritis in 62.3% of patients and no or mild osteoarthritis in 17.7%. Observed agreement between radiology and pathology findings was 90% for both the four-grade and two-grade osteoarthritis scales. Findings on standing radiographs were more concordant with pathology results than findings on supine radiographs (odds ratio, 1.4). Observed agreement between radiography and MRI was 78%. There were significant discrepancies between radiography grade and pathology grade in 2.2% of cases. Observed agreement of MRI and pathologic analysis was 76% (κ = 0.64). The authors conclude that radiography findings a re a reliable indicator of severity of osteoarthritis. This is important because previous studies have shown that patients with no or mild osteoarthritis are less likely to benefit from arthroplasty. If evidence of moderate or severe osteoarthritis is not present on radiographs, further investigation is warranted before proceeding to arthroplasty.	One potential limitation of the study was that histopathologic examination evaluated the femoral side of the hip and not the acetabular side. The most important limitation of the study was that authors studied only cases of arthritis in which hip pain was sufficiently severe and persistent to lead to femoral head resection. This introduced substantial selection bias, especially in cases of mild osteoarthritis. Most cases of mild osteoarthritis are treated conservatively, not with femoral head resection. Therefore, authors cannot generalize that the number of cases in which osteoarthritis was underestimated on the basis of radiographs in their population is equivalent to that in the general population.
Grace T, Neumann J, Samaan MA, Souza RB, Majumdar S, Link TM, Zhang AL. Using the scoring hip osteoarthritis with magnetic resonance imaging (SHOMRI) system to assess intra-articular pathology in femoroacetabular impingement. J Orthop Res. 2018; 36(11):3064-3070.	Single-center, prospective, non-consecutive, multi-reader	Low	To correlate the Scoring Hip Osteoarthritis with Magnetic Resonance Imaging (SHOMRI) system with arthroscopic findings in symptomatic FAI patients to justify its use in this setting.	Criteria for study inclusion involved patients with: (i) cam-type or cam-predominant mixed-type FAI; (ii) ages 18 years to 50 years; (iii) Body Mass Index (BMI) less than 30 kg/m2; (iv) Lateral Center Edge Angle (LCEA)>20 degrees; and (v) hip pain or dysfunction refractory to at least 6-weeks of conservative therapies including activity modification, physical therapy, and/or corticosteroid injections. Patients were excluded if they had radiographic evidence of advanced arthritis (Tönnis grade 2 or higher) or had a history of prior hip surgery. A total of 43 patients met inclusion and exclusion criteria and were analyzed (mean age 35.7 years, mean BMI 23.8 kg/m2, 58.1% male)	Prior to surgery, radiographs, and an MRI were obtained of the affected hip and all patients completed the Hip disability and Osteoarthritis Outcome Score (HOOS) questionnaire. Each MRI was graded using the SHOMRI system. Intraoperatively, cartilage and labral injury grades were recorded. SHOMRI scores were then correlated with the intraoperative cartilage and labral grades as well as preoperative radiographic findings and HOOS scores.	SHOMRI total scores correlated with intraoperative femoral cartilage grade (ρ = 0.42; p = 0.002), acetabular cartilage grade (ρ = 0.30; p = 0.046), and labral tear grade (ρ = 0.42; p = 0.003) as well as with preoperative Tönnis grade (ρ = 0.37, p = 0.013), HOOS pain score (ρ = −0.33; p = 0.039), HOOS ADL score (ρ = −0.39; ρ = 0.007), and HOOS sports score (ρ = −0.30; p = 0.037). In conclusion, total scores from the SHOMRI system showed significant correlation with arthroscopic findings as well as radiographic gradings and clinical symptoms in patients with FAI. Use of this quantitative system to assess the burden of chondrolabral damage in FAI appears valid.	This study is limited by its exclusion of patients with more advanced stages of radiographic arthritis, which was necessary as these patients were not eligible for hip arthroscopy. Furthermore, the SHOMRI measurements were performed by three separate musculoskeletal radiologists, and no specific inter-rater or intra-rater reliabilities were determined for this FAI population. This study also lacks long-term postoperative outcomes including rates of conversion to THA, radiographic progression of degeneration, and postoperative symptom assessment.

