AmeriHealth Caritas Louisiana

National Imaging Associates, Inc.*	
Clinical guidelines **PELVIS MRI**	**Original Date: September 1997**
CPT Codes: 72195, 72196, 72197, +0698T	**Last Revised Date: April 2021**
Guideline Number: NIA_CG_037	**Implementation Date: TBD**

Note: There is no MRI Abdomen/Pelvis combo (comparable to a CT Abdomen/Pelvis) such that if imaging of both the abdomen and pelvis are indicated, two separate exams (and authorization) are required (i.e., MRI Abdomen and MRI Pelvis)

INDICATIONS FOR PELVIC MRI (Click here for Fetal MRI indications)

Initial pelvic imaging for staging of prostate cancer

- High Risk and above (T3a or higher, PSA >20*, Gleason 8-10)
- Intermediate Risk (T2b-T2c or PSA 10-20* or Gleason 7) when Nomogram predicts >10% probability of lymph node involvement (MSKCC/Kattan is the nomogram recommended by NCCN 2021)

*In patients who have been on a 5-alpha reductase inhibitor (such as Proscar) in the past 12 months, an "adjusted PSA" should be used. To adjust, multiply PSA by a factor of 2 (i.e., PSA 6 on finasteride adjusts to a PSA of 12)

Known prostate cancer for workup of recurrence and response to treatment
(NCCN, 2019)

- Initial treatment by active surveillance (asymptomatic very low, or low or intermediate risk with expected patient survival ≥ 10 years):
  - Initial multiparametric MRI (mpMRI) for patients who chose active surveillance
  - mpMRI to be repeated no more than every 12 months unless clinically indicated
- Initial treatment by radical prostatectomy:

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    - Failure of PSA to fall to undetectable level or PSA detectable and rising on at least 2 subsequent determinations
- Initial treatment radiation therapy:
    - Post-radiation therapy (Post-RT) rising PSA or positive digital exam and is candidate for local therapy

Indication for prostate MRI (suspected prostate cancer)
(**Bjurlin, 2018, 2020; Borofsky, 2018; EAU, 2018; Elkhoury, 2019; NCCN, 2021)**
- Prior to prostate biopsy when notes indicate that biopsy is planned (Alexander, 2019)
- In individuals with previous negative biopsy and ongoing concerns of increased risk of prostate cancer (i.e., rising or persistent elevated PSA with lab reports on 2 or more separate days OR suspicious digital rectal exam (DRE))

Note: Prostate MRI should not replace biopsy nor be used to determine if biopsy is necessary.

Evaluation of suspicious or known mass/tumors
- Initial evaluation of suspicious pelvic masses/tumors found only in the pelvis by physical exam and ultrasound has been performed (ACR, 2013, 2014)
- Further evaluation of abnormality seen on ultrasound (US) or when US is inconclusive (ACR, 2013, 2014)
- Surveillance: One follow-up exam to ensure no suspicious change has occurred in a tumor in the pelvis. No further surveillance MR unless tumor(s) are specified as highly suspicious or change was found on exam or last follow-up imaging.
- Initial staging of known cancer
- Follow-up of known cancer (Bourgioti, 2016; NCCN, 2019):
    - Of patient undergoing active treatment within the past year
    - With suspected pelvic metastasis based on a sign, symptom, (e.g., anorexia, early satiety, intestinal obstruction, night sweats, pelvic pain, weight loss, vaginal bleeding) or an abnormal lab value (alpha-fetoprotein, CEA, CA 19-9, p53 mutation)

Indication for combination studies for the initial pre-therapy staging of cancer, OR active monitoring for recurrence as clinically indicated OR evaluation of suspected metastases
- ≤ 5 concurrent studies to include CT or MRI of any of the following areas as appropriate depending on the cancer: Neck, Abdomen, Pelvis, Chest, Brain, Cervical Spine, Thoracic Spine or Lumbar Spine

