



<b>*National Imaging Associates, Inc.</b>	
<b>Clinical guideline PELVIS CT</b>	<b>Original Date: September 1997</b>
<b>CPT Codes: 72192, 72193, 72194</b>	<b>Last Revised Date: March 2023</b>
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**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.*
- *Where a specific clinical indication is not directly addressed in this guideline, medical necessity determination will be made based on widely accepted standard of care criteria. These criteria are supported by evidence-based or peer-reviewed sources such as medical literature, societal guidelines and state/national recommendations.*

**Note: For syndromes for which imaging starts in the pediatric age group, MRI preferred**

**Note:** PELVIS CT **ALONE** SHOULD ONLY BE APPROVED WHEN DISEASE PROCESS IS SUSPECTED TO BE LIMITED TO THE PELVIS. CT Abdomen/Pelvis Combo (CPT Codes: 74176, 74177, 74178) is the correct study when the indication(s) include both the abdomen AND pelvis, such as CTU (CT Urography), CTE (CT Enterography), acute abdominal pain, widespread inflammatory disease or neoplasm.

When separate requests for CT abdomen and CT Pelvis are encountered for processes involving both the abdomen and pelvis, they need to be resubmitted as a single Abdomen/Pelvis CT (to avoid unbundling). Otherwise, the exam should be limited to the appropriate area (i.e., Abdomen OR Pelvis) which includes the specific organ, area of known disease/abnormality, or the area of concern.

**INDICATIONS FOR PELVIS CT**

**Pelvic Pain for Unknown Etiology**

- CT allowed after initial workup is inconclusive and must include results of the following:
  - Initial imaging, such as ultrasound (although ultrasound does have limitations, it is a common misconception that ultrasound is not a good tool in ALL obese patients, such that it is often useful even in obese patients and quite reasonable

- to attempt as a first-line imaging modality particularly given the benefit of no radiation), scope study, or x-ray AND
  - Appropriate laboratory testing (chemistry profile, complete blood count, and urinalysis)
- For acute pelvic pain in a patient over the age of 65<sup>1, 2</sup>

### **Initial staging of prostate cancer (MRI Pelvis preferred)**

(Abdomen CT can also be approved for staging if PSMA PET not requested)

- Unfavorable intermediate risk, high risk and very high-risk disease
  - Gleason 8, 9, 10 disease
  - Gleason 4+3=7 disease (primary pattern 4)
  - Gleason 3+4=7 disease AND PSA > 10 or clinical stage ≥ T2b
  - Gleason 3+3=6 disease AND PSA > 20 or clinical stage ≥ T3
  - >50% cores positive for cancer in a random (non-targeted) biopsy<sup>4</sup>

\*Note: 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 (e.g., PSA 6 on finasteride adjusts to a PSA of 12)

### **Known prostate cancer for workup of recurrence and response to treatment when there is a contraindication for MRI and PSMA PET is not requested<sup>5</sup>**

- Initial treatment by radical prostatectomy
  - Failure of PSA to fall to undetectable levels or PSA detectable and rising on at least 2 subsequent determinations
- Initial treatment radiation therapy
  - Post-radiation therapy (Post-RT) rising PSA on at least 2 subsequent determinations or positive digital exam and is candidate for local therapy
- Known metastatic disease with progression on therapy does not require CI to MRI if CT is requested

### **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
- Surveillance: One follow-up exam to ensure no suspicious change has occurred in a tumor in the pelvis. No further surveillance CT 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<sup>4, 5</sup>
  - In a patient undergoing active treatment within the past year or as per surveillance imaging guidance for that cancer.
    - Known cancer with suspected pelvis 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)

- For abnormal incidental pelvic lymph nodes when follow-up is recommended based on prior imaging (initial 3-month follow-up)<sup>6</sup>