Haims AH, Wang A, Yoo BJ, Porrino J. Negative predictive value of CT for occut fractures of the hip and pelvis with imaging follow-up. Emerg Radiol. 2021; 28(2):259-264.	Retrospective Study	Low	To determine the negative predictive value of multidetector CT for radiographically occult fracture of the hip or pelvis in an elderly population presenting to the emergency department.	A total of 257 patients, age > 65, with suspected fracture were identified over a 5-year period with negative radiographs acquired in the ED followed by an index CT of the hip/pelvis withint 24 h. Patients with hardware in the region of interest were excluded.	Follow-up imaging was reviewed by 2 musculoskeletal radiologists for the presence of fracture to determine the performance of the index CT. The electronic medical record was used to exclude the possibility of intervening trauma between the time of the index CT and follow-up imaging.	There were 39 cases with follow-up imaging performed within 6 weeks of the negative index CT, and 42 with follow-up imaging within 6 weeks to 18 months of the negative index CT. Eight of 81 patients demonstrated a fracture on follow-up imaging, with 3 of 8 involving the femoral neck or intertrochanteric femur. The negative predictive value of the index CT for the detection of a radiographically occult hip or pelvic fracture was 90.1%. If considering only surgically relevant fractures (femoral neck and intertrochanteric fractures), the negative predictive value improved to 96.3%. The authors conclude that CT for occult hip fractures has a high negative predictive value but there are cases not detected with surgical implications.	Several limitations are noted. First, there were 56 patients with negative index CTs who did not have imaging follow-up thereafter. Of these 56, 35 had clinical follow-up with a physical examination documented in the electronic medical record within 6 weeks after the initial emergency department visit. These patients were not incorporated into our negative predictive value calculations as clinical follow-up without imaging is inherently less reliable. Second, without acute MRI follow-up after the index CT, fractures could therefore be potentially overlooked using follow-up CT and radiography to measure performance. Lastly, authors relied on the electronic medical record and PACS to determine if interval trauma occurred between the time of the index CT and follow-up imaging.
Hu LB, Huang ZG, Wei HY, et al. Osteonecrosis of the femoral head: Using CT, MRI and gross specimen to characterize the location, shape and size of the lesion. Br J Radiol 2015; 88:20140508.	Prospective Study	Low	The objectives of this study are (1) to investigate the accuracy of using CT to capture the size, location, shape and spatial structural relationship of the necrotic lesion by comparing the coronal CT with coronal MR images and findings from coronal sectional gross specimens; and (2) to evaluate the accuracy of using CT to measure necrotic lesion volume, using the measurement from MR images and gross specimen as references.	A total of 23 patients, treated from January 2006 to December 2012 were enrolled, including 16 males and 7 females, with a mean age of 36.5 years (range, 28-52 years). Inclusion criteria for patients were (1) undergone hip arthroplasty owing to late stage osteonecrosis of the femoral head (ONFH); (2) agreed to participate in study and provide signed informed consent.	Coronal CT and MRI scans were performed on femoral head specimens from patients who had undertaken hip arthroplasty owing to ONFH. The results were compared with findings from coronal sectional gross specimens. Two radiologists independently measured the volume of necrotic lesions from CT and MR images using computer software, and the results were averaged. The volume of specimens' necrotic lesion was measured using the water displacement method.	There was a high degree of consistency between CT, MRI and the coronal secitonal gross specimen on the location, shape and spatial structure of lesions. Differences of the lesion volume measured from CT and MR images were not statistically significant between two radiologists. The necrotic lesion volumes measured from CT and MR images and gross specimens were 22.07 +/- 5.35, 22.21 +/- 5.15 and 21.12 +/- 4.96 cubic cm, respectively, and the differences were not statistically significant (F = 0.396; p = 0.674). CONCLUSION: For patients with ONFH in Association Research Circulation Osseous stage III or above, CT and MRI can accurately display the characterization of lesion.	This study has several limitations: (1) we used the lesion volume measured from coronal sectional gross specimen as the gold standard to evaluate the feasibility and accuracy of CT and MR images in measuring the lesion volume. Since only patients at late stage of ONFH undergo hip replacement surgery, there was no ARCO stage II case in this study. (2) We used water displacement method to measure lesion volume from gross specimen. Underestimation was possible if water permeates into the cancellous bone. (3) This study was conducted in vitro. The signal, density and intensity of CT and MR images of femoral head may be different from that obtained in vivo.