For evaluation of suspected infection or inflammatory disease after preliminary imaging (such as CT, US, or nuclear medicine) has been performed or is contraindicated (includes MR urography (MRU) which includes abdomen MRI when indicated)
(ACR, 2013; Cartwright, 2015)
- Suspected perianal fistula
- Suspected infection (based on elevated WBC, fever, anorexia, or nausea and vomiting) in the pelvis

- For suspected urethral stricture or periurethral pathology (Aldamanhori, 2018)

For evaluation of known infection or inflammatory disease follow-up
(ACR, 2013, 2014; Vogel, 2016)
- Any known infection that is clinically suspected to have created an abscess in the pelvis and preliminary imaging has been performed or is contraindicated
- Any history of fistula limited to the pelvis that requires re-evaluation or is suspected to have recurred
- For patients with recurrent fistula-in-ano or perianal Crohn's disease
- Abnormal fluid collection seen on prior imaging that needs follow-up evaluation and is limited to the pelvis

For evaluation of suspected inflammatory bowel disease or follow-up (includes MR enterography and can also approve Abdomen MRI/MRE)
- For suspected inflammatory bowel disease (Crohn's disease or ulcerative colitis) with abdominal pain AND one of the following (ACR, 2019; Arif-Tiwari, 2019; Lichtenstein, 2018):
    - Chronic diarrhea
    - Bloody diarrhea
- High clinical suspicion after complete work up including physical exam, labs, endoscopy with biopsy (ACR, 2019; Arif-Tiwari, 2019; Lichtenstein, 2018; Rubin, 2019)
- For MR enterography (MRE) if CT or MRI of the abdomen and pelvis are inconclusive
- Known inflammatory bowel disease (Crohn's or ulcerative colitis) with signs/symptoms (e.g., abdominal pain, diarrhea, or hematochezia) requiring re-evaluation, or for monitoring therapy (ACR, 2019)

For suspected or known hernia
- For pelvic pain due to a suspected occult, spigelian, or incisional hernia when physical exam **and** prior imaging are non-diagnostic or equivocal or if requested as a preoperative study
    - For confirming diagnosis of a recurrent hernia when ultrasound is negative or nondiagnostic
    - Hernia with suspected complications (e.g., bowel obstruction or strangulation, or non-reducible) based on symptoms (e.g., diarrhea, hematochezia, vomiting, severe pain, or guarding), physical exam (guarding, rebound) or prior imaging (Halligan, 2018).

- **Suspected athletic pubalgia (sports hernia) in a patient with persistent groin pain that occurs with exertion, who has not responded to conservative treatment for four weeks, when other imaging is inconclusive (Lee, 2017; Paksoy, 2016).**

Indications for Musculoskeletal Pelvic MRI

- Initial evaluation of suspicious mass/tumor of the bones, muscles or soft tissues of the pelvis found on an imaging study, and needing clarification, or found by physical exam and after x-ray or ultrasound is completed
- Evaluation of suspected fracture and/or injury when initial imaging is completed or for confirmed stress (fatigue) fracture for "return to play" evaluation (ACR, 2016)
- For evaluation of known or suspected aseptic/avascular necrosis of hip(s) after completion of initial x-ray (ACR, 2015)
- Known or suspected sacroiliitis (infectious or inflammatory) after abnormal x-ray (ACR, 2016; Jans, 2014)
- Sacroiliac Joint Dysfunction when there is (Jans, 2014):
    - Persistent back and/or sacral pain unresponsive to four (4) weeks of conservative treatment, received within the past six (6) months, including physical therapy or physician supervised home exercise plan (HEP)
- For evaluating the lumbosacral plexus (ACR, 2016; Muniz-Neto, 2018):
    - To confirm involvement in symptomatic patients with known tumor
    - To assess extent of injuries in the setting of pelvic trauma
    - To exclude the presence of masses in patients with unilateral changes, or inconclusive or abnormal findings on EMG when there are persistent symptoms
    - For evaluation when lumbar spine MRI is suspicious or indeterminate
- For suspicion of pudendal neuralgia in the setting of chronic pelvic pain with genital numbness and erectile dysfunction when other causes have been ruled out (see Background regarding diagnosis) (Wadhwa, 2016)
- For suspicion of meralgia paresthetica when prior testing is inconclusive (diagnostic nerve block; electrodiagnostic testing; AND somatosensory evoked potentials) (Ally, 2019; Cheatham, 2013)
- Persistent Pain:
    - For evaluation of persistent pain unresponsive to four (4) weeks of conservative treatment received within the past six (6) months
    - For suspected piriformis syndrome after failure of 4 weeks conservative treatment (Hoon Ro, 2018)
- For further evaluation of congenital anomalies of the sacrum and pelvis and initial imaging has been performed

