UNITEDHEALTHCARE® COMMUNITY PLAN:
RADIOLOGY IMAGING COVERAGE DETERMINATION GUIDELINE

Pediatric Musculoskeletal Imaging Guidelines (For Ohio Only)

V2.0.2026

Guideline Number: CSRAD019OH.F

Effective Date: September 1, 2026

Application (for Ohio Only)

This Medical Policy only applies to the state of Ohio. Any requests for services that are stated as unproven or services for which there is a coverage or quantity limit will be evaluated for medical necessity using Ohio Administrative Code 5160-1-01.

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Guideline Development (Preface-1)

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- These evidence-based, proprietary clinical guidelines evaluate a range of advanced imaging and procedures, including NM, US, CT, MRI, PET, Radiation Oncology, Sleep Studies, as well as Cardiac, Musculoskeletal and Spine interventions.
- UnitedHealthcare reserves the right to change and update the guidelines. The guidelines undergo a formal review annually. These clinical guidelines are based on current evidence supported by major national and international association and society guidelines and criteria, peer-reviewed literature, and major treatises as well as input from health plans, and practicing academic and community-based physicians.
- These guidelines are not intended to supersede or replace sound medical judgment, but instead, should facilitate the identification of the most appropriate imaging or other designated procedure given the individual's clinical condition. These guidelines are written to cover medical conditions as experienced by the majority of individuals. However, these guidelines may not be applicable in certain clinical circumstances, and physician judgment can override the guidelines.
- These guidelines provide evidence-based, clinical benefits with a focus on health care quality and patient safety.
- Clinical decisions, including treatment decisions, are the responsibility of the individual and his/her provider. Clinicians are expected to use independent medical judgment, which takes into account the clinical circumstances to determine individual management decisions.

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Benefits, Coverage Policies, and Eligibility Issues (Preface-2)

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Benefits, Coverage Policies, and Eligibility Issues (Preface-2.1)
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Benefits, Coverage Policies, and Eligibility Issues (Preface-2.1)

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Investigational and Experimental Studies

- Certain studies, treatments, procedures, or devices may be considered experimental, investigational, or unproven for any condition, illness, disease, injury being treated if one of the following is present:
  - if there is a paucity of supporting evidence;
  - if the evidence has not matured to exhibit improved health parameters;
  - if clinical utility has not been demonstrated in any condition; OR
  - if the study, treatment, procedure, or device lacks a collective opinion of support
- Supporting evidence includes standards that are based on credible scientific evidence published in peer-reviewed medical literature (such as well conducted randomized clinical trials or cohort studies with a sample size of sufficient statistical power) generally recognized by the relevant medical community. Collective opinion of support includes physician specialty society recommendations and the views of physicians practicing in relevant clinical areas when physician specialty society recommendations are not available.

Clinical and Research Trials

- Similar to investigational and experimental studies, clinical trial imaging requests are reviewed to determine whether they meet these evidence-based clinical guidelines.
- Imaging studies which are inconsistent with established clinical standards, or are requested for data collection and not used in direct clinical management are not medically necessary.

CPT Codes

- The inclusion of any CPT code in the clinical guidelines does not imply that the code is under management or requires prior authorization.

References (Preface-2)

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1. 2.42 USC 300gg-8: Coverage for individuals participating in approved clinical trials. House.gov. Published 2024.

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Clinical Information (Preface-3)

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Clinical Information (Preface-3.1)
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Clinical Information (Preface-3.1)

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Clinical Documentation and Age Considerations

- These clinical guidelines use an evidence-based approach to determine the most appropriate procedure for each individual, at the most appropriate time in the diagnostic and treatment cycle. These clinical guidelines are framed by:
  - clinical presentation of the individual, rather than the studies requested
  - adequate clinical information that must be submitted to UnitedHealthcare in order to establish medical necessity for advanced imaging or other designated procedures including, but not limited to, the following:
    - Pertinent clinical evaluation since the onset or change in symptoms including a detailed history, physical examination, appropriate laboratory studies, and appropriate prior imaging studies.
      - Condition-specific guideline sections may describe additional clinical information which is required for a pertinent clinical evaluation.
      - The Spine and Musculoskeletal guidelines require x-ray studies from when the current episode of symptoms has started or changed.
      - Advanced imaging or other designated procedures should not be ordered prior to clinical evaluation of an individual by the physician treating the individual. This may include referral to a consultant specialist who will make further treatment decisions.
      - Other meaningful technological contact (telehealth visit, telephone or video call, electronic mail or messaging) since the onset or change in symptoms by an established individual can serve as a pertinent clinical evaluation.
        - Some conditions may require a face-to-face evaluation as discussed in the applicable condition-specific guideline sections.
    - A recent clinical evaluation may be unnecessary if the individual is undergoing a guideline-supported, scheduled follow-up imaging or other designated procedural evaluation. Exceptions due to routine surveillance indications are addressed in the applicable condition-specific guideline sections.
  - The evidence-based approach to determine the most appropriate procedure for each individual requires submission of medical records pertinent to the requested imaging or other designated procedures.
- Many conditions affecting the pediatric population are different diagnoses than those occurring in the adult population. For those diseases which occur in both pediatric and adult populations, minor differences may exist in management due to individual age, comorbidities, and differences in disease natural history between children and adults.

- Individuals who are 18 years old or younger should be imaged according to the Pediatric Imaging Guidelines if discussed in the condition-specific guideline sections. Any conditions not specifically discussed in the Pediatric Imaging Guidelines should be imaged according to the General Imaging Guidelines. Individuals who are >18 years old should be imaged according to the General Imaging Guidelines, except where directed otherwise by a specific guideline section.

General Imaging Information

- "Standard" or "conventional" imaging is most often performed in the initial and subsequent evaluations of malignancy. Standard or conventional imaging includes plain film, CT, MRI, or US.
  - Often, further advanced imaging is needed when initial imaging, such as ultrasound, CT, or MRI does not answer the clinical question. Uncertain, indeterminate, inconclusive, or equivocal may describe these situations.
- Appropriate use of contrast is a very important component of evidence-based advanced imaging use.
  - The appropriate levels of contrast for an examination (i.e., without contrast, with contrast, without and with contrast) is determined by the evidence-based guidance reflected in the condition-specific guideline sections.
  - If, during the performance of a non-contrast imaging study, there is the unexpected need to use contrast in order to evaluate a possible abnormality, then that is appropriate.

Ultrasound

- Diagnostic ultrasound uses high-frequency sound waves to evaluate soft tissue structures and vascular structures utilizing grey scale and Doppler techniques.
- Ultrasound allows for dynamic real-time imaging at the bedside.
  - Ultrasound is limited in areas where there is dense bone or other calcification.
  - Ultrasound also has a relatively limited imaging window so may be of limited value in evaluating very large abnormalities.
  - In general, ultrasound is highly operator-dependent, and proper training and experience are required to perform consistent, high-quality evaluations.
- Indications for ultrasound may include, but are not limited to, the following:
  - Obstetric and gynecologic imaging
  - Soft tissue and visceral imaging of the chest, abdomen, pelvis, and extremities
  - Brain and spine imaging when not obscured by dense bony structures
  - Vascular imaging when not obscured by dense bony structures
  - Procedural guidance when not obscured by dense bony structures
  - Initial evaluation of ill-defined soft tissue masses or fullness and differentiating adenopathy from mass or cyst. Prior to advanced imaging, ultrasound can be

very beneficial in selecting the proper modality, body area, image sequences, and contrast level that will provide the most definitive information for the individual.
- More specific guidance for ultrasound usage, including exceptions to this general guidance, can be found throughout the condition-specific guidelines.

Computed Tomography (CT)

- The AMA CPT® manual does not describe nor assign any minimum or maximum number of sequences for any CT study. CT imaging protocols are often influenced by the individual's clinical situation and additional sequences are not uncommon. There are numerous CT protocols that may be performed to evaluate specific clinical questions, and this technology is constantly undergoing development.
- CT utilizes ionizing radiation to create cross-sectional and volumetric images of the body.
  - Advantages over ultrasound include a much larger field of view and faster completion time in general. Disadvantages compared to ultrasound include lack of portability and exposure to ionizing radiation.
  - Advantages over MRI include faster imaging and a more spacious scanner area limiting claustrophobia. Disadvantages compared to MRI include decreased soft tissue definition, especially with non-contrast imaging, and exposure to ionizing radiation.
- CT can be performed without, with, or without and with intravenous (IV) contrast depending on the clinical indication and body area.
  - In general, non-contrast imaging is appropriate for evaluating structures with significant tissue density differences such as lung parenchyma and bony structures, or when there is a contraindication to contrast.
  - In general, CT with contrast is the most common level of contrast and can be used when there is need for improved vascular or soft tissue resolution, including better characterization of known or suspected malignancy, as well as infectious and inflammatory conditions.
  - CT without and with contrast has a limited role as the risks of doubling the ionizing radiation exposure rarely outweigh the benefits of multiphasic imaging, though there are some exceptions which include, but are not limited to, the following:
    - Characterization of a mass
    - Characterization of arterial and venous anatomy
    - CT with contrast may be used to better characterize findings on a very recent (within two weeks) inconclusive non-contrast CT where the guidelines would support CT without and with contrast.
  - More specific guidance for CT contrast usage, including exceptions to this general guidance, can be found throughout the condition-specific guidelines.
- Shellfish allergy:

  - It is commonly assumed that an allergy to shellfish indicates iodine allergy, and that this implies an allergy to iodinated contrast media used with CT. However, this is NOT true. Shellfish allergy is due to tropomyosins. Iodine plays no role in these allergic reactions. Allergies to shellfish do not increase the risk of reaction to iodinated contrast media any more than that of other allergens.
- Enteric contrast (oral or rectal) is sometimes used in abdominal imaging. There is no specific CPT® code which refers to enteric contrast.
- The appropriate contrast level and anatomic region in CT imaging is specific to the clinical indication, as listed in the condition-specific guideline sections.
- CT should not be used to replace MRI in an attempt to avoid sedation unless it is listed as a recommended study in the appropriate condition-specific guideline.
- There are significant potential adverse effects associated with the use of iodinated contrast media. These include hypersensitivity reactions, thyroid dysfunction, and contrast-induced nephropathy (CIN). Individuals with impaired renal function are at increased risk for CIN.
- Both contrast CT and MRI are considered to have the same risk profile with renal failure (GFR <30mL/min).
- The use of CT contrast should proceed with caution in pregnant and breastfeeding individuals. There is a theoretical risk of contrast toxicity to the fetal and infant thyroid. The procedure can be performed if the specific need for that contrast-enhanced procedure outweighs risk to the fetus. Breastfeeding individuals may reduce this risk by choosing to pump and discard breast milk for 12-24 hours after the contrast injection.
- CT without contrast is medically necessary if clinical criteria for CT with contrast are met AND the individual has/is:
  - elevated blood urea nitrogen (BUN) and/or creatinine
  - renal insufficiency
  - allergies to iodinated contrast
  - thyroid disease which could be treated with I-131
  - diabetes
  - very elderly
  - urgent or emergent settings due to availability
  - trauma
- CT is superior to other imaging modalities in certain conditions including, but not limited to, the following:
  - Screening following trauma
  - Imaging pulmonary disease
  - Imaging abdominal and pelvic viscera
  - Imaging of complex fractures

  - Evaluation of inconclusive findings on Ultrasound or MRI, or if there is a contraindication to MRI
- More specific guidance for CT usage, including exceptions to this general guidance, can be found throughout the condition-specific guidelines.

Magnetic Resonance Imaging (MRI)

- The AMA CPT® manual does not describe nor assign any minimum or maximum number of sequences for any MRI study. MRI protocols are often influenced by the individual's clinical situation and additional sequences are not uncommon. There are numerous MRI sequences that may be performed to evaluate specific clinical questions, and this technology is constantly undergoing development.
- Magnetic Resonance Imaging (MRI) utilizes the interaction between the intrinsic radiofrequency of certain molecules in the body (hydrogen in most cases) and a strong external magnetic field.
  - MRI is often superior for advanced imaging of soft tissues and can also define physiological processes in some instances (e.g., edema, loss of circulation [AVN], and increased vascularity [tumors]).
  - MRI does not use ionizing radiation and even non-contrast images have much higher soft tissue definition than CT or Ultrasound.
  - MRI typically takes much longer than either CT or Ultrasound, and for some individuals may require sedation. It is also much more sensitive to individual motion that can degrade image quality than either CT or Ultrasound.
- MRI Breast and MRI Chest are not interchangeable, as they focus detailed sequences on different adjacent body parts.
- MRI may be utilized either as the primary advanced imaging modality, or when further definition is needed based on CT or ultrasound imaging.
- Most orthopedic and dental implants are not magnetic. These include hip and knee replacements; plates, screws, and rods used to treat fractures; and cavity fillings. Yet, all of these metal implants can distort the MRI image if near the part of the body being scanned.
  - Other implants, however, may have contraindications to MRI. These include the following:
    - pacemakers
    - ICD or heart valves
    - metal implants in the brain
    - metal implants in the eyes or ears
    - infusion catheters and bullets or shrapnel
  - CT can therefore be an alternative study to MRI in these scenarios.
- The contrast level and anatomic region in MRI imaging is specific to the clinical indication, as listed in the specific guideline sections.