**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<sup>7, 8</sup>**

- Suspected perianal fistula or occult anorectal abscess (MRI preferred)<sup>9-11</sup>
- Suspected infection in the pelvis (based on elevated WBC, fever, anorexia, or nausea and vomiting)
- CT cystourethrography (CTCUG) in the preoperative setting<sup>12</sup>
- For suspected urethral stricture or periurethral pathology only if MRI cannot be done<sup>13, 14</sup>
- Complications of diverticulitis limited to the pelvis (prior imaging study is not required for diverticulitis diagnosis) with severe abdominal pain or severe tenderness or mass, not responding to antibiotic treatment

**For evaluation of known infection or inflammatory disease follow-up<sup>15</sup>**

- Any known infection to have created an abscess in the pelvis that requires re-evaluation
- Any history of fistula limited to the pelvis that requires re-evaluation or is suspected to have recurred
- For patients with recurrent fistula in anal or perianal Crohn's disease (MRI preferred)<sup>11</sup>
- Abnormal fluid collection seen on prior imaging that needs follow-up evaluation and limited to the pelvis

**For evaluation of Inflammatory Bowel Disease (IBD) such as Crohn's or Ulcerative Colitis (MRE should be considered for age < 35 to reduce radiation exposure). If only Pelvis CT is requested for IBD, requests should be resubmitted as CT Abdomen and Pelvis (see Guideline for criteria) unless it is known that the disease is limited to the pelvis.**

**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 the diagnosis of a recurrent hernia when ultrasound is negative or non-diagnostic

- Hernia with suspected complications (e.g., bowel obstruction or strangulation, or non-reducible) based on symptoms (e.g., diarrhea, hematochezia, vomiting, severe pain), physical exam (guarding, rebound) or prior imaging<sup>16</sup>
- Deep pelvic hernia is suspected (obturator, sciatic or perineal); does not require US first but this type of hernia needs to be specified in notes<sup>17</sup> (if CT Abdomen is also needed, resubmit as CT Abdomen and Pelvis)

**For evaluation of known or suspected non-aortic vascular disease (e.g., aneurysms, hematomas)<sup>18, 19</sup>, CTA/MRA is the preferred study when ultrasound is inconclusive**

- If a contraindication to CTA/MRA has been provided, CT can be approved
- Follow-up for post-endovascular repair (EVAR) or open repair of iliac artery aneurysms (CT preferred unless MRA/CTA is needed for procedural planning or to evaluate complex anatomy)
  - Routine, baseline study (post-op/intervention) is warranted within the first month after EVAR:
    - Repeat in 6 months if type II endoleak is seen (continue every 6 months x 24 months, then annually)
    - Repeat in 12 months if no endoleak or sac enlargement is seen
    - If neither endoleak nor AAA enlargement is seen on imaging one year after EVAR, CT is needed only if US is not feasible for annual surveillance (until year 5 as below)
  - If symptomatic or imaging shows increasing, or new findings related to stent graft – more frequent imaging may be needed

**Musculoskeletal Indications (all of the following require contraindication to MRI)**

- Known or suspected aseptic/avascular necrosis of hip(s) after completion of initial x-ray<sup>20</sup> (CT or MRI can be approved for surgical planning)
- Sacroiliitis (infectious or inflammatory, such as Ankylosing Spondylitis/ Spondyloarthropathies) after completion of x-ray and rheumatology workup<sup>21-23</sup>
- Sacroiliac joint dysfunction (after initial x-ray) when there is:
  - 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)
- 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<sup>24</sup>
- For evaluation of both hips when the patient meets hip CT guidelines (x-ray + persistent pain unresponsive to conservative treatment) for both the right and left hip, Pelvis CT is the preferred study.