Other Indications for a Pelvic MRI

- Pelvic pain not explained by previous imaging/preprocedure (ACR, 2018)
    - Appropriate laboratory testing (chemistry profile, complete blood count, and urinalysis) and initial imaging, such as ultrasound
- For location or evaluation of undescended testes in adults and in children, including determination of location of testes, if ordered by a specialist (Kolon, 2014)
- For evaluation and characterization of uterine and adnexal masses, (e.g., fibroids, ovaries, tubes, and uterine ligaments) or congenital uterine or renal abnormality where ultrasound has been done previously (ACR, 2018).

- For evaluation of abnormal uterine bleeding when ultrasound findings are indeterminate (ACR 2020)
    - Age ≤ 50 – Vascular stalk or focal doppler signal on US
    - Age > 50 – Thickened endometrium, vascular stalk or focal doppler signal on US
- For evaluation of uterus prior to and after embolization (MRA preferred) (Deshmukh, 2012).
- For evaluation of endometriosis when preliminary imaging has been completed or to follow up known endometriosis (ACR, 2012; Siegelman, 2012)
- For further evaluation of suspected adenomyosis when ultrasound is inconclusive (Cunningham, 2018), such as the following:
    - Uterine abnormality on US
        - Anechoic spaces/cysts in myometrium
        - Heterogeneous echotexture
        - Obscured endometrial/myometrial border
        - Sub-endometrial echogenic linear striations
        - Thickening of the transition zone
        - Uterine enlargement
        - Uterine wall thickening
- Prior to uterine surgery if there is abnormality suspected on prior ultrasound
- For suspected placenta accreta or percreta when ultrasound is indeterminate (Kilcoyne, 2017)
- For further assessment of a scrotal or penile mass when ultrasound is inconclusive (Kirkham, 2012; Parker, 2015)
- For investigation of a malfunctioning penile prosthesis
- Suspected urethral diverticula and other imaging is inconclusive (Dwarkasing, 2011) (MRI may be indicated without prior ultrasound in limited situations as suggested, such as when there is compelling evidence suggestive of urethral diverticulum (i.e. ostia on cystoscopy or tender cystic lesion on anterior vaginal wall overlying the urethra) or for surgical planning.)
- For suspected pelvic congestion syndrome in women with chronic pelvic pain when other imaging is non-diagnostic (Knuttinen, 2015)
- For suspected patent urachus or other urachal abnormalities when ultrasound is non-diagnostic (Buddha, 2019; Villavicencio, 2016)
- For evaluation of suspected pelvic floor weakness in women with functional disorders, such as urinary or fecal incontinence, obstructed defecation, and pelvic organ prolapse (Garcia del Sato, 2014)
- MR defecography for suspected structural cause of defectory outlet obstruction to confirm diagnosis if other testing is equivocal (anorectal manometry and balloon expulsion testing) (Wald, 2014)
- For evaluation of enlargement of organ abnormality seen on previous imaging - to provide an alternative to an indeterminate or inconclusive ultrasound
- For diffuse, unexplained lower extremity edema with negative or inconclusive ultrasound
- For May-Thurner syndrome (MRV preferred)