- MRI utilizing Xenon Xe 129 (CPT® C9791) for contrast is considered investigational and experimental at this time. MRI with or with and without contrast in these guidelines refers to MRI utilizing gadolinium for contrast.
- MRI is commonly performed without, and without and with contrast.
  - Non-contrast imaging offers excellent tissue definition.
  - Imaging without and with contrast is commonly used when needed to better characterize tissue perfusion and vascularization.
    - Most contrast is gadolinium based and causes T2 brightening of the vascular and extracellular spaces.
    - Some specialized gadolinium and non-gadolinium contrast agents are available, and are most commonly used for characterizing liver lesions.
  - MRI with contrast only is rarely appropriate and is usually used to better characterize findings on a recent inconclusive non-contrast MRI, commonly called a completion study.
  - MRI contrast is relatively contraindicated in pregnant individuals.
  - More specific guidance for MRI contrast usage, including exceptions to this general guidance, can be found throughout the condition-specific guidelines.
- MRI may be preferred in individuals with renal failure and in individuals allergic to intravenous CT contrast.
  - Both contrast CT and MRI are considered to have the same risk profile with renal failure (GFR <30mL/min).
  - Gadolinium can cause Nephrogenic Systemic Fibrosis (NSF). The greater the exposure to gadolinium in individuals with a low GFR (especially if on dialysis), the greater the chance of individuals developing NSF.
  - Multiple studies have demonstrated potential for gadolinium deposition following the use of gadolinium-based contrast agents (GBCAs) for MRI studies. The U.S. Food and Drug Administration (FDA) has noted that there is currently no evidence to suggest that gadolinium retention in the brain is harmful and restricting GBCAs use is not warranted at this time. It has been recommended that GBCA use should be limited to circumstances in which additional information provided by the contrast agent is necessary and the necessity of repetitive MRIs with GBCAs should be assessed.
- A CT is medically necessary in place of an MRI when clinical criteria are met for MRI AND there is a contraindication to having an MRI (e.g., pacemaker, ICD, insulin pump, neurostimulator, etc.).
  - When replacing MRI with CT, contrast level matching should occur as follows:
    - MRI without contrast → CT without contrast
    - MRI without and with contrast → CT with contrast or CT without and with contrast
- The following situations may impact the appropriateness for MRI and/or MR contrast:

  - Caution should be taken in the use of gadolinium in individuals with renal failure.
  - The use of gadolinium contrast agents is relatively contraindicated during pregnancy unless the specific need for that procedure outweighs risk to the fetus.
  - MRI can be performed for non-ferromagnetic body metals (i.e., titanium), although some imaging facilities will consider it contraindicated if recent surgery, regardless of the metal type.
- MRI should not be used as a replacement for CT for the sole reason of avoidance of ionizing radiation when MRI is not medically necessary in the condition-based guidelines, since it does not solve the problem of overutilization.
- MRI is superior to other imaging modalities in certain conditions including, but not limited to, the following:
  - Imaging the brain and spinal cord
  - Characterizing visceral and musculoskeletal soft tissue masses
  - Evaluating musculoskeletal soft tissues including ligaments and tendons
  - Evaluating inconclusive findings on ultrasound or CT
  - Individuals who are pregnant or have high radiation sensitivity
  - Suspicion, diagnosis, or surveillance of infections
- More specific guidance for MRI usage, including exceptions to this general guidance, can be found throughout the condition-specific guidelines.

Positron Emission Tomography (PET)

- PET is a nuclear medicine study that uses a positron emitting radiotracer to create cross-sectional and volumetric images based on tissue metabolism.
- Conventional imaging (frequently CT, sometimes MRI or bone scan) of the affected area(s) drives much of initial and restaging and surveillance imaging for malignancy and other chronic conditions. PET is not medically necessary for surveillance imaging unless specifically stated in the condition-specific guideline sections.
- PET/MRI is generally not medically necessary, see **PET-MRI (Preface-5.3)**.
- PET is rarely performed as a single modality, but is typically performed as a combined PET/CT.
  - The unbundling of PET/CT into separate PET and diagnostic CT CPT® codes is not medically necessary, because PET/CT is done as a single study.
- PET/CT lacks the tissue definition of CT or MRI but is fairly specific for metabolic activity based on the radiotracer used.
- Indications for PET/CT may include the following:
  - Oncologic Imaging for evaluation of tumor metabolic activity
  - Cardiac Imaging for evaluation of myocardial metabolic activity
  - Brain Imaging for evaluation of metabolic activity for procedural planning
- More specific guidance for PET usage, including exceptions to this general guidance, can be found throughout the condition-specific guidelines.

Overutilization of Advanced Imaging

- A number of reports describe overutilization in many areas of advanced imaging and other procedures, which may include the following:
  - High-level testing without consideration of less invasive, lower cost options which may adequately address the clinical question at hand
  - Excessive radiation and costs with unnecessary testing
  - Defensive medical practice
  - CT without and with contrast (so called "double contrast studies") requests, which have few current indications
  - MRI requested in place of CT to avoid radiation without considering the primary indication for imaging
  - Adult CT settings and protocols used for smaller people and children
  - Unnecessary imaging procedures when the same or similar studies have already been conducted
- A review of the imaging or other relevant procedural histories of all individuals presenting for studies has been recognized as one of the more important processes that can be significantly improved. By recognizing that a duplicate or questionably medically necessary imaging study has been ordered for individuals, it may be possible to avoid exposing them to unnecessary risks. To avoid these unnecessary risks, the precautions below should be considered:
  - The results of initial diagnostic tests or radiologic studies to narrow the differential diagnosis should be obtained prior to performing further tests or radiologic studies.
  - The clinical history should include a potential indication such as a known or suspected abnormality involving the body part for which the imaging study is being requested. These potential indications are addressed in greater detail within the applicable guidelines.
  - The results of the requested imaging procedures should be expected to have an impact on individual management or treatment decisions.
  - Repeat imaging studies are not generally necessary unless there is evidence of disease progression, recurrence of disease, and/or the repeat imaging will affect an individual’s clinical management.
- Pre-operative imaging/pre-surgical planning imaging/pre-procedure imaging is not medically necessary if the surgery/procedure is not medically necessary. Once the procedure has been approved or if the procedure does not require prior authorization, the appropriate pre-procedural imaging may be approved.

Health Equity Considerations

Health equity is the highest level of health for all individuals; health inequity is the avoidable difference in health status or distribution of health resources due to the social

conditions in which individuals are born, grow, live, work, and age. Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include the following: safe housing, transportation, and neighborhoods; racism, discrimination, and violence; education, job opportunities, and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

References (Preface-3)

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Coding Issues (Preface-4)

Guideline

3D Rendering (Preface-4.1)

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CPT® 76376 and CPT® 76377

- Both codes require concurrent supervision of the image post-processing 3D manipulation of the volumetric data set and image rendering.
  - Concurrent supervision is defined as active physician participation in and monitoring of the reconstruction process including design of the anatomic region that is to be reconstructed; determination of the tissue types and actual structures to be displayed (e.g., bone, organs, and vessels); determination of the images or cine loops that are to be archived; and, monitoring and adjustment of the 3D work product. The American College of Radiology (ACR) recommended that it is best to document the physician's supervision or participation in the 3D reconstruction of images.
- These two codes differ in the need for and use of an independent workstation for post-processing.
  - CPT® 76376 reports procedures not requiring image post-processing on an independent workstation.
  - CPT® 76377 reports procedures that require image post-processing on an independent workstation.
- These 3D rendering codes should not be used for 2D reformatting.
- Two-dimensional reconstruction (e.g., reformatting an axial scan into the coronal plane) is now included in all cross-sectional imaging base codes and is not separately reimbursable.
- The codes used to report 3D rendering for ultrasound and echocardiography are also used to report the 3D post processing work on CT, MRI, and other tomographic modalities.
- Providers may be required to obtain prior authorization on these 3D codes even if prior authorization is not required for the echocardiography and/or ultrasound procedure codes. It may appear that UnitedHealthcare pre-authorizes echocardiography and/or ultrasound when, in fact, it may only be the 3D code that needs the prior authorization.
- CPT® codes for 3D rendering should not be billed in conjunction with computer-aided detection (CAD), MRA, CTA, nuclear medicine SPECT studies, PET, PET/CT, stereotactic localization (CPT® 77011 or CPT® 70486 if used), Mammogram, MRI Breast, US Breast, CT Colonography (virtual colonoscopy), Cardiac MRI, Cardiac CT, or Coronary CTA studies.

- CPT® 76377 (3D rendering requiring image post-processing on an independent workstation) or CPT® 76376 (3D rendering not requiring image post-processing on an independent workstation) can be considered in the following clinical scenarios:
  - Bony conditions:
    - Evaluation of congenital skull abnormalities in newborns, infants, and toddlers (usually for pre-operative planning)
    - Complex fractures (comminuted or displaced)/dislocations of any joint (for pre-operative planning when conventional imaging is insufficient)
    - Spine fractures, pelvic/acetabulum fractures, intra-articular fractures (for pre-operative planning when conventional imaging is insufficient)
    - Pre-operative planning for other complex surgical cases
    - Complex facial fractures
  - Pre-operative planning for other complex surgical cases
  - Cerebral angiography
  - Pelvis conditions:
    - Uterine intra-cavitary lesion when initial US is equivocal: See **Abnormal Uterine Bleeding (AUB) (PV-2.1)** and **Leiomyoma/Uterine Fibroids (PV-12.1)** in the Pelvis Imaging Guidelines.
    - Hydrosalpinxes or peritoneal cysts when initial US is indeterminate: See **Complex Adnexal Masses (PV-5.3)** in the Pelvis Imaging Guidelines.
    - Lost IUD (inability to feel or see IUD string) with initial US: See **Intrauterine Device (PV-10.1)** in the Pelvis Imaging Guidelines.
    - Uterine anomalies with initial US: See **Uterine Anomalies (PV-14.1)** in the Pelvis Imaging Guidelines.
    - Infertility: See **Initial Infertility Evaluation, Female (PV-9.1)** in the Pelvis Imaging Guidelines.
  - Abdomen conditions:
    - CT Urogram: See **Hematuria and Hydronephrosis (AB-39)** in the Abdomen Imaging Guidelines.
    - MRCP: See **MR Cholangiopancreatography (MRCP) (AB-27)** in the Abdomen Imaging Guidelines.

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CT-, MR-, or Ultrasound-Guided Procedures (Preface-4.2)

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- CT-, MR-, and Ultrasound-guidance procedure codes contain all of the imaging necessary to guide a needle or catheter. It is inappropriate to routinely bill a diagnostic procedure code in conjunction with a guidance procedure code.
- Imaging studies performed as part of a CT-, MR-, or Ultrasound-guided procedure should be reported using the CPT® codes in the following table:

TABLE: Imaging Guidance Procedure Codes

CPT®	Description
19085	Biopsy, breast, with placement of breast localization device(s), when performed, and imaging of the biopsy specimen, when performed, percutaneous; first lesion, including MR guidance
19086	Biopsy, breast, with placement of breast localization device(s), when performed, and imaging of the biopsy specimen, when performed, percutaneous; each additional lesion, including MR guidance
75989	Imaging guidance for percutaneous drainage with placement of catheter (all modalities)
76942	Ultrasonic guidance for needle placement
77011	CT guidance for stereotactic localization
77012	CT guidance for needle placement
77013	CT guidance for, and monitoring of parenchymal tissue ablation
77021	MR guidance for needle placement
77022	MR guidance for, and monitoring of parenchymal tissue ablation
C8001	3D anatomical segmentation imaging for preoperative planning, data preparation and transmission, obtained from previous diagnostic CT or MR examination of the same anatomy

CPT® 19085 and CPT® 19086

- The proper way to bill an MRI-guided breast biopsy is CPT® 19085 (Biopsy, breast, with placement of breast localization device(s), when performed, and imaging of the biopsy specimen, when performed, percutaneous; first lesion, including MR guidance). Additional lesions should be billed using CPT® 19086.
  - **CPT® 77021** (MR guidance for needle placement) is not an appropriate code for a breast biopsy.

CPT® 75989

- This code is used to report imaging guidance for a percutaneous drainage procedure in which a catheter is left in place.
- This code can be used to report whether the drainage catheter is placed under fluoroscopy, Ultrasound-, CT-, or MR-guidance modality.