Keeney JA, Nunley RM, Adelani M, et al. Magnetic resonance imaging of the hip: poor cost utility for treatment of adult patients with hip pain. Clin Orthop. 2014;472(3):787-92.	Comparative Study	Low	QUESTIONS/PURPOSES: We performed this retrospective study to determine for patients 40 to 80 years old: (1) the differences in hip MRI indications between orthopaedic and nonorthopaedic practitioners; (2) the clinical indications that most commonly influence treatment decisions; (3) the likelihood that hip MRI influences treatment decisions separate from plain radiographs; and (4) the cost of obtaining hip MRI studies that influence treatment decisions (impact studies).	213 patients: patients 40 to 80 years old, 218 consecutive hip MRI studies (213 patients)	METHODS: We retrospectively assessed 218 consecutive hip MRI studies (213 patients) at one institution over a 5-year interval. Medical records, plain radiographs, and MRI studies were reviewed to determine how frequently individual MRI findings determined treatment recommendations (impact study). The cost estimate of an impact study was calculated from the product of institutional MRI unit cost (USD 436) and the proportion of impact studies relative to all studies obtained either for a specific indication or by an orthopaedic/nonorthopaedic clinician.	RESULTS: Nonorthopaedic clinicians more frequently ordered hip MRI without a clinical diagnosis (72% versus 30%, p < 0.01), before plain radiographs (29% versus 3%, p < 0.001), and with less frequent impact on treatment (6% versus 15%, p < 0.05). Hip MRI most frequently influenced treatment when assessing for a tumor (58%, p < 0.001) or infection (40%, p < 0.001) and least frequently when assessing for pain (1%, p < 0.002). Hip MRI impacted a treatment decision independent of plain radiographic findings in only 7% of studies (3% surgical, 4% nonsurgical). Hip MRI cost was least when assessing for a neoplasm (USD 750) and greatest when assessing undefined hip pain (USD 59,000). The cost of obtaining an impact study was also less when the ordering clinician was an orthopaedic clinician (USD 2800) than a nonorthopaedic clinician (USD 7800). CONCLUSIONS: Although MRI can be valuable for diagnosing or staging specific conditions, it is not cost-effective as a screening tool for hip pain that is not supported by history, clinical examination, and plain radiographic findings in patients between 40 and 80 years of age. LEVEL OF EVIDENCE: Level IV, economic and decision analysis study. See Instructions for Authors for a complete description of levels of evidence.	Retrospective design Predominantly male population Patient selection bias
Neiman, M, Halshtok Neiman, O, Aharoni, D, et al. Magnetic resonance arthrography of the hip: prevalence of diagnoses not suspected by the referring physician and correlation with clinical examination and pain score. Acta Radiol. 2016;57(5):595-601	Retrospective Study	Low	To evaluate the prevalence of non-suspected pathologies revealed by hip MRA and correlate them to physical examination/pain level	All hip MRAs (2011-2013) were retrospectively evaluated for intra- and extra-articular pathologies in consensus by two readers.	A clinical score (0-7)/pain score (0-10) was calculated for each patient based on orthopedic test results extracted from referral forms/a telephone questionnaire. Patients were divided into four groups according to MRA findings: intra-articular expected (targeted) pathology only; intra-articular targeted and additional non-targeted (unexpected) pathology; non-targeted pathology; and no pathology. Pathologies prevalence/clinical score/pain score were compared between the groups.	A total of 229 MRAs were included (127 men, 102 women; mean age, 36.5+/-14.17 years): 111(48.4%) patients had solely intra-articular targeted pathology. Significant non-targeted pathologies were detected in 76 (33%) patients (targeted and non-targeted, 51; non-targeted only 25). No significant pathology was detected in 42 patients (18%). Mean physical examination score was 2.77+/-1.77, range 0-7. There was no significant difference or correlation (r=0.017, P=0.804) between the clinical scores of the different MRA pathology groups. Pain score (143 patients) was significantly higher in the non-targeted pathology group compared to the targeted and non-targeted group (P=0.04) and to the no pathology group (P=0.04). There was no correlation between the physical examination score and the pain score (r=0.017, P=0.804). CONCLUSION: Unsuspected non-targeted pathologies were detected in 33% of hip MRA. Physical examination/pain level could not differentiate between patients.	Retrospective design

Neumann J, Zhang AL, Schwaiger BJ, et al. Validation of Scoring Hip Osteoarthritis with MRI (SHOMRI) scores using hip arthroscopy as a standard of reference. Eur Radiol. 2019; 29(2):578-587.	singler-center, retrospective, multi-reader	low	To validate SHOMRI gradings in pre-operative hip magnetic resonance imaging (MRI) with intra-arthroscopic evaluation of intraarticular hip abnormalities.	Thirty-nine patients with clinical and morphological signs of FAI were included in our study. Of these, one patient had bilateral hip MR imaging, resulting in a total of n=40 hip cases. For each case, the cartilage of the acetabulum and femur were scored separately, resulting in a total of n=80 regions with n=40 acetabular and n=40 femoral regions. The average age of all study participants was 34.7 years (standard deviation (SD) 9.0). Our study cohort consisted of n=16 women (41.0%) and n=23 men (59.0%). The average time between the pre-operative MR imaging study and hip surgery was 7.8 days (SD 8.2).	