- If labral tear is suspected due to a positive anterior impingement sign or posterior impingement sign, then bilateral hip CTs are the preferred studies (not Pelvis CT)
- If bilateral hip arthrograms are requested and otherwise meet guidelines, bilateral hip MRIs are the preferred studies (not Pelvis CT)
- When non-diagnostic imaging is requested for anatomic guidance for hip surgery, a CT Pelvis is approvable since measurements of both hips may be needed (only one non-diagnostic request can be approved and should include the surgical site)
- For further evaluation of congenital anomalies of the sacrum and pelvis and initial imaging has been performed

### Transplants

- Prior to solid organ transplantation
- For initial workup prior to Bone Marrow Transplantation (BMT) (along with CT Chest<sup>25</sup>, CT Abdomen, CT Sinus and Brain MRI<sup>26</sup>). Alternatively, PET might be sufficient to evaluate the abdomen and pelvis if indicated based on that malignancy (see PET Guideline)

### For evaluation of trauma<sup>27</sup>

- For evaluation of trauma with lab or physical findings of pelvic bleeding
- For evaluation of physical or radiological evidence of complex or occult pelvic fracture or for pre-operative planning of complex pelvic fractures

### Other Indications for Pelvic CT:

- Persistent pelvic pain not explained by previous imaging
- For diffuse, unexplained lower extremity edema with negative or inconclusive ultrasound<sup>28</sup>
- For suspected May-Thurner syndrome (CTV/MRV preferred)<sup>29, 30</sup>
- For further evaluation of a new onset or non-reducible varicocele<sup>31</sup>
- For assessment of pelvic congestion syndrome when findings on ultrasound are indeterminate (CTA/MRA preferred)<sup>32</sup>
- To locate an intrauterine device after ultrasound and plain x-ray are equivocal or non-diagnostic (imaging of the abdomen may also be indicated)<sup>33, 34</sup>
- For diagnosis or to guide treatment of urachal anomalies when ultrasound is non-diagnostic<sup>35, 36</sup>

### Other Indications for Pelvis CT when CI to MRI is provided:

- For follow-up of an indeterminate or inconclusive finding on ultrasound limited to the pelvis
- For location or evaluation of undescended testes in adults and in children, including determination of location of testes, if ordered by a specialist<sup>37</sup>

- 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<sup>38</sup>
- For evaluation of abnormal uterine bleeding when ultrasound findings are indeterminate<sup>39</sup>
  - 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 (CTA may be approved in addition to CT for preprocedural planning)<sup>40</sup>
- For evaluation of endometriosis when preliminary imaging has been completed or to follow up known endometriosis<sup>41, 42</sup>
- For further evaluation of suspected adenomyosis when ultrasound is inconclusive,<sup>43</sup> 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<sup>44</sup>
- For further assessment of a scrotal or penile mass when ultrasound is inconclusive<sup>45, 46</sup>
- For investigation of a malfunctioning penile prosthesis
- Suspected urethral diverticula and other imaging is inconclusive<sup>47</sup>
- For suspected patent urachus or other urachal abnormalities when ultrasound is non-diagnostic<sup>35, 36</sup>
- For transient or episodic hematospermia and age ≥ 40 with negative or inconclusive ultrasound
- For persistent hematospermia (duration > 1 month, any age) with negative or inconclusive ultrasound<sup>48</sup>

### Other Indications

Further evaluation of indeterminate findings on prior imaging (unless follow up is otherwise specified within the guideline):

- For initial evaluation of an inconclusive finding on a prior imaging report that requires further clarification
- One follow-up exam of a prior indeterminate MR/CT finding to ensure no suspicious interval change has occurred. (No further surveillance unless specified as highly suspicious or change was found on last follow-up exam)

### Pre-operative evaluation

- For diagnostic purposes prior to pelvic surgery or procedure

### For post-operative/procedural evaluation

- Follow-up of known or suspected post-operative complication involving the hips or the pelvis<sup>49, 50</sup> 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

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## BACKGROUND

CT provides direct visualization of anatomic structures in the abdomen and pelvis and is a fast-imaging tool used to detect and characterize disease involving the abdomen and pelvis. Pelvic imaging begins at the iliac crests through pubic symphysis. It has an ability to demonstrate abnormal calcifications or fluid/gas patterns in the viscera or peritoneal space.