CPT® 77011

- A stereotactic CT localization scan is frequently obtained prior to sinus surgery. The dataset is then loaded into the navigational workstation in the operating room for use during the surgical procedure. The information provides exact positioning of surgical instruments with regard to the individual's 3D CT images.
- In most cases, the pre-operative CT is a technical-only service that does not require interpretation by a radiologist.
  - The imaging facility should report CPT® 77011 when performing a scan not requiring interpretation by a radiologist.
  - If a diagnostic scan is performed and interpreted by a radiologist, the appropriate diagnostic CT code (e.g., CPT® 70486) should be used.
  - It is not appropriate to report both CPT® 70486 and CPT® 77011 for the same CT stereotactic localization imaging session.
  - 3D Rendering (CPT® 76376 or CPT® 76377) should not be reported in conjunction with CPT® 77011 (or CPT® 70486 if used). The procedure inherently generates a 3D dataset.

CPT® 77012 (CT) and CPT® 77021 (MR)

- These codes are used to report imaging guidance for needle placement during biopsy, aspiration, and other percutaneous procedures.
- They represent the radiological supervision and interpretation of the procedure and are often billed in conjunction with surgical procedure codes.
  - For example, CPT® 77012 is reported when CT guidance is used to place the needle for a conventional arthrogram.

- Only codes representing percutaneous surgical procedures should be billed with CPT® 77012 and CPT® 77021. It is inappropriate to use with surgical codes for open, excisional, or incisional procedures.
- **CPT® 77021** (MR guidance for needle placement) is not an appropriate code for breast or prostate biopsy.
  - CPT® 19085 would be appropriate for the first breast biopsy site and CPT® 19086 would be appropriate for additional concurrent biopsies.

CPT® 77013 (CT) and CPT® 77022 (MR)

- These codes include the initial guidance to direct a needle electrode to the tumor(s), monitoring for needle electrode repositioning within the lesion, and as necessary for multiple ablations to coagulate the lesion and confirmation of satisfactory coagulative necrosis of the lesion(s) and comparison to pre-ablation images.
  - **NOTE:** CPT® 77013 should only be used for non-bone ablation procedures.
    - CPT® 20982 includes CT guidance for bone tumor ablations.
  - Only codes representing percutaneous surgical procedures should be billed with CPT® 77013 and CPT® 77022. It is inappropriate to use with surgical codes for open, excisional, or incisional procedures.
- CPT® 77012 and CPT® 77021 (as well as guidance codes CPT® 76942 [US], and CPT® 77002 - CPT® 77003 [fluoroscopy]) describe radiologic guidance by different modalities.
  - Only one unit of any of these codes should be reported per individual encounter (date of service). The unit of service is considered to be the individual encounter, not the number of lesions, aspirations, biopsies, injections, or localizations.

Unlisted Procedures/Therapy Treatment Planning (Preface-4.3)

PRF.CD.0004.3.UOH
v2.0.2026

Unlisted Procedures

CPT ®	Description
76497	Unlisted CT procedure (e.g., diagnostic or interventional)
76498	Unlisted MR procedure (e.g., diagnostic or interventional)
78999	Unlisted procedure, diagnostic nuclear medicine

- For general information related to unlisted procedures, please refer to **Management of Unlisted Codes**.
- These unlisted codes should be reported whenever a diagnostic or interventional CT or MR study is performed in which an appropriate anatomic site-specific code is not available.
  - A Category III code that describes the procedure performed must be reported rather than an unlisted code if one is available.
- CPT® 76497 or CPT® 76498 (Unlisted CT or MRI procedure) is medically necessary in the following clinical scenarios:
  - Studies done for navigation and planning for neurosurgical procedures (i.e., Stealth or Brain Lab Imaging)
  - Custom joint arthroplasty planning (not as an alternative recommendation): See **Osteoarthritis (MS-12.1)** in the Musculoskeletal Imaging Guidelines.
  - Any procedure/surgical planning if thinner cuts or different positional acquisition (than those on the completed diagnostic study) are needed. These could include navigational bronchoscopy: See **Navigational Bronchoscopy and Biopsy (CH-1.7)** in the Chest Imaging Guidelines.

Therapy Treatment Planning

- Radiation Therapy Treatment Planning: See **Unlisted Procedure Codes in Oncology (ONC-1.5)** in the Oncology Imaging Guidelines.

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CPT® 76380 Limited or Follow-up CT (Preface-4.5)

PRF.CD.0004.5.UOH

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- CPT® 76380 describes a limited or follow-up CT scan. The code is used to report any CT scan, for any given area of the body, in which the work of a full diagnostic code is not performed.
- Common examples include, but are not limited to, the following:
  - Limited sinus CT imaging protocol
  - Limited or follow-up slices through a known pulmonary nodule
  - Limited slices to assess a non-healing fracture (such as the clavicle)
- Limited CT (CPT® 76380) is not medically necessary for treatment planning purposes. See **Unlisted Procedure Codes in Oncology (ONC-1.5)** in the Oncology Imaging Guidelines.
- It is inappropriate to report CPT® 76380, in conjunction with other diagnostic CT codes, to cover 'extra slices' in certain imaging protocols.
  - There is no specific number of sequences or slices defined in any CT CPT® code definition.
  - The AMA, in *CPT® 2019*, does not describe nor assign any minimum or maximum number of sequences or slices for any CT study.
    - A few additional slices or sequences are not uncommon.
    - CT imaging protocols are often influenced by the individual's clinical situation. Sometimes the protocols require more time and sometimes less.

SPECT/CT Imaging (Preface-4.6)

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v2.0.2026

- SPECT/CT involves SPECT (Single Photon Emission Computed Tomography) nuclear medicine imaging and CT for optimizing location, accuracy, and attenuation correction and combines functional and anatomic information.
  - Common studies using this modality include ^{123}I- or ^{131}I-Metaiodobenzylguanidine (MIBG) and octreotide scintigraphy for neuroendocrine tumors.
- Hybrid Nuclear/CT scan can be reported as CPT® 78830 (single area and single day), CPT® 78831 (2 or more days), or CPT® 78832 (2 areas with one day and 2-day study).
- CPT® 78072 became effective January 1, 2013 for SPECT/CT parathyroid nuclear imaging.

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CPT® 76140 Interpretation of an Outside Study (Preface-4.7)

PRF.CD.0004.7.UOH

v2.0.2026

- It is inappropriate to use diagnostic imaging codes for interpretation of a previously performed exam that was completed at another facility.
  - If the outside exam is being used for comparison with a current exam, the diagnostic code for the current examination includes comparison to the prior study.
  - CPT® 76140 is the appropriate code to use for an exam which was completed elsewhere and a secondary interpretation of the images is requested.

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Quantitative MR Analysis (Preface-4.8)

PRF.CD.0004.8.A

v2.0.2026

- Category III CPT® codes for quantitative analysis of multiparametric-MR (mp-MRI) data with and without an associated diagnostic MRI have been established. Quantitative mp-MRI uses software to analyze tissue physiology of visceral organs and other anatomic structures non-invasively.
- For criteria associated with these types of studies, please see the condition-specific guidelines.

HCPCS Codes (Preface-4.9)

PRF.CD.0004.9.UOH

v2.0.2026

- Healthcare Common Procedure Coding System (HCPCS) codes are utilized by some hospitals in favor of the typical Level-III CPT® codes. These codes are typically 4 digits preceded by a C or S.
  - Many of these codes have similar code descriptions to Level-III CPT® codes (i.e., C8931 – MRA with dye, Spinal Canal; and, CPT® 72159 – MRA Spinal Canal).
  - If cases are submitted with HCPCS codes with similar code descriptions to the typical Level-III CPT® codes, those procedures should be managed in the same manner as the typical CPT® codes.
  - HCPCS code management is discussed further in the applicable guideline sections.
- Requests for many Healthcare Common Procedure Coding System (HCPCS) codes, including non-specific codes such as S8042 (Magnetic resonance imaging [MRI], low-field), should be redirected to a more appropriate and specific CPT® code. Exceptions are noted in the applicable guideline sections.

References (Preface-4)

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Whole-Body Imaging (Preface-5)

Guideline

Whole-Body CT Imaging (Preface-5.1)

PRF.WB.0005.1.UOH

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- Whole-body CT or LifeScan (CT Brain, Chest, Abdomen, and Pelvis) for screening of asymptomatic individuals is not a covered benefit. The performance of whole-body screening CT examinations in healthy individuals does not meet any of the current validity criteria for screening studies and there is no clear documentation of benefit versus radiation risk.
- Whole-body low-dose skeletal CT is supported for oncologic staging in Multiple Myeloma. See **Multiple Myeloma and Plasmacytomas (ONC-25)** in the Oncology Imaging Guidelines.

Whole-Body MR Imaging (Preface-5.2)

PRF.WB.0005.2.A

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- Whole-body MRI (WBMRI) is, with the exception of select cancer predisposition syndromes and autoimmune conditions discussed below, generally not medically necessary at this time due to lack of standardization in imaging technique and lack of evidence that WBMRI improves outcome for any individual disease state.
  - While WBMRI has the benefit of whole-body imaging and lack of radiation exposure, substantial variation still exists in the number of images, type of sequences (STIR vs. diffusion weighting, for example), and contrast agent(s) used.
- Coding considerations:
  - There are no established CPT® or HCPCS codes for reporting WBMRI.
  - WBMRI is at present only reportable using CPT® 76498. All other methods of reporting whole-body MRI are inappropriate including the following:
    - Separate diagnostic MRI codes for multiple individual body parts
    - MRI Bone Marrow Supply (CPT® 77084)
- Disease-specific considerations:
  - Cancer screening:
    - Interval WBMRI is recommended for cancer screening in individuals with select cancer predisposition syndromes. Otherwise, WBMRI has not been shown to improve outcomes for cancer screening.
      - For additional information, see **Li-Fraumeni Syndrome (LFS) (PEDONC-2.2)**, **Neurofibromatosis 1 and 2 (NF1 and NF2) (PEDONC-2.3)**, **Rhabdoid Tumor Predisposition Syndrome (PEDONC-2.11)**, **Hereditary Paraganglioma-Pheochromocytoma (HPP) Syndromes (PEDONC-2.13)**, **Constitutional Mismatch Repair Deficiency (CMMRD or Turcot Syndrome) (PEDONC-2.15)**, **Infantile Myofibromatosis (PEDONC-2.18)**, or **Bloom Syndrome (PEDONC-2.19)** in the Pediatric and Special Populations Oncology Imaging Guidelines.
  - Cancer staging and restaging:
    - Whole-body MRI has limited indications in staging and restaging of multiple myeloma. See **Multiple Myeloma and Plasmacytomas (ONC-25)** in the Oncology Imaging Guidelines for additional details.
    - Evidence has not been published establishing WBMRI as a standard evaluation for any other type of cancer.
  - Autoimmune disease:
    - WBMRI can be approved in some situations for individuals with chronic recurrent multifocal osteomyelitis.

- For additional information, see **Chronic Recurrent Multifocal Osteomyelitis (PEDMS-10.2)** in the Pediatric Musculoskeletal Imaging Guidelines.

PET/MRI (Preface-5.3)

PRF.WB.0005.3.A

v2.0.2026

- PET/MRI is generally not medically necessary for a vast majority of oncologic and neurologic conditions due to lack of standardization in imaging technique and interpretation. However, it is medically necessary in select circumstances when the following criteria are met:
  - The individual meets condition-specific guidelines for PET/MRI OR
  - The individual meets ALL of the following:
    - The individual meets guideline criteria for PET/CT, **AND**
    - PET/CT is not available at the treating institution, **AND**
    - The provider requests PET/MRI in lieu of PET/CT
- When the above criteria are met, PET/MRI is reported using the code combination of PET Whole-Body (CPT® 78813) and MRI Unlisted (CPT® 76498). All other methods of reporting PET/MRI are inappropriate.
  - When clinically appropriate, diagnostic MRI codes can be medically necessary at the same time as the PET/MRI code combination.
- For more information, please see the appropriate condition-based guideline.

References (Preface-5)

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8. National Comprehensive Cancer Network® (NCCN®). NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®): Multiple Myeloma. Version 4.2026 - November 26, 2025. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Multiple Myeloma V4.2026. ©2024 National Comprehensive Cancer Network, Inc. All rights reserved. The NCCN Guidelines® and illustrations herein may not be reproduced in any form for any purpose without the express written permission of the NCCN. To view the most recent and complete version of the NCCN Guidelines®, go online to NCCN.org.

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References (Preface-6)

Guideline

References (Preface-6.1)

References (Preface-6.1)

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- Complete reference citations for the journal articles are embedded within the body of the guidelines and/or may be found on the Reference pages at the end of some guideline sections.