- For further evaluation of an isolated right varicocele with additional signs and symptoms that suggest malignancy or suspicious prior imaging findings (Gleason, 2019)
- Surveillance MRI (include abdomen) every 2-3 years for patients with Hereditary Paraganglioma syndromes Type 1-5 (Benn, 2015)
- In hematospermia in men over 40, if **t**ransrectal ultrasound is negative or inconclusive (Allen, 2017)

Pre-operative evaluation
- For diagnostic purposes prior to pelvic surgery or procedure

Post-operative/procedural evaluation
- Follow-up of known or suspected post-operative complication involving the hips or the pelvis (Davis, 2016; Yanny, 2012) within six months
- A follow-up study to help evaluate a patient's progress after treatment, procedure, intervention, or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed.

Note: If an Abdomen/Pelvis MRI is indicated and the Abdomen MRI has already been approved, then the Pelvis MRI may be approved.

Fetal MRI (CPT codes 74712-74713) - To better define or confirm a known for suspected abnormality of the fetus after ultrasound has been performed during the second trimester (Prayer, 2017) or when fetal surgery is planned and/or to make a decision about therapy, delivery or to advise the family about prognosis (ACR-SPR, 2015; SPR, 2011). Also includes evaluation of the maternal pelvis and placenta.

BACKGROUND

Magnetic resonance imaging of the pelvis is a noninvasive technique for the evaluation, assessment of severity, and follow-up of diseases of the male and female pelvic organs. MRI provides excellent contrast of soft tissues and provides multiplanar and 3D depiction of pathology and anatomy. Patients undergoing MRI do not have exposure to ionizing radiation or iodinated contrast materials. MRI techniques utilize body coils to image the entire pelvis or endoluminal coils for evaluation of the rectum, prostate, and genitourinary system.

OVERVIEW

PI-RADS Assessment Categories for Prostate Cancer:

(ACR, 2019)

The assignment of a PI-RADS category is based on mpMRI findings only and does not incorporate other factors, including PSA testing, DRE (digital rectal exam), or clinical history.

PIRADS 1 – Very low (clinically significant cancer is highly unlikely to be present)
PIRADS 2 – Low (clinically significant cancer is unlikely to be present)
PIRADS 3 – Intermediate (the presence of clinically significant cancer is equivocal)
PIRADS 4 – High (clinically significant cancer is likely to be present)
PIRADS 5 – Very high (clinically significant cancer is highly likely to be present)

***Conservative Therapy** - **Conservative therapy** should include a multimodality approach consisting of a combination of active and inactive components. Inactive components, such as rest, ice, heat, modified activities, medical devices, acupuncture and/or stimulators, medications, injections (epidural, facet, bursal, and/or joint, not including trigger point), and diathermy can be utilized. Active modalities may consist of physical therapy, a physician-supervised home exercise program**, and/or chiropractic care.

****Home Exercise Program - (HEP)/Therapy** – the following elements are required to meet guidelines for completion of conservative therapy (ACR, 2015; Last, 2009):

- Information provided on exercise prescription/plan AND
- Follow up with member with documentation provided regarding lack of improvement (failed) after completion of HEP (after suitable 4-week period), or inability to complete HEP due to physical reason- i.e., increased pain, inability to physically perform exercises. (Patient inconvenience or noncompliance without explanation does not constitute "inability to complete" HEP).
- Dates and duration of failed PT, physician-supervised HEP, or chiropractic treatment should be documented in the original office notes or an addendum to the notes.