In general, ionizing radiation from CT should be avoided during pregnancy. Ultrasound is clearly a safer imaging option and is the first imaging test of choice; although, CT after equivocal ultrasound has been validated for diagnosis. Clinicians should exercise increased caution with CT imaging in children, pregnant women, and young adults due to the risks of exposure to ionizing radiation. Screening for pregnancy as part of a work-up is suggested to minimize the number of unexpected radiation exposures for women of childbearing age.

## OVERVIEW

**\*Conservative Therapy:** This 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<sup>51</sup>:

- 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.

**Ultrasound should be considered prior to a request for Pelvis CT for the following:**

- Initial evaluation or follow-up of ovarian mass or abnormal physical finding

**Combination request of Abdomen CT/Chest CT** - A Chest CT will produce images to the level of L3. Documentation for combo is required.

**Helical CT of Prostate Cancer** – Conventional CT is not useful in detecting prostate cancer as it does not allow direct visualization. Contrast-enhanced MRI is more useful in detecting prostate cancer. MRI is 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 systemic biopsy.<sup>52</sup> Helical CT of the prostate may be a useful alternative to MRI in patients with an increasing PSA level and negative findings on biopsy but is not the imaging study of choice.

**Pelvic Trauma and CT Imaging** – Helical CT is useful in the evaluation of low- or high-flow vascular injuries in patient with blunt or penetrating pelvic trauma. It provides detailing of fractures and position of fracture fragments along with the extent of diastasis of the sacroiliac joints and pubic symphysis. CT helps determine whether pelvic bleeding is present and can identify the source of bleeding. With CT, high flow hemorrhage can be distinguished from low flow hemorrhage aiding the proper treatment.

**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. Groin hernias are at increased risk for incarceration/strangulation in women, right femoral hernias, and when there is a hernia-related hospitalization in the year preceding hernia repair. Morbidity and mortality are increased for strangulated hernias in patients over 65, prolonged symptoms, incarceration of over 24 hours, symptoms of > 3 days, bowel obstruction, anticoagulant use.<sup>53</sup> 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.<sup>54</sup> According to Miller et al, “Magnetic resonance imaging is generally not considered a first- or even second-line evaluation modality for hernias...”<sup>55</sup> Based on this analysis MRI is recommended only when ultrasound and CT have been performed and fail to make a diagnosis.

**Weight loss definitions and initial evaluation**<sup>56, 57</sup> – Unintentional weight loss is considered clinically significant if the amount of weight lost over 12 months is  $\geq 5\%$ . Older age and higher percentage of weight loss correlates with higher likelihood of malignancy. A targeted evaluation is recommended when there are signs or symptoms suggestive of a specific source. For example, when there is clinically significant weight loss with abdominal pain that prompts an evaluation for an abdominal source of the weight loss; CXR and labs such as TSH would not be needed prior to abdominal imaging. Conversely a smoker with a cough and weight loss would not start with abdominal imaging, a chest x-ray would be the first test to start with. When there is no suspected diagnosis, initial evaluation includes CXR, age-appropriate cancer screening (such as colonoscopy and mammography) and labs (including CBC, CMP, HbA1C, TSH, stool

hemocult, ESR/CRP, HIV, Hepatitis C). If this initial evaluation fails to identify a cause of weight loss, then the patient is monitored and if progressive weight loss is seen on subsequent visits/weights, then CT Chest/Abdomen/Pelvis is reasonable; MRI if there is a contraindication to CT such as contrast allergy or impaired renal function.<sup>58</sup>