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General Guidelines (PEDMS-1.0)

Guideline

Procedure Codes Associated with Musculoskeletal Imaging (PEDMS)
General Guidelines (PEDMS-1.0)
Age Considerations (PEDMS-1.1)
Appropriate Clinical Evaluation and Conservative Treatment (PEDMS-1.2)
Modality General Considerations (PEDMS-1.3)
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Procedure Codes Associated with Musculoskeletal Imaging (PEDMS)

MSP.GG.ProcedureCodes.A
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MRI	CPT®
MRI Upper Extremity non-joint without contrast	73218
MRI Upper Extremity non-joint with contrast (rarely used)	73219
MRI Upper Extremity non-joint without and with contrast	73220
MRI Upper Extremity joint without contrast	73221
MRI Upper Extremity joint with contrast (rarely used)	73222
MRI Upper Extremity joint without and with contrast	73223
MRI Lower Extremity non-joint without contrast	73718
MRI Lower Extremity non-joint with contrast (rarely used)	73719
MRI Lower Extremity non-joint without and with contrast	73720
MRI Lower Extremity joint without contrast	73721
MRI Lower Extremity joint with contrast (rarely used)	73722
MRI Lower Extremity joint without and with contrast	73723
Unlisted MRI procedure (for radiation planning or surgical software)	76498

MRA	CPT®
MRA Upper Extremity	73225
MRA Lower Extremity	73725

CT	CPT®
CT Upper Extremity without contrast	73200
CT Upper Extremity with contrast	73201
CT Upper Extremity without and with contrast	73202
CT Lower Extremity without contrast	73700
CT Lower Extremity with contrast	73701
CT Lower Extremity without and with contrast	73702
CT Chest without contrast	71250
CT Chest with contrast	71260
CT Abdomen with contrast	74160
CT Pelvis with contrast	72193
CT Abdomen and Pelvis with contrast	74177
Bone Mineral Density CT, one or more sites, axial skeleton	77078
CT Guidance for Placement of Radiation Therapy Fields	77014
Unlisted CT procedure (for radiation planning or surgical software)	76497

CTA	CPT®
CTA Upper Extremity	73206
CTA Lower Extremity	73706

Nuclear Medicine	CPT®
PET Imaging; limited area (this code not used in pediatrics)	78811
PET Imaging: skull base to mid-thigh (this code not used in pediatrics)	78812

Nuclear Medicine	CPT®
PET Imaging: whole body (this code not used in pediatrics)	78813
PET with concurrently acquired CT; limited area (this code rarely used in pediatrics)	78814
PET with concurrently acquired CT; skull base to mid-thigh	78815
PET with concurrently acquired CT; whole body	78816
Bone Marrow Imaging Limited Areas	78102
Bone Marrow Imaging Multiple Areas	78103
Bone Marrow Imaging Whole Body	78104
Nuclear Bone Scan Limited	78300
Nuclear Bone Scan Multiple Areas	78305
Nuclear Bone Scan Whole Body	78306
Bone Scan Three Phase	78315
DEXA Bone Densitometry, axial skeleton	77080
DEXA Bone Densitometry, peripheral skeleton	77081
Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); planar, single area (eg, head, neck, chest, pelvis), single day imaging	78800
Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); planar, 2 or more areas (eg, abdomen and pelvis, head and chest), 1 or more days imaging or single area imaging over 2 or more days	78801

Nuclear Medicine	CPT®
Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); planar, whole body, single day imaging	78802
Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT), single area (eg, head, neck, chest, pelvis), single day imaging	78803
Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT) with concurrently acquired computed tomography (CT) transmission scan for anatomical review, localization and determination/detection of pathology, single area (eg, head, neck, chest, pelvis), single day imaging	78830
Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT), minimum 2 areas (eg, pelvis and knees, abdomen and pelvis), single day imaging, or single area imaging over 2 or more days	78831
Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT) with concurrently acquired computed tomography (CT) transmission scan for anatomical review, localization and determination/detection of pathology, minimum 2 areas (eg, pelvis and knees, abdomen and pelvis), single day imaging, or single area imaging over 2 or more days	78832

Ultrasound	CPT®
Ultrasound, extremity, nonvascular; complete joint	76881
Ultrasound, extremity, nonvascular; limited, anatomic specific for focal abnormality	76882

Ultrasound	CPT®
Ultrasound, infant hips; dynamic (requiring physician manipulation)	76885
Ultrasound, infant hips; limited, static (not requiring physician manipulation)	76886
Ultrasound, axilla	76882
Ultrasound, upper back	76604
Ultrasound, lower back	76705
Ultrasound, other soft tissue areas not otherwise specified	76999
Limited bilateral noninvasive physiologic studies of upper or lower extremity arteries	93922
Complete bilateral noninvasive physiologic studies of upper or lower extremity arteries	93923
Duplex scan of upper extremity arteries or arterial bypass grafts; complete bilateral	93930
Duplex scan of upper extremity arteries or arterial bypass grafts; unilateral or limited	93931
Duplex scan of extremity veins including responses to compression and other maneuvers; complete bilateral study	93970
Duplex scan of extremity veins including responses to compression and other maneuvers; unilateral or limited study	93971
Duplex scan of hemodialysis access (including arterial inflow, body of access and venous outflow)	93990

General Guidelines (PEDMS-1.0)

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- A pertinent clinical evaluation including a detailed history, physical examination, appropriate laboratory studies and basic imaging such as plain x-ray or ultrasound should be performed prior to considering advanced imaging (CT, MR, Nuclear Medicine), unless the individual is undergoing guideline-supported scheduled imaging evaluation. A meaningful technological contact (telehealth visit, telephone call, electronic mail or messaging) can serve as a pertinent clinical evaluation.
- Plain x-ray should be done prior to advanced imaging. The results of plain x-rays performed after the current episode of symptoms started or changed need to be available to the requesting provider of the advanced imaging study. X-ray can rule out those situations that do not require advanced imaging, such as acute/healing fracture, osteomyelitis, and tumors of bone amenable to biopsy or radiation therapy (in known metastatic disease), etc.
  - Even in soft tissue masses, plain x-rays are helpful in evaluating for calcium/bony deposits, e.g. myositis ossificans and invasion of bone.
- Unless otherwise stated in a specific guideline section, repeat imaging studies of the same body area are not necessary unless there is evidence for progression of disease, new onset of disease, and/or documentation of how repeat imaging will affect individual management or treatment decisions.
- Provider-directed conservative care may include any or all of the following: R.I.C.E (rest, ice, compression, and elevation), NSAIDs (non-steroidal anti-inflammatory drugs), narcotic and non-narcotic analgesic medications, oral or injectable corticosteroids, viscosupplementation injections, a provider-directed home exercise program, cross-training, physical medicine, or immobilization by splinting/casting/bracing.
- These guidelines are based upon using advanced imaging to answer specific clinical questions that will affect patient management. Imaging is not indicated if the results will not affect individual management decisions. Standard medical practice would dictate continuing conservative therapy prior to advanced imaging in individuals who are improving on current treatment programs.

Health Equity Consideration

Health equity is the highest level of health for all individuals; health inequity is the avoidable difference in health status or distribution of health resources due to the social conditions in which individuals are born, grow, live, work, and age. Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include the following: safe housing, transportation, and neighborhoods; racism, discrimination, and violence;

education, job opportunities, and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

Age Considerations (PEDMS-1.1)

MSP.GG.0001.1.A

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- Many conditions affecting the musculoskeletal system in the pediatric population have different diagnoses than those occurring in the adult population. For those diseases which occur in both pediatric and adult populations, differences may exist in management due to individual age, comorbidities, and differences in disease natural history between children and adults.
- Individuals who are ≤18 years old should be imaged according to the Pediatric Musculoskeletal Imaging Guidelines if discussed. Any conditions not specifically discussed in the Pediatric Musculoskeletal Imaging Guidelines should be imaged according to the General Musculoskeletal Imaging Guidelines. Individuals who are >18 years old should be imaged according to the General Musculoskeletal Imaging Guidelines except where directed otherwise by a specific guideline section.

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Appropriate Clinical Evaluation and Conservative Treatment (PEDMS-1.2)

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- See: **General Guidelines (PEDMS-1.0)**

Modality General Considerations (PEDMS-1.3)

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- MRI
  - MRI without contrast is the preferred modality for pediatric musculoskeletal imaging unless otherwise stated in a specific guideline section, as it is superior in imaging the soft tissues and can also define physiological processes in some instances, e.g. edema, loss of circulation (AVN), and increased vascularity (tumors).
  - MRI without and with contrast is frequently recommended for evaluation of tumors, infection, post-operative evaluation, arthrography, and juvenile idiopathic arthritis, as described in the disease-specific guideline sections.
  - Due to the length of time required for MRI acquisition and the need to minimize movement, anesthesia is usually required for almost all infants (except neonates) and young children (age <7 years), as well as older children with delays in development or maturity. This anesthesia may be administered via oral or intravenous route. In this individual population, MRI sessions should be planned with a goal of minimizing anesthesia exposure by adhering to the following considerations:
    - MRI procedures can be performed without and/or with contrast as supported by these condition-based guidelines. If intravenous access will already be present for anesthesia administration and there is no contraindication for using contrast, imaging without and with contrast may be appropriate if requested. By doing so, the requesting provider may avoid repetitive anesthesia administration to perform an MRI with contrast if the initial study without contrast is inconclusive.
      - Evidence-based literature demonstrates the potential for gadolinium deposition in various organs including the brain, after the use of MRI contrast.
      - The U.S. Food and Drug Administration (FDA) has noted that there is currently no evidence to suggest that gadolinium retention in the brain is harmful and restricting gadolinium-based contrast agents (GBCAs) use is not warranted at this time. It has been recommended that GBCA use should be limited to circumstances in which additional information provided by the contrast agent is necessary and the necessity of repetitive MRIs with GBCAs should be assessed.
    - If multiple body areas are supported by these guidelines for the clinical condition being evaluated, MRI of all necessary body areas should be obtained concurrently in the same imaging session.

- The presence of surgical hardware or implanted devices may preclude MRI, as magnetic field distortion may limit detail in adjacent structures. CT may be the procedure of choice in these cases.
- The selection of best examination may require coordination between the provider and the imaging service.

- CT
  - CT without contrast is generally superior to MRI for imaging bone and joint anatomy; thus it is useful for studying complex fractures (particularly of the joints, dislocations, and assessing delayed union or non-union of fractures, integration of bone graft material, if plain x-rays are equivocal.
    - CT should not be used to replace MRI in an attempt to avoid sedation unless listed as a recommended study in a specific guideline section.
  - CT beam attenuation can result in streak artifact which can obscure adjacent details. This can occur with radiopaque material such as metal objects or dense bones.
  - The selection of best examination may require coordination between the requesting provider and the rendering imaging facility.
- Ultrasound
  - Ultrasound is frequently used to evaluate infants for hip dysplasia, to detect and/or aspirate joint effusion, and as an initial evaluation of extremity soft tissue masses.
  - CPT® codes vary by body area and the use of Doppler imaging. These CPT® codes are included in the table at the beginning of this guideline.
- Nuclear Medicine
  - Nuclear medicine studies are commonly used in evaluation of the peripheral musculoskeletal system, and other rare indications exist as well:
    - Bone scan (CPT® 78315), Distribution of Radiopharmaceutical Agent SPECT (CPT® 78803, or 78831), or SPECT/CT (CPT® 78830) is indicated for evaluation of suspected loosening of orthopedic prostheses when recent plain x-ray is nondiagnostic.
    - Nuclear medicine bone marrow imaging (CPT® codes: CPT® 78102, CPT® 78103, or CPT® 78104), SPECT (CPT® code: 78803), or SPECT/CT (CPT® 78830) is indicated for detection of ischemic or infarcted regions in sickle cell disease.
    - Triple phase bone scan (CPT® 78315) is indicated for evaluation of complex regional pain syndrome or reflex sympathetic dystrophy.
- 3D Rendering
  - 3D Rendering indications in pediatric musculoskeletal imaging are identical to those in the general imaging guidelines. See: **3D Rendering (MS-3)** for imaging guidelines.
- Bilateral Imaging

- Coding for bilateral imaging may vary from health care plan to health care plan. Not all coding options may be available for all health care plans.

The guidelines listed in this section for certain specific indications are not intended to be all-inclusive; clinical judgment remains paramount and variance from these guidelines may be appropriate and warranted for specific clinical situations.

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Fracture and Dislocation (PEDMS-2)

Guideline

Fracture and Dislocation (PEDMS-2)

MSP.FX.0002.0.A

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- A pertinent clinical evaluation including a detailed history, physical examination, and plain x-ray should be performed prior to considering advanced imaging.

Acute Fracture (PEDMS-2.1)

MSP.FX.0002.1.A

v2.0.2026

- Plain x-rays should be performed initially in any obvious or suspected acute fracture or dislocation.
  - If plain x-rays are positive, no further imaging is medically necessary except in complex (comminuted or displaced) joint fractures where MRI or CT without contrast is medically necessary for preoperative planning.
  - 3D Rendering may sometimes be medically necessary for complex fracture repairs. See: **3D Rendering (MS-3)** in the Musculoskeletal Imaging Guidelines.
- Ultrasound (CPT® 76881 or CPT® 76882) is medically necessary for evaluation of fracture, but is not required to allow for other advanced imaging, especially in infants. Ultrasound is typically a secondary method of fracture detection when used, though some centers use it as the sole imaging modality for skull and clavicle fractures.
- CT or MRI without contrast is medically necessary if plain x-rays are negative or equivocal for fracture, and fracture or bone marrow edema is still clinically suspected, and if the results will determine immediate treatment decisions as documented by the treating physician.
- Bone scan is medically necessary for evaluation of suspected fracture when two x-rays are negative at least 10 days apart, using any of the following CPT® code combinations:
  - CPT® 78300, CPT® 78305, or CPT® 78306 as a single study
  - See: **Stress/Occult Fracture (PEDMS-2.5)** for bone scan indications

Joint-Adjacent Fracture (PEDMS-2.2)

MSP.FX.0002.2.A

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- CT without contrast is medically necessary in complex (comminuted or displaced) fractures seen on plain x-ray involving a joint for preoperative planning.
- CT without contrast is medically necessary when there is clinical concern for delayed union or non-union of fracture or joint fusions on follow-up plain x-ray.

