

<b>*National Imaging Associates, Inc.</b>	
<b>Clinical guideline</b> <b>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

## **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



hemoccult, 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>

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## 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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