## REFERENCES

1. Lehtimäki TT, Valtonen H, Miettinen P, Juvonen P, Paaajanen H, Vanninen R. A randomised clinical trial of routine versus selective CT imaging in acute abdomen: Impact of patient age on treatment costs and hospital resource use. *Eur J Radiol*. Feb 2017;87:1-7. doi:10.1016/j.ejrad.2016.11.031
2. American College of Radiology. ACR Appropriateness Criteria® Postmenopausal Acute Pelvic Pain. American College of Radiology (ACR). Updated 2020. Accessed November 15, 2022. <https://acsearch.acr.org/docs/3102398/Narrative/>
3. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Prostate Cancer Version 1.2023. National Comprehensive Cancer Network (NCCN). Updated September 16, 2022. Accessed November 15, 2022. [https://www.nccn.org/professionals/physician\\_gls/pdf/prostate.pdf](https://www.nccn.org/professionals/physician_gls/pdf/prostate.pdf)
4. NCCN Imaging Appropriate Use Criteria™. National Comprehensive Cancer Network (NCCN). Accessed January 31, 2023. <https://www.nccn.org/professionals/imaging/default.aspx>
5. Bourgioti C, Chatoupis K, Mouloupoulos LA. Current imaging strategies for the evaluation of uterine cervical cancer. *World J Radiol*. Apr 28 2016;8(4):342-54. doi:10.4329/wjr.v8.i4.342
6. Bjurlin MA, Carroll PR, Eggener S, et al. Update of the Standard Operating Procedure on the Use of Multiparametric Magnetic Resonance Imaging for the Diagnosis, Staging and Management of Prostate Cancer. *J Urol*. Apr 2020;203(4):706-712. doi:10.1097/ju.0000000000000617
7. Cartwright SL, Knudson MP. Diagnostic imaging of acute abdominal pain in adults. *Am Fam Physician*. Apr 1 2015;91(7):452-9.
8. American College of Radiology. ACR Appropriateness Criteria® Anorectal Disease. American College of Radiology (ACR). Updated 2021. Accessed November 15, 2022. <https://acsearch.acr.org/docs/3102384/Narrative/>
9. Liang C, Lu Y, Zhao B, Du Y, Wang C, Jiang W. Imaging of anal fistulas: comparison of computed tomographic fistulography and magnetic resonance imaging. *Korean J Radiol*. Nov-Dec 2014;15(6):712-23. doi:10.3348/kjr.2014.15.6.712
10. O'Malley RB, Al-Hawary MM, Kaza RK, Wasnik AP, Liu PS, Hussain HK. Rectal imaging: part 2, Perianal fistula evaluation on pelvic MRI--what the radiologist needs to know. *AJR Am J Roentgenol*. Jul 2012;199(1):W43-53. doi:10.2214/ajr.11.8361
11. Vogel JD, Johnson EK, Morris AM, et al. Clinical Practice Guideline for the Management of Anorectal Abscess, Fistula-in-Ano, and Rectovaginal Fistula. *Dis Colon Rectum*. Dec 2016;59(12):1117-1133. doi:10.1097/dcr.0000000000000733
12. Maciejewski C, Rourke K. Imaging of urethral stricture disease. *Transl Androl Urol*. Feb 2015;4(1):2-9. doi:10.3978/j.issn.2223-4683.2015.02.03
13. Lv XG, Peng XF, Feng C, Xu YM, Shen YL. The application of CT voiding urethrography in the evaluation of urethral stricture associated with fistula: a preliminary report. *Int Urol Nephrol*. Aug 2016;48(8):1267-1273. doi:10.1007/s11255-016-1286-z
14. Aldamanhori R, Inman R. The treatment of complex female urethral pathology. *Asian J Urol*. Jul 2018;5(3):160-163. doi:10.1016/j.ajur.2018.03.003