Growth Plate Injuries (Salter-Harris Fractures) (PEDMS-2.3)

MSP.FX.0002.3.A

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- These fractures can generally be diagnosed and managed adequately with plain x-ray.
- In case of severe injury with displacement of bone fractures seen on plain x-ray, CT without contrast is medically necessary prior to surgical intervention.
- If there is concern for delayed union or non-union of the bone seen on plain x-ray, CT without contrast is medically necessary.
- MRI without contrast is medically necessary for the evaluation of a suspected physeal bar in a healing fracture or other complication of a fracture involving the growth plate seen on plain x-ray or CT which may result in abnormal growth. While physeal bars may be seen on CT, some fibrous physeal bars can be missed on CT. As such, MRI is the preferred imaging modality.
- Compressive injuries of the growth plate (Salter-Harris V) injuries may be difficult to identify on plain films, and MRI without contrast is medically necessary for confirmation.

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Osteochondral or Chondral Fractures, Including Osteochondritis Dissecans (PEDMS-2.4)

MSP.FX.0002.4.A
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An osteochondral fracture is a tear of the cartilage which covers the end of a bone, within a joint. It is also known as Osteochondritis Dissecans. In both disorders, the osteochondral fragment may separate from the articular surface and form loose bone fragments in a joint.

- If x-rays are negative and an osteochondral fracture is still suspected, or if x-ray or clinical exam suggests an unstable osteochondral injury, either MRI without contrast, MR arthrogram, or CT arthrogram of the involved joint is medically necessary.
- If plain x-rays show a non-displaced osteochondral fragment, follow up imaging should be with plain x-rays. Advanced imaging is not medically necessary.
- MRI without contrast or CT without contrast is medically necessary when healing cannot be adequately assessed on follow up plain x-rays.

Stress/Occult Fracture (PEDMS-2.5)

MSP.FX.0002.5.A

v2.0.2026

- These fractures can usually be adequately evaluated by history, physical exam, and x-ray. Advanced imaging may be medically necessary as discussed below if the initial evaluation of history, physical exam, and plain x-ray fails to establish a definitive diagnosis.
- Plain x-rays should be performed before advanced imaging. Plain x-rays are often negative initially, but may become positive after 14 days.
- If stress or occult fracture is suspected involving the pelvis, sacrum, hip, femur, tibia, tarsal navicular, proximal 5th metatarsal, or scaphoid, and initial plain x-ray fails to establish a definitive diagnosis:
  - MRI or CT without contrast is medically necessary, without conservative care or follow-up plain x-rays OR
  - Bone scan (CPT® 78315, 78306, or 78300), SPECT/CT (CPT® 78830), or Distribution Of Radiopharmaceutical Agent SPECT (CPT® 78803) is medically necessary in place of MRI or CT if provider requests
- For all other suspected stress or occult fractures, if follow-up plain x-rays are negative after 10 days of conservative care, or initial non-diagnostic x-ray is obtained a minimum of 14 days after the onset of symptoms:
  - MRI or CT without contrast is medically necessary OR
  - Bone scan (CPT® 78315, 78306, or 78300), SPECT/CT (CPT® 78830), or Distribution Of Radiopharmaceutical Agent SPECT (CPT® 78803) is medically necessary in place of MRI or CT if provider requests
- Periodic follow-up plain x-rays will usually show progressive healing.
  - CT without contrast is medically necessary when there is clinical concern for non-union.

Compartment Syndrome (PEDMS-2.6)

MSP.FX.0002.6.A

v2.0.2026

- Acute compartment syndrome is a clinical diagnosis made by direct measurement of compartment pressure and is a surgical emergency. Advanced imaging is not medically necessary.
- See: Compartment syndrome within the **Muscle and Tendon Injuries (MS-11.0)** section of the Musculoskeletal Imaging Guidelines.

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Physical Child Abuse (PEDMS-2.7)

MSP.FX.0002.7.A

v2.0.2026

- See: **Suspected Physical Child Abuse (PEDMS-7)** for imaging guidelines.

Evidence Discussion (PEDMS-2)

v2.0.2026

Diagnostic imaging plays a critical role in the evaluation and management of pediatric fractures. Initial imaging with plain radiographs remains the standard for suspected fractures and stress reactions in children, as recommended by the American College of Radiology (ACR).[1] When radiographs are inconclusive or negative but clinical suspicion persists, advanced imaging modalities such as MRI and CT are considered appropriate next steps. MRI is highly sensitive and specific for detecting stress fractures and physeal injuries, especially when radiographs are inconclusive.[2-4] CT can be useful in assessing cortical bone detail but it involves exposing an individual to ionizing radiation, which may not be recommended in pediatric populations.[5,6] Ultrasound has been shown to be effective in detecting fractures in infants and young children, making it an option that avoids exposure to radiation and/or sedation.[7,8]

The risks of potential harm or adverse effects on pediatric individuals during imaging should be considered. MRI, while highly sensitive and specific, may require sedation in younger children which introduces anesthesia-related risks.[3,9] CT and bones scans additionally expose children to ionizing radiation, which could carry long term consequences.[5,10] Ultrasound is generally safe, non-invasive and radiation free; however, it is operator-dependent and diagnostic accuracy can be variable.[7,8]

It has been recommended that special consideration be given to imaging of growth plate and overuse injuries in children. Growth plate injuries require careful imaging assessment due to the potential for long-term growth disturbances. MRI is preferred for detailed evaluation of the growth plate and surrounding structure.[9,11] Physeal injuries, often resulting from sports or trauma, are best evaluated initially with radiographs. MRI is the preferred modality for assessing cartilage integrity and subchondral bone involvement, aiding in treatment planning and prognosis.[11,12]

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Soft Tissue and Bone Masses (PEDMS-3)

Guideline

Soft Tissue and Bone Masses – General Considerations (PEDMS-3.1)

MSP.ST.0003.1.A

v2.0.2026

- A pertinent clinical evaluation including a detailed history and physical examination should be performed prior to considering advanced imaging.
  - History and physical exam of any palpable soft tissue mass should include documentation of any of the following pertinent clinical features: location, size, and any association with pain.
- Plain x-rays should be performed as initial imaging. This is true even for soft tissue masses that are clearly not directly associated with osseous structures. Details such as soft tissue calcification, presence or absence of phleboliths, radiographic density, and any effect on adjacent bone are all potentially significant plain film findings that may help better identify the etiology of the mass and determine the optimal modality and contrast level when advanced imaging is indicated.
- Evaluation by a surgical specialist or oncologist is strongly recommended to help determine the most helpful advanced imaging studies for an individual.
- Ultrasound (CPT® 76881 or CPT® 76882) is medically necessary if initial plain x-ray is negative to evaluate:
  - ill-defined masses or areas of swelling
  - hematomas
  - subcutaneous lipomas with inconclusive clinical examination
  - lipomas in other locations
  - masses that have been present and stable for up to, or more than, 1 year
  - vascular malformations (see: **Vascular Anomalies (PEDPVD-2)** in the Pediatric Peripheral Vascular Disease Imaging Guidelines)
- MRI without and with contrast or without contrast is medically necessary for any of the following:
  - soft tissue mass greater than 5 cm in diameter
  - soft tissue mass increasing in size
  - painful soft tissue mass
  - deep soft tissue mass or subfascial location
- Advanced imaging is not medically necessary for the following entities:
  - ganglion cysts
  - sebaceous cysts
  - hematomas
  - subcutaneous lipomas
    - MRI without or without and with contrast can be performed if surgery is planned.

- MRI without and with contrast, or ultrasound (CPT® 76881 or CPT® 76882) is medically necessary for lipomas in other locations (not subcutaneous).

Soft Tissue Mass with Negative X-ray and Abnormal Ultrasound (PEDMS-3.2)

MSP.ST.0003.2.A

v2.0.2026

- MRI without and with contrast is medically necessary when plain x-ray is negative and ultrasound is abnormal.
  - CT without or with contrast is medically necessary if MRI is contraindicated.

Soft Tissue Mass with Calcification/ Ossification on X-ray (PEDMS-3.3)

MSP.ST.0003.3.A

v2.0.2026

- MRI without and with contrast is medically necessary when calcification/ossification is noted on plain x-ray.
  - CT without or with contrast is medically necessary if MRI is contraindicated.

Mass Involving Bone (Including Suspected Lytic and Blastic Metastatic Disease) (PEDMS-3.4)

MSP.ST.0003.4.A

v2.0.2026

- Plain x-rays of the entire bone containing the lesion are required prior to consideration of advanced imaging. Many benign bone tumors have a characteristic appearance on plain x-ray and advanced imaging is not medically necessary unless one of the following applies:
  - MRI without and with contrast and/or CT without is medically necessary for preoperative planning.
  - MRI without and with contrast is medically necessary when the diagnosis is uncertain based on plain x-ray appearance.
    - CT without or with contrast is medically necessary if MRI is contraindicated.
- Surveillance of benign bony lesions is with plain x-ray
  - MRI without and with contrast is medically necessary for new findings on x-ray, or new or worsening clinical symptoms not explained by recent x-ray.
- Osteochondroma, osteoid osteoma, osteogenic sarcoma, and Ewing sarcoma family of tumors should be imaged according to **Bone Tumors (PEDONC-9)** in the Pediatric and Special Populations Oncology Imaging Guidelines.
- If there is concern for metastatic disease in an individual with a known malignancy, refer to the appropriate Pediatric and Special Populations Oncology Imaging Guideline.

Evidence Discussion (PEDMS-3)

v2.0.2026

Diagnostic imaging plays a critical role in evaluating soft and bony tissue masses in pediatric patients. The American College of Radiology (ACR) recommends radiography as the initial imaging modality for suspected soft tissue and bone masses in children, as it provides essential information with minimal radiation exposure.[1,2] Radiographs can often identify benign lesions and guide further imaging decisions, reducing the need for advanced modalities when not clinically indicated.

For superficial soft tissue masses, ultrasound (US) is highly recommended as an imaging tool. It is non-invasive, free of ionizing radiation, and has demonstrated high sensitivity and specificity in characterizing superficial lesions in pediatric populations.[3-5] US can effectively differentiate cystic from solid masses and guide clinical management, including decisions regarding biopsy or surgical intervention. However, MRI may be necessary for preoperative planning or when deeper anatomical involvement is suspected.[1,6]

When radiographs are inconclusive or when malignancy is suspected, (MRI) without and with intravenous contrast is considered an appropriate next step. MRI offers superior soft tissue contrast and multiplanar capabilities, which are particularly valuable in pediatric patients due to their smaller anatomical structures and the need to avoid ionizing radiation.[1,2,5,7] However, MRI may require the use of sedation which could introduce anesthesia-related risks to consider.[1] CT may be used when MRI is contraindicated, but its use should be judicious given the increased sensitivity of children to radiation.

Health equity considerations are essential in pediatric imaging. Children from underserved communities may face barriers to accessing advanced imaging modalities.[9] Evidence supports the use of US and radiography as cost-effective and accessible options that maintain diagnostic accuracy while minimizing risk. Ensuring equitable access to appropriate imaging is critical for timely diagnosis and treatment across diverse pediatric populations.

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Limping Child (PEDMS-4)

Guideline

General Evaluation of the Limping Child (PEDMS-4.1)

MSP.LC.0004.1.A

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- This guideline primarily applies to children under the age of 6 years. It may also be applied to older children with pre-existing conditions who may not be able to communicate, such as a child with severe intellectual disability. Many of these cases will be urgent, because of the risk of adverse outcomes in delay of diagnosis.
- A pertinent clinical evaluation, including a detailed history and physical examination, should be performed, which will help determine any indication for advanced imaging. Based on this clinical evaluation, the most likely etiology should be determined, usually trauma, infection, or neither trauma nor infection.
- X-ray should be obtained if there are no localized findings on physical examination.

Limping Child with Suspected Trauma (PEDMS-4.2)

MSP.LC.0004.2.A

v2.0.2026

- Plain x-rays are indicated for detection of fractures, destructive lesions, and avascular necrosis. For children under age 4 this may require x-rays of the entire leg from hip to foot. If clinical suspicion is high for “toddler fracture” imaging may start with tibia/fibula x-rays, and if a fracture is demonstrated, additional imaging may not be required.
- If initial x-rays are negative, but limping symptoms or avoidance of weight-bearing persist, follow-up x-rays in 7 to 10 days are indicated.
  - If plain films are negative and suspicion remains high for stress fractures or soft tissue injury, the following are medically necessary:
    - MRI without contrast of the affected body area OR
    - Radionuclide bone scan (CPT® 78300, CPT® 78305, CPT® 78306, or CPT® 78315), SPECT/CT (CPT® 78830), or SPECT (CPT® 78803) if implanted hardware or devices precluding MRI are present.
- CT use is limited in the evaluation of the limping child with suspected trauma.