MRI and Undescended Testes – The most common genital malformation in boys is undescended testis. In one series, 70% of undescended testes are palpable**.** Despite the advances in ultrasound technology, ultrasound cannot reliably identify intra-abdominal testes, which comprise 20% of all undescended testes (Tasian, 2011). The timely management of undescended testis is important to potentially minimize the risk of infertility and lessen the risk of malignancy. MRI is used as a diagnostic tool in the detection of undescended testes and can reveal information for both anatomic and tissue characterization. It is noninvasive, non-ionizing, and can obtain multiplanar images.

MRI and Adnexal Masses – MRI is used in the evaluation of adnexal masses. It can identify and characterize different neoplastic and nonneoplastic abnormalities, e.g., exophytic leiomyoma, endometrioma, dermoid cyst, and ovarian edema. It is a useful adjunct when sonography is inconclusive in the evaluation of adnexal masses.

MRI and Endometriosis – MRI manifestations of endometriosis vary including endometrioma, peritoneal endometrial implant, adhesion, and other rare features. The data obtained from imaging must be combined with clinical data to perform preoperative assessment of endometriosis.

MRI and Lumbosacral Plexopathy - Complete lumbar (L1-L4) or sacral plexopathy (L5-S3) may present with weakness, sensory loss, and flaccid loss of tendon reflexes. Clinical diagnosis is confirmed by EMG. Acute and chronic plexopathies may be caused by nerve sheath tumors; infectious, autoimmune, hereditary, or idiopathic neuropathies; extrinsic compression; or trauma (ACR, 2016). There is no CPT® code specifically for imaging of the LS plexus. Pudendal neuralgia may be considered in chronic pain patients who meet the Nantes criteria: pain in the area innervated by the pudendal nerve, pain more severe with sitting, pain that does not awaken the patient from sleep, pain with no objective sensory impairment, and pain relieved by pudendal block. All five criteria must be met for diagnosis (Wadhwa, 2016).

MRI and Prostate Cancer – Although prostate cancer is the second leading cause of cancer in men, most cases do not lead to a prostate cancer-related death. Aggressive treatment of prostate cancer can have side effects, such as incontinence, rectal injury, and impotence. It is very important to do an evaluation that will assist in making decisions about therapy or treatment. MRI can non-invasively assess prostate tissue, functionally and morphologically. MRI evaluation may use a large array of techniques, e.g., T1-weighted images, T2-weighted images, and dynamic contrast enhanced T1-weighted images.

Prostate Cancer – MRI is not recommended in patients with suspected cancer but prior negative biopsy because MRI alone can miss up to 26% of clinically significant cancers that would be detected on TRUS biopsy (Borofsky, 2018). Patients with suspected prostate cancer should first undergo a systematic biopsy and if that fails to demonstrate tumor, an MRI can then be obtained to guide future biopsy attempts (Bjurlin, 2018; Elkhoury, 2019).

Per NCCN, 2019, for asymptomatic patients with prostate cancer, in very low, low, or intermediate groups with life expectancy ≤ 5 years, no further treatment or work-up indicated (unless the patient becomes symptomatic). Active surveillance is indicated if life expectancy is determined to be ≥ 10 years.

MRI and Rectal Cancer – MRI is used in the evaluation of rectal cancer to visualize not only the intestinal wall but also the surrounding pelvic anatomy. MRI is an excellent imaging technique due to its high soft-tissue contrast, powerful gradient system, and high resolution. It provides accurate evaluation of the topographic relationship between lateral tumor extent and the mesorectal fascia.

Imaging of hernias—Most hernias are diagnosed clinically with imaging recommended for the diagnosis of occult hernias or in the evaluation of hernia complications, such as bowel obstruction or strangulation. To detect occult hernias, ultrasound is a first-line study with a sensitivity of 86% and specificity of 77%, compared to 80% sensitivity and 65% specificity for CT (Robinson, 2013). According to Miller et al, “Magnetic resonance imaging is generally not considered a first- or even second-line evaluation modality for hernias…” (Miller, 2014). Both MRI and US can be valuable for diagnosing pathology in athletes with groin pain when a sports

hernia is suspected. Pain usually occurs with exertion with tenderness over the pubic symphysis or tubercle and exquisite tenderness on direct palpation of the superficial inguinal ring (positive direct stress test).This term initially denoted a posterior inguinal wall deficiency due to disruption of fascia and/or muscle but more recently given the label "core injury" to also include adductor tendon tears, injury to the aponeurosis of the rectus abdominus and adductor longus tendons, and osteitis pubis (Lee, 2017).