15. American College of Radiology. ACR Appropriateness Criteria® Crohn Disease. American College of Radiology. Updated 2019. Accessed November 15, 2022. <https://acsearch.acr.org/docs/69470/Narrative/>
16. Halligan S, Parker SG, Plumb AAO, et al. Use of imaging for pre- and post-operative characterisation of ventral hernia: systematic review. *Br J Radiol*. Sep 2018;91(1089):20170954. doi:10.1259/bjr.20170954
17. American College of Radiology. ACR Appropriateness Criteria® Hernia. American College of Radiology. Updated 2022. Accessed March 2, 2023. <https://acsearch.acr.org/docs/3158169/Narrative/>
18. Khosa F, Krinsky G, Macari M, Yucel EK, Berland LL. Managing incidental findings on abdominal and pelvic CT and MRI, Part 2: white paper of the ACR Incidental Findings Committee II on vascular findings. *J Am Coll Radiol*. Oct 2013;10(10):789-94. doi:10.1016/j.jacr.2013.05.021
19. Uberoi R, Tsetis D, Shrivastava V, Morgan R, Belli AM. Standard of practice for the interventional management of isolated iliac artery aneurysms. *Cardiovasc Intervent Radiol*. Feb 2011;34(1):3-13. doi:10.1007/s00270-010-0055-0
20. American College of Radiology. ACR Appropriateness Criteria® Osteonecrosis of the Hip. American College of Radiology. Updated 2022. Accessed December 28, 2022. <https://acsearch.acr.org/docs/69420/Narrative/>
21. American College of Radiology. ACR Appropriateness Criteria® Inflammatory Back Pain: Known or Suspected Axial Spondyloarthritis. American College of Radiology (ACR). Updated 2021. Accessed November 15, 2022. <https://acsearch.acr.org/docs/3094107/Narrative/>
22. Jans L, Van Praet L, Elewaut D, et al. MRI of the SI joints commonly shows non-inflammatory disease in patients clinically suspected of sacroiliitis. *Eur J Radiol*. Jan 2014;83(1):179-84. doi:10.1016/j.ejrad.2013.10.001
23. Kang Y, Hong SH, Kim JY, et al. Unilateral Sacroiliitis: Differential Diagnosis Between Infectious Sacroiliitis and Spondyloarthritis Based on MRI Findings. *AJR Am J Roentgenol*. Nov 2015;205(5):1048-55. doi:10.2214/ajr.14.14217
24. Ro TH, Edmonds L. Diagnosis and Management of Piriformis Syndrome: A Rare Anatomic Variant Analyzed by Magnetic Resonance Imaging. *J Clin Imaging Sci*. 2018;8:6. doi:10.4103/jcis.JCIS\_58\_17
25. Gerull S, Medinger M, Heim D, Passweg J, Stern M. Evaluation of the Pretransplantation Workup before Allogeneic Transplantation. *Biology of Blood and Marrow Transplantation*. 2014/11/01/ 2014;20(11):1852-1856. doi:https://doi.org/10.1016/j.bbmt.2014.06.029
26. Kaste SC, Kaufman RA, Sunkara A, et al. Routine pre- and post-hematopoietic stem cell transplant computed tomography of the abdomen for detecting invasive fungal infection has limited value. *Biol Blood Marrow Transplant*. Jun 2015;21(6):1132-5. doi:10.1016/j.bbmt.2015.02.023
27. American College of Radiology. ACR Appropriateness Criteria® Major Blunt Trauma. American College of Radiology. Updated 2019. Accessed November 15, 2022. <https://acsearch.acr.org/docs/3102405/Narrative/>
28. Hoshino Y, Machida M, Shimano Si, et al. Unilateral Leg Swelling: Differential Diagnostic Issue Other than Deep Vein Thrombosis. *Journal of General and Family Medicine*. 2016;17(4):311-314.