Limping Child with Suspected Infection (PEDMS-4.3)

MSP.LC.0004.3.A
v2.0.2026

- Pain localized to hip:
  - It is essential to exclude septic arthritis. Ultrasound of the hip (CPT® 76881 or 76882) is used to exclude hip joint effusion.
    - Hip joint fluid aspiration to distinguish infection from non-infectious etiologies If hip joint effusion is demonstrated.
    - Plain x-rays should be obtained if no hip joint effusion is demonstrated.
    - MRI without contrast (CPT® 73721) or without and with contrast (CPT® 73723) is medically necessary if plain films are not diagnostic.
- Pain localized distal to hip:
  - MRI without contrast or without and with contrast of the affected body part is medically necessary if plain x-rays are not diagnostic.
- Non-localized pain:
  - Plain x-rays of the spine, pelvis, and lower extremities may be necessary to localize the abnormality.
  - If plain x-ray is not diagnostic and suspicion for infection remains high, one of the following:
    - Whole-body bone scan (CPT® 78306) OR
    - SPECT (CPT® 78803) OR
    - SPECT/CT (CPT® 78830) OR
    - MRI without contrast or without and with contrast of the affected body area

Limping Child with No Evidence of Trauma or Infection (PEDMS-4.4)

MSP.LC.0004.4.A
v2.0.2026

- This differential diagnosis is quite broad.
  - Transient (or toxic) synovitis of the hip:
    - Ultrasound of the hip (CPT® 76881 or CPT® 76882) is the medically necessary initial exam.
      - Plain x-rays if no hip effusion is demonstrated.
      - Hip joint fluid aspiration is indicated if a hip joint effusion is demonstrated. This is usually performed with US guidance, though fluoroscopic guidance or blind aspiration may be required.
  - Avascular Necrosis, see: **Avascular Necrosis (AVN)/ Legg-Calvé-Perthes Disease (PEDMS-6)**
  - Juvenile Idiopathic Arthritis, see: **Juvenile Idiopathic Arthritis (PEDMS-10.1)**
  - Histiocytic Disorders, see: **Histiocytic Disorders (PEDONC-18)** in the Pediatric and Special Populations Oncology Imaging Guidelines
  - Neoplasm, see: **General Guidelines (PEDONC-1)**, **Pediatric Leukemias (PEDONC-3)**, **Neuroblastoma (PEDONC-6)**, **Pediatric Soft Tissue Sarcomas (PEDONC-8)**, or **Bone Tumors (PEDONC-9)** in the Pediatric and Special Populations Oncology Imaging Guidelines
  - Child abuse, see: **Suspected Physical Child Abuse (PEDMS-7)**

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Developmental Dysplasia of the Hip (PEDMS-5)

Guideline

Developmental Dysplasia of the Hip (PEDMS-5)
Evidence Discussion (PEDMS-5)
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Developmental Dysplasia of the Hip (PEDMS-5)

MSP.DZ.0005.A
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Screening studies

- The routine use of ultrasound in screening neonates and infants without risk factors for developmental dysplasia of the hip (DDH) is not recommended by the American Academy of Pediatrics and the American Academy of Orthopedic Surgeons.
- Screening ultrasound (CPT® 76885 or CPT® 76886) is medically necessary for infants between 4 weeks of age and 4 months of age with one or more of the following risk factors:
  - Breech presentation
  - Family history of DDH
  - Abnormal hip exam (e.g., positive Ortolani or Barlow maneuvers, asymmetric thigh folds, shortening of the thigh observed on the dislocated side, limitation of hip abduction)
- For children between 4 and 6 months of age plain x-ray is the initial imaging modality as femoral head ossification is often seen on x-ray in normal individuals.
  - If x-ray is inconclusive, ultrasound (CPT® 76885 or CPT® 76886) is medically necessary.

Follow-Up/Diagnostic Studies

- Ultrasound is medically necessary earlier than 4 weeks of age in individuals with unstable/dislocated hip(s) undergoing abduction brace treatment.
- Follow-up hip ultrasound (CPT® 76885 or CPT® 76886) is medically necessary for the following:
  - Graf type IIA hip with an alpha angle (bony angle) between 50 to 59 degrees in a child less than 3 months of age and follow up hip ultrasound is requested to confirm normal development
  - Subluxation or dislocation was diagnosed on previous hip ultrasound using the dynamic Harke imaging method
  - Prior ultrasound demonstrates abnormal hip and treatment has been applied (such as a Pavlik harness or other device) to document effectiveness of treatment, to ensure the femoral head remains located in the acetabulum, or to identify treatment failure.
    - The usual interval for follow-up sonography is monthly, but earlier imaging is medically necessary for clinical suspicion of treatment failure, subluxation or dislocation of the hip.

- MRI without and with contrast (CPT® 73723), MRI without contrast (CPT® 73721), or CT without contrast (CPT® 73700) is medically necessary to evaluate alignment following reduction. Children in casts or following surgery may require repeated advanced imaging to ensure the reduction remains satisfactory, or to assess incorporation of bone graft material.
- Hip ultrasound is NOT medically necessary for the following:
  - Infants older than 6 months of age as plain x-ray of the hips become more reliable due to femoral head ossification and should be used in infants over 6 months of age.
  - Type I, IIB, IIC, IID, and III hips diagnosed on a previous hip ultrasound using the Graf method. Type I hip is normal, and Type IIB, IIC, IID, and III will have imaging as directed by treating provider.
  - Plain x-ray of the hips should be performed rather than ultrasound if there is a clinical suspicion for teratogenic dysplasia.

Background and Supporting Information

- Developmental dysplasia of the hip (DDH) was formerly known as congenital dislocation of the hip. DDH includes a spectrum of abnormalities including abnormal acetabular shape (dysplasia) and malposition of the femoral head ranging from reducible subluxation to irreducible subluxation or dislocation of the femoral head. 60 to 80% of abnormalities are identified by physical exam, and more than 90% are identified by ultrasound. Treatment may involve placement in a Pavlik harness, casting, or surgery in extreme or refractory cases.
- Hip laxity is normal after birth and usually resolves spontaneously.
- There are two sonographic methods of evaluating the hip: the dynamic stress (Harcke) technique and the static (Graf) technique
- The overwhelming majority of Graf type IIA hips mature spontaneously but follow up may be required to ensure that maturation has occurred.

Evidence Discussion (PEDMS-5)

v2.0.2026

Imaging plays an important role in the evaluation and assessment of developmental dysplasia of the hip (DDH). In the American College of Radiology Appropriateness Criteria, American Academy of Pediatrics recommendations and the American Academy of Orthopedic Surgeons Guideline, it is recommended that ultrasound (US) is appropriate for initial screening, diagnostic and follow-up of infants between 4 week and 4 months of age with risk factors for DDH (e.g., breech presentation, family history, abnormal exam) or earlier than 4 weeks of age in individuals undergoing abduction brace treatment.[1-3] US has been demonstrated to have sensitivity and specificity above 90% for detecting hip instability in early infancy and does not introduce any radiation exposure.[1,2,4] Radiographs are recommended as initial imaging after 4-6 months of age, when femoral head ossification is able to be seen, providing improved diagnostic accuracy.[1,5]

MRI has been recommended for use to evaluate hip alignment following reduction. Post-reduction evaluation may require assessment of adjacent soft tissues and MRI would be the best modality for complete visualization.[1,4,6] The use of MRI avoids ionization radiation, but it may require sedation and/or contrast media which could introduce additional risks such as respiratory depression or allergic reaction.[6] In situations where MRI is contraindicated or not available, CT has been recommended as an alternative. Its use is often limited to special circumstances, however, due to radiation exposure.[1,5]

Access to advanced imaging may be limited in areas with reduced resources, such as rural and underserved communities. Delays in accessing advanced imaging can disproportionately affect those in these socioeconomic situations. This may lead to a greater reliance on radiographs and ultrasound in those with limited access to avoid delays in diagnosis and appropriate [2,5]

References (PEDMS-5)

v2.0.2026

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Avascular Necrosis (AVN) / Legg-Calvé-Perthes Disease / Idiopathic Osteonecrosis (PEDMS-6)

Guideline

Avascular Necrosis and Legg-Calvé-Perthes Disease (PEDMS-6.1)

MSP.AN.0006.1.A

v2.0.2026

- Plain x-ray is the initial imaging study and may be all that is necessary for follow-up.
- MRI Hip without contrast (CPT® 73721) or MRI Hip without and with contrast (CPT® 73723) is medically necessary if the diagnosis is uncertain on plain x-ray, or for preoperative planning.
  - If MRI is contraindicated or unavailable, any one of the following studies is medically necessary in lieu of MRI:
    - CT scan without contrast, OR
    - Nuclear bone scan (CPT® codes: 78300, 78305, 78306, or 78803) OR
    - SPECT/CT (CPT® 78830)

Osteonecrosis (PEDMS-6.2)

MSP.AN.0006.2.A

v2.0.2026

- Osteonecrosis can occur in a number of conditions, including during treatment for developmental dysplasia of the hip.
- Individuals with acute lymphoblastic leukemia, lymphoblastic lymphoma, or other conditions with recurrent exposure to high dose corticosteroids and known or suspected osteonecrosis should be imaged according to guidelines in: **Acute Lymphoblastic Leukemia (ALL) (PEDONC-3.2)** in the Pediatric and Special Populations Oncology Imaging Guidelines.
- Known or suspected osteonecrosis in long-term cancer survivors should be imaged according to guidelines in: **Osteonecrosis in Long Term Cancer Survivors (PEDONC-19.4)** in the Pediatric and Special Populations Oncology Imaging Guidelines.
- X-ray is indicated as initial imaging study
- MRI either without contrast or without and with contrast is medically necessary in other individuals with concern for osteonecrosis and negative or inconclusive recent x-ray, if imaging results will change current individual management. Early phase of osteonecrosis may be seen on MR with normal x-ray findings.
  - CT scan without contrast is medically necessary for surgical planning.

Evidence Discussion (PEDMS-6)

v2.0.2026

Plain radiography remains the typical first-line imaging modality in children with hip or extremity pain and suspected avascular necrosis because of its broad availability and low cost. Radiographs can help exclude other causes of pain (e.g., fracture, slipped capital femoral epiphysis, tumor). When additional diagnostic investigation is needed, MRI is recommended for early detection of osteonecrosis and similar conditions in children due to superior sensitivity and lack of ionizing radiation.[1-3]

Computed tomography (CT) and nuclear medicine modalities (bone scintigraphy, SPECT) may have a role in diagnosing children when MRI is inconclusive or contraindicated, or when detailed assessment of subchondral bone, articular surface integrity, or collapse is needed. CT provides excellent visualization of the bony architecture and degree of structural compromise but involves ionizing radiation and is less preferred in a pediatric context unless structural detail will change management.[1,4,5] Ultrasound can be useful adjunctively (e.g., effusion detection, hip containment in Legg-Calve-Perthes Disease) but has limited sensitivity and specificity for early ON/AVN.[6]

MRI is recommended to evaluate suspicion of Legg-Calve-Perthes Disease. Especially during the early stages of clinical evaluation and diagnosis. Early on, radiographs alone may be insufficient to display structural changes around the femoral head and could lead to a delay in diagnosis.[6] MRI has been shown to be most sensitive in visualizing early ischemic changes before radiographic findings are visible.[2,3]

MRI screening in pediatric oncology populations has demonstrated detection of subclinical lesions, enabling earlier surveillance and management.[5,7] The lack of ionizing radiation is particularly relevant in children who require repeated imaging during growth and long term follow up.[7-9] In children treated for risk factors such as high dose corticosteroids (e.g., in acute lymphoblastic leukemia), malignancy, bone marrow transplantation, or other bone/vascular insults, the literature supports that advanced imaging—particularly MRI—is more sensitive and specific for early ON/AVN prior to collapse of the epiphysis or femoral head.[7,8]

The risks of exposing pediatric individuals to harm should be a consideration during diagnostic imaging. MRI avoids exposure to ionizing radiation and is recommended over CT and bone scan when at all possible.[1,4,9,10] MRI may also allow for earlier detection of osteonecrosis/avascular necrosis before collapse when compared to CT or bone scan. Earlier detection could allow for improved outcomes including long-term joint preservation and reducing the need for surgical intervention.[6,10] It has also been recommended to weigh the benefits versus the risks in the use of sedation and contrast media when selecting an appropriate imaging modality. Complications such as respiratory compromise or allergic reaction could occur.[4] There may also be inequities in access to appropriate imaging which may require specific consideration. Pediatric ON/

AVN disproportionately affects adolescents, children treated in lower-socioeconomic settings, and survivors of childhood cancer; ensuring access to advanced imaging may mitigate disparities in joint salvage outcomes.[1,10,11]

References (PEDMS-6)

v2.0.2026

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Suspected Physical Child Abuse (PEDMS-7)

Guideline

Suspected Physical Child Abuse (PEDMS-7)
Evidence Discussion (PEDMS-7)
References (PEDMS-7)

Suspected Physical Child Abuse (PEDMS-7)

MSP.AB.0007.A
v2.0.2026

The suspicion of physical abuse of a child often requires imaging, both for clinical management and for forensic purposes. Every effort should be made to support reasonable requests for imaging in these children.