Pre-operative non-arthrographic 3.0T MRI of 40 hips in 39 patients with femoroacetabular impingement (FAI) syndrome, refractory to conservative measures, that underwent hip arthroscopy were retrospectively assessed by two radiologists for chondrolabral abnormalities and compared to intra-arthroscopic findings as the standard of reference. Arthroscopically accessible regions were compared to the corresponding SHOMRI subregions and assessed for presence and grade of cartilaginous pathologies in the acetabulum and femoral head. The acetabular labrum was assessed for presence or absence of labral tears. For the statistical analysis sensitivity and specificity were calculated as well as intraclass correlation (ICC) for interobserver agreement.	With respect to chondral abnormalities, 58.8% of the surgical cases showed chondral defects. SHOMRI scoring showed a sensitivity of 95.7% and a specificity of 84.8% in detecting cartilage lesions. Moreover, all cases with full-thickness defects (n=9) were identified correctly and in n=6 cases (out of n=36 with partial-thickness defects) the defected cartilage was identified but the actual depth overestimated. Labral tears were present in all cases and the MR readers identified 92.5% correctly. ICC showed a good interobserver agreement with 86.3% (95% CI 80.0, 90.6%). The authors conclude that using arthroscopic correlation, SHOMRI grading of the hip proves to be a reliable and precise method to assess chondrolabral hip joint abnormalities.	The study has several limitations. Firstly, all of the study participants showed an acetabular labral tear and, therefore, no specificity was computed during analysis of the SHOMRI scores. Secondly, the readings were only performed on patients with FAI syndrome and no patients without clinical or morphological signs of FAI were included. Due to the purpose of the study, evaluation of hip abnormalities with intraoperative correlation, a surgical report was needed and thus, to extend this study design to including controls without indication for surgical treatment is not feasible. Finally, although arthroscopy is the choice of treatment for patients with FAI and no to mild radiographic changes, the access of the arthroscopic instrumentation is limited especially in the posterior regions of the hip joint and thus, authors did not include the posterior cartilage regions in the investigation.
Nguyen BJ, Burt A, Baldassare RL, et al. The prognostic and diagnostic value of FDG PET/CT for assessment of symptomatic osteoarthritis. Nucl Med Commun. 2018; 39(7):699-706.	Single-center, prospective, consecutive, multi-reader	Low	To assess the clinical significance of increased FDG uptake on PET/CT in joints for evaluation of symptomatic osteoarthritis (OA) and prediction of progression.	Consecutive patients undergoing routine PET/CT imaging from December 2010 to December 2012 for various oncologic indications and satisfying the inclusion/exclusion criteria were enrolled in this prospective study. The inclusion criteria were: (a) agreement to complete a WOMAC Osteoarthritis Index questionnaire and (b) agreement to be imaged with PET/CT below the knees. Patients were excluded if they had indications that would interfere with FDG uptake measurements of the joint spaces, including known primary bone tumors, osseous metastases, Paget's disease, gout or hyperuricemia, rheumatoid arthritis, seronegative spondyloarthropathy, infectious arthritis, joint infection, previous osseous surgery or serious trauma of the evaluated joints, history of hypercalcemia or hyperparathyroidism, known collagen disorders or glucose > 200 mg/dL	Shoulder, hip and knee joints were imaged in 65 patients undergoing routine FDG PET/CT imaging. Patients completed the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) questionnaire to assess joint pain, stiffness, and physical function. SUVs were measured in hip, knee, acromioclavicular (AC) and glenohumeral (GH) joints. Scout PET/CT images were evaluated for OA using the Kellgren and Lawrence (K/L) system. Patients were followed for five years to determine progression of OA based on follow-up imaging or surgical intervention.	SUV of knee (r=0.309, p=0.0003), hip (r=0.260, p=0.0027), AC (r=0.186, p=0.0313) and GH (r=0.191, p=0.0271) joints correlated with WOMAC overall scores. Furthermore, SUV of knee (r=0.410, p<.0001), hip (r=0.203, p=0.0199) and AC (r=0.364, p<.0001) joints correlated with K/L scores. SUV ROC AUCs were 0.734 (knee), 0.678 (hip), 0.661 (AC) and 0.544 (GH) for symptomatic OA detection based on WOMAC overall z-score greater or equal to 2. Compared with K/L score (HR=0.798, p=0.5324), age (HR=0.992, p=0.8978) and WOMAC overall score (HR=1.089, p=0.1265), only SUV (HR=5.653, p=0.0229) was an independent predictor of OA progression in the knees. The authors conclude that FDG PET/CT may be helpful with localization of painful abnormalities in the inflamed regions of the joints, which could potentially be used to direct individualized treatment in moderate and severe OA. Furthermore, SUV measurement on FDG PET/CT could serve as an inflammation activity index in the knees that may be predictive of outcomes and rate progression of OA.	The main limitation of this study was related to the method of anatomical assessment of bony changes of the joints using CT scout images, particularly for the knees, since the CT scout images are non-weight bearing. Though the K/L grading system of knee joints was originally developed for X-ray images, few patients enrolled in the study had X-rays of the joints initially available for review on PACS. Furthermore, only coronal PET/CT images were used for measuring SUV in the joint spaces.