29. Ibrahim W, Al Safran Z, Hasan H, Zeid WA. Endovascular management of may-thurner syndrome. *Ann Vasc Dis.* 2012;5(2):217-21. doi:10.3400/avd.cr.12.00007
30. Wu WL, Tzeng WS, Wu RH, et al. Comprehensive MDCT evaluation of patients with suspected May-Thurner syndrome. *AJR Am J Roentgenol.* Nov 2012;199(5):W638-45. doi:10.2214/ajr.11.8040
31. Schlegel PN, Sigman M, Collura B, et al. Diagnosis and Treatment of Infertility in Men: AUA/ASRM Guideline Part I. *J Urol.* Jan 2021;205(1):36-43. doi:10.1097/ju.0000000000001521
32. Bookwalter CA, VanBuren WM, Neisen MJ, Bjarnason H. Imaging Appearance and Nonsurgical Management of Pelvic Venous Congestion Syndrome. *Radiographics.* Mar-Apr 2019;39(2):596-608. doi:10.1148/rg.2019180159
33. Boortz HE, Margolis DJ, Ragavendra N, Patel MK, Kadell BM. Migration of intrauterine devices: radiologic findings and implications for patient care. *Radiographics.* Mar-Apr 2012;32(2):335-52. doi:10.1148/rg.322115068
34. Nowitzki KM, Hoimes ML, Chen B, Zheng LZ, Kim YH. Ultrasonography of intrauterine devices. *Ultrasonography.* Jul 2015;34(3):183-94. doi:10.14366/usg.15010
35. Buddha S, Menias CO, Katabathina VS. Imaging of urachal anomalies. *Abdom Radiol (NY).* Dec 2019;44(12):3978-3989. doi:10.1007/s00261-019-02205-x
36. Parada Villavicencio C, Adam SZ, Nikolaidis P, Yaghmai V, Miller FH. Imaging of the Urachus: Anomalies, Complications, and Mimics. *Radiographics.* Nov-Dec 2016;36(7):2049-2063. doi:10.1148/rg.2016160062
37. Kolon TF, Herndon CD, Baker LA, et al. Evaluation and treatment of cryptorchidism: AUA guideline. *J Urol.* Aug 2014;192(2):337-45. doi:10.1016/j.juro.2014.05.005
38. American College of Radiology. ACR Appropriateness Criteria® Acute Pelvic Pain in the Reproductive Age Group. American College of Radiology. Updated 2015. Accessed December 28, 2022. <https://acsearch.acr.org/docs/69503/narrative/>
39. American College of Radiology. ACR Appropriateness Criteria® Abnormal Uterine Bleeding. American College of Radiology (ACR). Updated 2020. Accessed December 28, 2022. <https://acsearch.acr.org/docs/69458/Narrative/>
40. Deshmukh SP, Gonsalves CF, Guglielmo FF, Mitchell DG. Role of MR imaging of uterine leiomyomas before and after embolization. *Radiographics.* Oct 2012;32(6):E251-81. doi:10.1148/rg.326125517
41. Siegelman ES, Oliver ER. MR imaging of endometriosis: ten imaging pearls. *Radiographics.* Oct 2012;32(6):1675-91. doi:10.1148/rg.326125518
42. American College of Radiology. ACR Appropriateness Criteria® Female Infertility. American College of Radiology. Updated 2019. Accessed December 28, 2022. <https://acsearch.acr.org/docs/3093336/Narrative/>
43. Cunningham RK, Horrow MM, Smith RJ, Springer J. Adenomyosis: A Sonographic Diagnosis. *Radiographics.* Sep-Oct 2018;38(5):1576-1589. doi:10.1148/rg.2018180080
44. Kilcoyne A, Shenoy-Bhangle AS, Roberts DJ, Sisodia RC, Gervais DA, Lee SI. MRI of Placenta Accreta, Placenta Increta, and Placenta Percreta: Pearls and Pitfalls. *AJR Am J Roentgenol.* Jan 2017;208(1):214-221. doi:10.2214/ajr.16.16281
45. Kirkham A. MRI of the penis. *Br J Radiol.* Nov 2012;85 Spec No 1(Spec Iss 1):S86-93. doi:10.1259/bjr/63301362