Child abuse injuries may affect any organ or system. Fractures are common, but injuries may also involve solid and hollow visceral organs, and/or superficial and deep soft tissue injuries. Some fracture patterns are highly correlated with non-accidental mechanisms, such as the classic metaphyseal lesion, also known as a corner fracture or bucket handle fracture, but fractures may occur in any bone. Unsuspected fractures, multiple fractures at various stages of healing, or fractures of a configuration or distribution inconsistent with the history provided, may raise the suspicion for physical abuse.

Skeletal Injury

- The x-ray skeletal survey is the primary imaging procedure for detecting fractures, especially in children age 24 months or younger. In older children, skeletal survey may be indicated, but more tailored x-ray evaluation based on history and physical examination may be preferable to skeletal survey.
- When skeletal survey is negative, but clinical suspicion remains high, either of the following are medically necessary:
  - Bone scan (CPT® codes: CPT® 78300, 78305, 78306, 78315, or 78830) OR
  - Distribution of Radiopharmaceutical Agent SPECT (CPT® 78803)
- Suspected injury to the spine should usually first be evaluated with plain x-rays. CT without contrast and/or MRI without contrast or without and with contrast may be required for complete evaluation of osseous and soft tissue spine injuries. If requested for suspected or known physical abuse, both CT without contrast and/or MRI without contrast or without and with contrast of suspected sites are medically necessary.
- CT Chest without contrast (CPT® 71250) is medically necessary in individuals with a negative skeletal survey and a high clinical suspicion for rib fracture associated with child abuse.
- A repeat skeletal survey performed approximately 2 weeks after the initial examination can provide additional information on the presence and age of child abuse fractures and should be performed when abnormal or equivocal findings are found on the initial study and when abuse is suspected on clinical grounds

Head Injury

- CT Head without contrast (CPT® 70450) is medically necessary when there is clinical evidence of head injury or when skull fracture of any age is detected on survey skull x-ray.
  - CT Head without contrast (CPT® 70450) is also medically necessary when known or suspected cervical trauma is present in a pediatric individual.
  - CT Head without contrast (CPT® 70450) is medically necessary in individuals less than 1 year of age, even if no neurologic symptoms are detected due to the great potential morbidity of abuse head trauma. MRI Brain without contrast (CPT® 70551) is also medically necessary.
  - MRI Spine without contrast (CPT® 72141, 72146, 72148) or without and with contrast (CPT® 72156, 72157, 72158) is medically necessary when there is clinical evidence of head injury or when skull fracture of any age is detected on survey skull x-ray. CT Spine (CPT® 72125, CPT® 72128, CPT® 72131) is medically necessary if MRI is not readily available.
- MRI Brain without contrast (CPT® 70551) or without and with contrast (CPT® 70553) is medically necessary to evaluate brain parenchymal injury, or in a child where the clinical signs of brain injury are not sufficiently explained by CT findings.

Other Body Area Injuries

- CT should be performed with contrast unless an absolute contraindication exists.
- ANY of the following imaging studies are medically necessary for suspected injury to the abdomen or pelvis:
  - Abdominal ultrasound (CPT® 76700)
  - Pelvic ultrasound (CPT® 76856)
  - CT Abdomen with contrast (CPT® 74160)
  - CT Pelvis with contrast (CPT® 72193)
  - CT Abdomen and Pelvis with contrast (CPT® 74177)
- ANY of the following imaging studies are medically necessary for suspected injury to the chest:
  - CT Chest without contrast (CPT® 71250)
  - CT Chest with contrast (CPT® 71260)

Screening of other children

- Contacts are defined as the asymptomatic siblings, cohabiting children, or children under the same care as an index child with suspected child physical abuse. All contact children should undergo a thorough physical examination and a history elicited prior to imaging. Contact children younger than 12 months should have neuroimaging, and skeletal survey. CT Head without contrast (CPT® 70450) or MRI Brain without contrast (CPT® 70551) is medically necessary. Contact children aged

12 to 24 months should undergo skeletal survey. No routine imaging is medically necessary in asymptomatic children older than 24 months.

References (PEDMS-7)

v2.0.2026

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Evidence Discussion (PEDMS-7)

v2.0.2026

Imaging for the evaluation of suspected physical abuse of a child is critical to both the success of clinical management and for forensic investigation. In children under 2 years of age, radiographic skeletal surveys are typically recommended as the cornerstone for detecting fractures in suspected abuse.[1-3] Skeletal surveys may still be helpful in older children, but when a more thorough history can be obtained, a tailored radiographic examination may be appropriate. When radiographic examinations are negative but clinical suspicion remains bone scan is recommended as it is useful in detecting subtle fractures.[1,2]

Radiographs may not always be sufficient in the examination of suspected physical abuse. MRI has been recommended, especially in suspected spine and head injury, and is preferred over CT in its ability to detect ligamentous and cord injury.[4-6] CT can be a helpful option to provide improved bony details in assessing head and spine injury or when MRI is contraindicated or unavailable.[1,7] When acute intracranial injury is suspected or skull fracture is detected on radiograph, CT of the head is recommended as a first-line imaging due to its speed and sensitivity.[1,5,7] Additionally, MRI of the spine is also recommended in cases of clinical evidence of head injury or detection of skull fracture to add diagnostic value beyond head imaging.[4,5] CT of the abdomen and pelvis, with contrast, is recommended when there is concern for visceral injury.[1,7,8] CT of the chest may also be of use as it can help detect rib fractures and other injury not evident on radiographs.[1,7]

When appropriate, MRI is recommended over CT or bone scan to eliminate risks associated with exposure to radiation. However, MRI may require sedation which presents other risks such as respiratory depression.[1,4,7,8] Acute traumatic cases, or individuals with limited access to imaging types, may be better served by the type of image that can provide a diagnosis in a timely manner to avoid harm due to delays in diagnosis.[3,5,6]

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Infection/Osteomyelitis (PEDMS-8)

Guideline

Infection/Osteomyelitis (PEDMS-8)
References (PEDMS-8)

Infection/Osteomyelitis (PEDMS-8)

MSP.OI.0008.A

v2.0.2026

- Infection and osteomyelitis imaging indications in pediatric individuals are similar to those for adult individuals other than the limping child.
  - See: **General Infection/Osteomyelitis (MS-9.1)** and **Charcot and Septic Joint (MS-9.2)** in the Musculoskeletal Imaging Guidelines for circumstances other than in the limping child.
  - See: **Limping Child with Suspected Infection (PEDMS-4.3)** for imaging guidelines when limping is present.
  - See: **Inflammatory Musculoskeletal Disease (PEDMS-10)** for imaging guidelines for chronic recurrent multifocal osteomyelitis (CRMO, which is an autoimmune disease).
- Ultrasound of the involved extremity (CPT® 76881 or CPT® 76882) is medically necessary to evaluate for effusion or soft tissue fluid collection
  - Ultrasound is not a prerequisite for other advanced imaging studies
- Bone scan (CPT® 78300, 78305, 78306, or 78315), SPECT/CT (CPT® 78830, or 78832), or SPECT (CPT® 78803, or 78831) is medically necessary for evaluation of suspected bone infection if MRI cannot be done and when infection is multifocal, or when the infection is associated with orthopedic hardware or chronic bone alterations from trauma or surgery. Combining bone scintigraphy with a labeled leukocyte scan enhances sensitivity. A labeled leukocyte scan (radiopharmaceutical localization of tumor, inflammatory process, or distribution of radiopharmaceutical agent(s) imaging) - one of the following CPT® codes: CPT® 78800, CPT® 78801, 78802, or CPT® 78803 in concert with Tc-99m sulfur colloid marrow imaging (one of CPT® codes: CPT® 78102, CPT® 78103, or CPT® 78104) or SPECT/CT (CPT® 78830) is medically necessary in cases with altered bone marrow distribution, such as joint prosthesis.

References (PEDMS-8)

v2.0.2026

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Foreign Body (PEDMS-9)

Guideline

Foreign Body (PEDMS-9)
Reference (PEDMS-9)

Foreign Body (PEDMS-9)

MSP.FB.0009.A

v2.0.2026

- Foreign body imaging indications in pediatric individuals are similar to those for adult individuals. See: **Foreign and Loose Bodies (MS-6.0)** for imaging guidelines.
- The common soft tissue foreign bodies in children are wood, glass, and metal slivers. The latter two elements are radiopaque and visible to some degree on plain x-rays, whereas wood is usually radiolucent and nearly always imperceptible on x-rays. When a radiolucent foreign body is suspected, ultrasound (CPT® 76881 or 76882) is medically necessary to identify the foreign body.

Reference (PEDMS-9)

v2.0.2026

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Inflammatory Musculoskeletal Disease (PEDMS-10)

Guideline

Inflammatory Musculoskeletal Disease (PEDMS-10.0)

MSP.MD.0010.0.A

v2.0.2026

- A pertinent clinical evaluation including a detailed history, physical examination, and plain x-rays should be performed prior to considering advanced imaging.
- Inflammatory arthritis imaging indications in pediatric individuals are very similar to those for adult individuals. See: **Inflammatory Arthritis (MS-12.2)** in the Musculoskeletal Imaging Guidelines. Specific pediatric considerations are included below.

Juvenile Idiopathic Arthritis (PEDMS-10.1)

MSP.MD.0010.1.A

v2.0.2026

- Ultrasound (CPT® 76881 or 76882) is medically necessary for assessment of: size and characteristics of joint effusions, extent of synovial hypertrophy (which is the hallmark of juvenile idiopathic arthritis), and involvement of tendinous structures.
  - Repeat imaging is medically necessary for monitoring treatment or with planned treatment change
  - MRI of the most symptomatic joint without contrast or without and with contrast is medically necessary if ultrasound is inconclusive and MRI findings would alter individual management
- Distribution of Radiopharmaceutical Agent SPECT (CPT® 78802, or 78803), or SPECT/CT (CPT® 78830), is medically necessary for evaluation of facet arthropathy in patients with ankylosing spondylitis, osteoarthritis, or rheumatoid arthritis.
- MRI TMJ (CPT® 70336) is medically necessary annually for detecting silent TMJ arthritis in children with juvenile idiopathic arthritis (JIA).
- MRI without or without and with of the most involved joint is medically necessary to evaluate involved or symptomatic joints in the following situations:
  - When diagnosis is uncertain prior to initiation of drug therapy
  - To study the effects of treatment with disease modifying anti-rheumatic drug (DMARD) therapy
  - To determine a change in treatment
- MRI (with the exception of the annual screening MRI of the TMJ discussed above) is not medically necessary for routine follow-up of treatment.

Chronic Recurrent Multifocal Osteomyelitis (PEDMS-10.2)

MSP.MD.0010.2.A
v2.0.2026

Chronic recurrent multifocal osteomyelitis (CRMO) is a rare autoimmune disease affecting multiple bones, arising most commonly during the second decade of life. Treatment consists of anti-inflammatory and immunomodulatory therapies, and is directed predominantly by status of clinical symptoms (most commonly pain).

- The following imaging is medically necessary for individuals with CRMO for evaluation of new or worsening pain, or response to treatment in individuals without complete clinical resolution of pain symptoms, when plain x-rays are non-diagnostic:
  - Bone scan (CPT® codes: 78300, 78305, 78306, 78315) OR
  - SPECT (CPT® codes: 78803, or 78831), OR
  - Nuclear Bone Marrow imaging (CPT® codes: 78102, 78103, or 78104), OR
  - Radiopharmaceutical localization of tumor, inflammatory process, or distribution of radiopharmaceutical agent imaging (CPT® codes: 78800, 78801, 78802, or 78803), OR
  - SPECT/CT (CPT® codes: 78830, or 78832)
  - MRI without contrast of specific painful body areas when plain x-ray and bone scan are insufficient to direct acute individual care decisions.
- Literature suggests MRI may have greater sensitivity for clinically occult lesions than bone scan. Whole-body MRI (CPT® 76498) is medically necessary for CRMO in the following situations:
  - Individuals suspected of having CRMO if characteristic MR findings of CRMO would preclude the need for a biopsy.
    - Characteristic finding include multiple lesions most commonly involving the juxtaphyseal/peri-physeal portions of the tibia and femur, the clavicle and thoracolumbar spine.
  - Every 6-12 months in individuals with an established diagnosis of CRMO to monitor treatment or to evaluate for clinically occult but radiographically active lesions.
  - See: **Whole Body MR Imaging (Preface-5.2)** for additional details.