Elevated CA-125 and pelvic imaging- There is no evidence that isolated levels of CA-125 with no other clinical or radiologic evidence of pathology is sensitive or specific and should not be performed as an isolated test as it can lead to unnecessary studies and anxiety. It is elevated in most cases of epithelial ovarian cancer and is used in monitoring response to treatment as an adjunct to pelvic US. CA-125 has been shown to be increased in many conditions such as fibroids, adenomyosis, pancreatic cancer, endometriosis, tuberculosis, and interstitial lung disease. MRI is not indicated as a first-line test (Tahmasebi, 2018).

POLICY HISTORY

Date	Summary
July 2021	• **Clarified language in Indication for prostate MRI (suspected prostate cancer) based on updates to Version 2.2021 NCCN guidelines and 2020 publication of updated AUA-SAR SOPs regarding MRI**
April 2021	• **Updated the initial imaging for prostate cancer to reflect 2021 NCCN changes and "adjusted PSA"** • **Revised indication for prostate MRI (suspected prostate cancer) to clarify criteria related to a negative prior biopsy and added criteria for when imaging is appropriate prior to biopsy** • **Included criteria for ultrasound abnormalities for adenomyosis** • **Added limited circumstances when prior imaging is not needed before MRI for the evaluation of urethral diverticula**
May 2020	• **Mention MRU which includes MRI abd** • **Perianal fistula including with Crohn's** • **Urethral eval** • **Added section on MRE for IBD** • **Added section on Lumbosacral plexus, pudendal neuralgia, maralgia paresthetica, piriformis syndrome** • **Added separate section on hernia including sports hernia** • **Added abnormal uterine bleeding; adenomyosis; pelvic floor weakness; urachal anomalies; MR defecography; surveillance for**

	paraganglioma syndromes; hematospermia; LE edema; right varicocele; May-Thurner • **Added the Fetal MR GL to page** • **Comment section on Lumbar plexopathy, sports hernia, elevated CA-125**
June 2019	● **Added the following indications:** ○ **rising or persistent elevated PSA OR suspicious DRE and at least 15 yr life expectancy and negative prior biopsy** ○ **suspected perianal fistula** ○ **6 months time specification for f/u of known or suspected post-operative complication involving hips or pelvis** ○ **for confirmed stress (fatigue) fracture for "return to play" evaluation** ○ **post operative complications after pelvic floor surgery** ○ **For known prostate cancer: Initial treatment by active surveillance w/initial mpMRI and mpMRI to be repeated no more than every 12 months unless clinically indicated** ○ **suspected placenta accrete or percreta when US is indeterminate** ○ **further assessment of a scrotal or penile mass when ultrasound is inconclusive** ○ **investigation of a malfunctioning penile prosthesis** ○ **suspected urethral diverticula and other imaging is inconclusive** ○ **evaluation of adenomyosis when ultrasound is equivocal, especially in the case of suspected focal adenomyoma when it will help determine if surgery is indicated** ○ **suspected pelvic congestion syndrome in patients with chronic pelvic pain when other imaging is non-diagnostic** ○ **suspected patent urachus when ultrasound is non diagnostic** ○ **evaluation of enlargement of organ abnormality seen on previous imaging - to provide an alternative to an indeterminate or inconclusive ultrasound** ○ **PI-RADS information to background section** ○ **Home exercise program information updated to include dates and duration of failed PT and other**

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Reviewed / Approved by NIA Clinical Guideline Committee

GENERAL INFORMATION

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.