46. Parker RA, 3rd, Menias CO, Quazi R, et al. MR Imaging of the Penis and Scrotum. *Radiographics*. Jul-Aug 2015;35(4):1033-50. doi:10.1148/rg.2015140161
47. Dwarkasing RS, Dinkelaar W, Hop WC, Steensma AB, Dohle GR, Krestin GP. MRI evaluation of urethral diverticula and differential diagnosis in symptomatic women. *AJR Am J Roentgenol*. Sep 2011;197(3):676-82. doi:10.2214/ajr.10.6144
48. Hosseinzadeh K, Oto A, Allen BC, et al. ACR Appropriateness Criteria<sup>®</sup> Hematospermia. *J Am Coll Radiol*. May 2017;14(5s):S154-s159. doi:10.1016/j.jacr.2017.02.023
49. Yanny S, Cahir JG, Barker T, et al. MRI of aseptic lymphocytic vasculitis-associated lesions in metal-on-metal hip replacements. *AJR Am J Roentgenol*. Jun 2012;198(6):1394-402. doi:10.2214/ajr.11.7504
50. Davis DL, Morrison JJ. Hip Arthroplasty Pseudotumors: Pathogenesis, Imaging, and Clinical Decision Making. *J Clin Imaging Sci*. 2016;6:17. doi:10.4103/2156-7514.181493
51. Hutchins TA, Peckham M, Shah LM, et al. ACR Appropriateness Criteria<sup>®</sup> Low Back Pain. American College of Radiology. Updated 2021. Accessed December 28, 2022. <https://acsearch.acr.org/docs/69483/Narrative/>
52. Borofsky S, George AK, Gaur S, et al. What Are We Missing? False-Negative Cancers at Multiparametric MR Imaging of the Prostate. *Radiology*. Jan 2018;286(1):186-195. doi:10.1148/radiol.2017152877
53. Simons MP, Smietanski M, Bonjer HJ, et al. International guidelines for groin hernia management. *Hernia*. Feb 2018;22(1):1-165. doi:10.1007/s10029-017-1668-x
54. Robinson A, Light D, Kasim A, Nice C. A systematic review and meta-analysis of the role of radiology in the diagnosis of occult inguinal hernia. *Surg Endosc*. Jan 2013;27(1):11-8. doi:10.1007/s00464-012-2412-3
55. Miller J, Cho J, Michael MJ, Saouaf R, Towfigh S. Role of imaging in the diagnosis of occult hernias. *JAMA Surg*. Oct 2014;149(10):1077-80. doi:10.1001/jamasurg.2014.484
56. Zawada ET, Jr. Malnutrition in the elderly. Is it simply a matter of not eating enough? *Postgrad Med*. Jul 1996;100(1):207-8, 211-4, 220-2 passim. doi:10.3810/pgm.1996.07.17
57. Nicholson BD, Thompson MJ, Hobbs FDR, et al. Measured weight loss as a precursor to cancer diagnosis: retrospective cohort analysis of 43 302 primary care patients. *J Cachexia Sarcopenia Muscle*. Oct 2022;13(5):2492-2503. doi:10.1002/jcsm.13051
58. Christine Ritchie M, MSPH., Michi Yukawa M, MPH. Geriatric nutrition: Nutritional issues in older adults. Wolters Kluwer. Updated August 9, 2021. Accessed March 2, 2023,

**POLICY HISTORY**

Date	Summary
March 2023	<ul style="list-style-type: none"> <li>• Prostate cancer: updated guidance based on new NCCN criteria</li> <li>• IBD: eliminated indications for abdomen alone or pelvis imaging alone, resubmission as abdomen and pelvis CT required unless limited indication</li> <li>• Hernia: added indication for deep pelvic hernia</li> <li>• Aneurysm: eliminated indications for abdomen alone or pelvis imaging alone, resubmission as abdomen and pelvis CT required unless limited indication, updated guidance for imaging intervals post-repair</li> <li>• Musculoskeletal: additional guidance provided for hip imaging, non-diagnostic requests added, corrected statement requiring abnormal x-ray to requiring prior x-ray</li> <li>• Transplant: added section (added section from MRI if CI to MRI provided)</li> <li>• General Information moved to beginning of guideline with added statement on clinical indications not addressed in this guideline</li> <li>• Added statement regarding further evaluation of indeterminate findings on prior imaging</li> <li>• Aligned sections across body imaging guidelines</li> </ul>
April 2022	<ul style="list-style-type: none"> <li>• Added abnormal incidental pelvic lymph nodes when follow-up is recommended based on prior imaging (initial 3-month follow-up) to “Evaluation of suspicious or known mass/tumors”</li> <li>• Within sacroiliitis, clarification of non-diagnostic or indeterminate findings</li> </ul>

## Reviewed / Approved by NIA Clinical Guideline Committee

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