Inflammatory Muscle Diseases (PEDMS-10.3)

MSP.MD.0010.3.A

v2.0.2026

- A pertinent clinical evaluation including a detailed history, physical examination, and plain x-rays should be performed prior to considering advanced imaging.

Inflammatory Muscle Diseases:

These include but are not limited to dermatomyositis, polymyositis, and sporadic inclusion body myositis. MRI without contrast of a single site is medically necessary in these disorders for the following purposes:

- Selection of biopsy site
- Clinical concern for progression
- Treatment monitoring
- Detection of occult malignancy

Juvenile Dermatomyositis:

Contrary to adult dermatomyositis, juvenile dermatomyositis is very rarely paraneoplastic in nature, and routine screening for occult neoplasm is not medically necessary.

The following are medically necessary for juvenile dermatomyositis:

- MRI without contrast to confirm the diagnosis and thus avoid a biopsy.
- CT without contrast (CPT® 73700) or MRI (CPT® 73718) to follow progressive calcification in muscles
  - Both CT and MRI are rarely indicated concurrently.
- CT Chest (CPT® 71260) and Abdomen and Pelvis (CPT® 74177) with contrast for individuals with palpable lymphadenopathy or hepatosplenomegaly.

Evidence Discussion (PEDMS-10)

v2.0.2026

Imaging plays a critical role in the evaluation and management of pediatric inflammatory musculoskeletal diseases. Initial radiographs, along with a detailed history and physical examination, can help determine what advanced imaging may be needed. Guidelines recommend that imaging strategies be tailored to the clinical scenario to optimize diagnostic accuracy and safety.[1,2]

MRI and ultrasound (US) are recommended as first-line advanced imaging for juvenile idiopathic arthritis (JIA). US has been shown to be instrumental in detecting joint effusion and is recommended for the early detection synovial inflammation.[1,3,4] MRI, with sensitivity exceeding 90% in JIA, is recommended when US is inconclusive as it can provide comprehensive assessment of joint inflammation, bone marrow edema, and cartilage damage.[5,6] CT and scintigraphy are rarely recommended due to radiation exposure, but may be necessary in limited or atypical cases.[1]

Both bone scintigraphy and MRI are recommended for the diagnostic imaging of chronic recurrent multifocal osteomyelitis (CRMO). Scintigraphy can be helpful in the assessment of new or worsening pain and evaluating the response to treatments.[7] However, it has been shown to have lower sensitivity and specificity compared to MRI.[7] With sensitivity over 90% for lesion detection, whole-body MRI is recommended as the superior modality for detecting multifocal bone lesions and monitoring disease activity.[2,7-10] Additionally, MRI avoids ionizing radiation, making it safer for repeated imaging compared to CT or bone scans.[9]

MRI is also the recommended imaging modality to confirm diagnosis for juvenile muscle disease (e.g., dermatomyositis, polymyositis, inclusion body myositis). MRI is more sensitive to deep muscle edema and changes than US and may help to avoid unnecessary biopsy.[3,6] CT is not typically recommended for general diagnosis as it has limited use in soft tissue visualization and to avoid radiation exposure.[1] However, CT may be helpful in the assessment of muscle calcification or enlargement of abdominopelvic organs and/or lymph nodes.

Special consideration of potential risks to the individual from imaging must be made, especially in cases where monitoring through repeat images over time will be needed.[9] CT and bone scans involve ionizing radiation which can be harmful and should be avoided when possible.[1,9] While MRI does not expose an individual to radiation, younger individuals may require sedation for clear images to be obtained which can pose risks such respiratory depression.[5,11] There are also risks of allergic reactions to IV contrast. Additional consideration should be given to those with limited access to advanced imaging. Rural and limited resource areas may not provide easy access to the most appropriate imaging modality.[12] Alternatives may be recommended to avoid delays in appropriate care.

References (PEDMS-10)

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Muscle/Tendon Unit Injuries (PEDMS-11)

Guideline

Muscle/Tendon Unit Injuries (PEDMS-11)

Muscle/Tendon Unit Injuries (PEDMS-11)

MSP.MI.0011.A

v2.0.2026

- Muscle and tendon unit injury imaging indications in pediatric individuals are identical to those in the general imaging guidelines. See: **Muscle and Tendon Injuries (MS-11.0)** in the Musculoskeletal Imaging Guidelines.

Osgood-Schlatter Disease (PEDMS-12)

Guideline

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Osgood-Schlatter Disease (PEDMS-12)

MSP.OD.0012.A

v2.0.2026

- Osgood-Schlatter Disease is defined as traction apophysitis of the tibial tubercle in skeletally immature individuals. Diagnosis is by clinical examination and x-ray, and treatment is conservative.
- Advanced imaging is not indicated in this disorder.

Evidence Discussion (PEDMS-12)

v2.0.2026

Osgood-Schlatter disease is a self-limiting condition that is secondary to repetitive stress of the knee extensor mechanism. It is recommended that clinical exam, history and X-rays are sufficient for diagnosis with high accuracy. Advanced imaging adds little diagnostic benefit, unnecessarily increases healthcare costs, and is generally not recommended.[1-4]

References (PEDMS-12)

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Popliteal (Baker) Cyst (PEDMS-13)

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Popliteal (Baker) Cyst (PEDMS-13)

MSP.PC.0013.A
v2.0.2026

Popliteal or Baker cyst in children is a different clinical entity than in adults and is almost never due to intra-articular pathology. These lesions are usually treated conservatively and rarely require surgery.

- Ultrasound (CPT® 76881 or 76882) is the medically necessary initial imaging study.
- MRI without contrast (CPT® 73721) is medically necessary for preoperative planning or if ultrasound is non-diagnostic.

Evidence Discussion (PEDMS-13)

v2.0.2026

Ultrasound is recommended as a first-line imaging modality for Baker's cyst detection. High accuracy has been reported with sensitivity ranging from 94% to 97% and specificity approaching 100% compared with MRI in pediatric and adult populations. Ultrasound offers practical advantages including portability, low cost, rapid acquisition, and absence of ionizing radiation, making it particularly suitable for children. Ultrasound is also well suited for follow-up of known Baker's cysts and for screening in clinical or population settings due to its accessibility and strong diagnostic performance.[1,2]

For children aged 5 years and older presenting with chronic knee pain, the American College of Radiology (ACR) recommends that when initial imaging is non-diagnostic, MRI without contrast is usually appropriate for comprehensive evaluation of intra-articular structures. MRI and ultrasound generally provide concordant information on cyst presence, but MRI adds detail on associated meniscal or cartilage pathology when clinically relevant. Additional details from MRI may be necessary for preoperative planning. Sedation may be necessary for MRI in younger children due to longer acquisition times and the need for stillness, which may involve risk of complications such as respiratory depression.[1,2]

References (PEDMS-13)

v2.0.2026

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Slipped Capital Femoral Epiphysis (SCFE) (PEDMS-14)

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Slipped Capital Femoral Epiphysis (SCFE) (PEDMS-14)
References (PEDMS-14)

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Slipped Capital Femoral Epiphysis (SCFE) (PEDMS-14)

MSP.FE.0014.A
v2.0.2026

Slipped capital femoral epiphysis (SCFE) should be considered in young adolescents or preadolescents with groin, anterior thigh, or atraumatic knee pain. Symptoms often include a history of intermittent limp and pain for several weeks or months that are often poorly localized to the thigh, groin, or knee. Any obese adolescent or preadolescent presenting with a history of a limp and thigh, knee, or groin pain for several weeks to one month should be presumed to have a slipped capital femoral epiphysis (SCFE).

Imaging studies:

- Anteroposterior and lateral x-rays (frog leg or cross table lateral) of both hips will confirm or exclude the diagnosis.
  - If clinical suspicion remains after negative plain films, MRI without contrast (CPT® 73721) or without and with contrast (CPT® 73723) is medically necessary to detect widening of the physis before the femoral head is displaced (pre-slip).
- Because a significant percentage of SCFE is bilateral at presentation, it is medically necessary to evaluate the contralateral hip if requested, as some surgeons advocate surgical treatment of pre-slip.
- If MRI was not completed for diagnosis, MRI without contrast (CPT® 73721) is medically necessary for preoperative planning.

References (PEDMS-14)

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Limb Length Discrepancy (PEDMS-15)

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Limb Length Discrepancy (PEDMS-15)

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Limb Length Discrepancy (PEDMS-15)

MSP.LL.0015.A

v2.0.2026

- Limb length discrepancy imaging indications in pediatric individuals are identical to those in the general imaging guidelines. See: **Limb Length Discrepancy (MS-17.0)** in the Musculoskeletal Imaging Guidelines.

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Congenital Anomalies of the Foot and Lower Extremity (PEDMS-16)

Guideline

Tarsal Coalition (Calcaneonavicular Bar/ Rigid Flat Foot) (PEDMS-16.1)

MPS.CD.0016.1.A

v2.0.2026

- Plain x-rays should be performed initially since the calcaneonavicular bar is readily visible in older children and adults.
  - Talocalcaneal coalition is more difficult to evaluate on plain x-rays.
- CT without contrast (CPT® 73700) or MRI without contrast (CPT® 73718) is medically necessary if tarsal coalition is suspected (because of restricted hindfoot motion on physical exam), and plain x-rays are inconclusive.

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Club Foot (PEDMS-16.2)

MSP.CD.0016.2.A
v2.0.2026

Club Foot is a congenital foot contracture with foot in equinus (plantar flexion) and heel and forefoot in varus/adduction (turned in). Immediate diagnosis and specialty evaluation in the first week of life provide the best chance for successful correction.

- Plain x-rays should be performed initially since the anomaly is readily visible in older children and adults.
- Ultrasound (CPT® 76881 or 76882) is medically necessary to characterize the cartilaginous tarsal bones and demonstrate tarsal bone alignment in infants with non-ossified tarsal bones.
- MRI (CPT® 73718) or CT (CPT® 73700) is medically necessary to determine residual deficits following repair.
  - Ultrasound is not required prior to MRI or CT if those studies are appropriate.

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Vertical Talus (PEDMS-16.3)

MSP.CD.0016.3.A

v2.0.2026

- Congenital vertical talus (also known as congenital rocker-bottom foot) is a fixed foot deformity characterized by irreducible talonavicular dislocation. The talus is plantar flexed and does not articulate with the navicular bone.
- Plain x-rays should be performed initially since the anomaly is readily visible in older children and adults.
- MRI (CPT® 73718) or CT (CPT® 73700) are medically necessary to determine residual deficits following repair.

Femoral Anteversion and Tibial Torsion (PEDMS-16.4)

MSP.CD.0016.4.A

v2.0.2026

- Femoral anteversion is a rotational deformity of the femur, which may lead to an in-toeing gait.
- Tibial torsion is a rotational deformity of the tibia that may lead to in-toeing or out-toeing gait, and can be associated with the foot deformities already discussed in **Tarsal Coalition (Calcaneonavicular Bar/Rigid Flat Foot) (PEDMS-16.1)**, **Club Foot (PEDMS-16.2)**, and **Vertical Talus (PEDMS-16.3)**.
- Both deformities are typically diagnosed on clinical examination, but CT Lower Extremity without contrast (CPT® 73700) OR MRI Lower Extremity without contrast (CPT® 73718) is medically necessary for preoperative evaluation.

References (PEDMS-16)

v2.0.2026

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Policy History and Instructions for Use

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Policy History and Instructions for Use

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Instructions for Use

This Medical Policy provides assistance in interpreting United HealthCare Services, Inc. standard benefit plans. When deciding coverage, the federal, state (Ohio Administrative Code [OAC]) or contractual requirements for benefit plan coverage must be referenced as the terms of the federal, state (OAC) or contractual requirements for benefit plan coverage may differ from the standard benefit plan. In the event of a conflict, the federal, state (OAC) or contractual requirements for benefit plan coverage govern.

Before using this policy, please check the federal, state (OAC) or contractual requirements for benefit plan coverage. United HealthCare Services, Inc. reserves the right to modify its Policies and Guidelines as necessary. This Medical Policy is provided for informational purposes. It does not constitute medical advice.

United HealthCare Services, Inc. uses InterQual® for the primary medical/surgical criteria, and the American Society of Addiction Medicine (ASAM) for substance use, in administering health benefits. If InterQual® does not have applicable criteria, United HealthCare Services, Inc. may also use United HealthCare Services, Inc.'s Medical Policies, Coverage Determination Guidelines, and/or Utilization Review Guidelines that have been approved by the Ohio Department for Medicaid Services. The United HealthCare Services, Inc.'s Medical Policies, Coverage Determination Guidelines, and Utilization Review Guidelines are intended to be used in connection with the independent professional medical judgment of a qualified health care provider and do not constitute the practice of medicine or medical advice.

Policy History/Revision Information

Date	Summary of Changes
02/01/2024	Annual evidence-based updates
07/01/2024	Interim evidence-based updates
05/01/2025	Annual evidence-based updates
11/06/2025	Annual evidence-based updates
05/07/2026	Interim evidence-based updates