O'Sullivan GJ, Carty FL, Cronin CG. Imaging of bone metastasis: An update. World J Radiol. 2015; 7(8):202-211.	Review	Low	Briefly review the current understanding of the biological mechanisms through which tumors metastasize to bone and describe the available imaging methods to diagnose bone metastasis and monitor response to treatment.	N/A	N/A	Among the various imaging modalities currently available for imaging skeletal metastasis, hybrid techniques which fuse morphological and functional data are the most sensitive and specific, and positron emission tomography (PET)/computed tomography and PET/magnetic resonance imaging will almost certainly continue to evolve and become increasingly important in this regard.	N/A
Saied AM, Redant C, Anthonissen J, et al. Conventional versus direct magnetic resonance imaging in detecting labral lesions in femoracetabular impingement - a retrospective multicenter study. Acta Orthop Belg. 2019; 85(1):100-106.	multi-center, retrospective, single-reader	low	To assess the reliability of Direct Magnetic Resonance Arthography (MRA) and Conventional Magnetic Resonance Imaging (MRI) in diagnosing labral lesions in patients with symptoms of femoroacetabular impingement (FAI).	Only patients who received magnetic resonance imaging prior to surgery were included in the analysis. Additional inclusion criteria for this study were anterior hip pain, positive impingement test and radiological signs of FAI. The exclusion criteria were radiological signs of degenerative or dysplastic hip, external tendon pathology, history of open surgery and age above 60 or below 22 years of age. Within these constraints a total of 490 hips in 482 patients were selected for further statistical analysis. Mean age of patients was 39.5 years (range 22 - 60 years).	Imaging and surgical data (n=490) were retrospectively collected from 5 high-volume centers providing arthroscopic treatment of FAI patients. Preoperative magnetic resonance imaging findings were compared with the actual surgical findings regarding labral condition in order to assess the effectiveness of MRI and MRA in identifying the presence of labral tears in patients with FAI.	Labral tears were identified in 96 of 182 hips (52.7%) on MRI. The location of the labral tear was described as anterior-superior (AS) in 89 hips, anterior-inferior (AI) in 3 hips, posterior-superior (PS) in 3 hips, no posterior-inferior (PI) locations and multiregional in 1 hip. MRI had a sensitivity of 66.9%, a positive predictive value of 90,6 %, a specificity of 82.6%, a negative predictive value of 50.0%, and an accuracy of 71.4% for the detection of labral tears. Labral tears were identified in 224 of 308 hips (72.7%) on MRA. The location of the labral tear was described as anterior-superior (AS) in 203 hips, anterior-inferior (AI) in 5 hips, posterior-superior (PS) in 3 hips, posterior-inferior (PI) in 1 hip and multiregional in 12 hips. MRA had a sensitivity of 74.4%, a positive predictive value of 85,7%, a specificity of 36.0%, a negative predictive value of 21.4%, and accuracy of 68.2% for the detection of labral tears	As it is a retrospective study, a control group of both absence of FAI or asymptomatic FAI could not be included. Protocols of MRI and MRA of different centers are not checked for reliability between different reporters. In this study 1.5 T was used for magnetic resonance while in the literature 3 T is mostly used. It is not clear what the effect of this difference may be on the results.