



Radiology Coding

Imaging Modalities, CPT Selection Rules & Modifiers

CODING DECODED

1. What Is Radiology?

Radiology is a division of science that uses imaging techniques — x-ray, ultrasound, MRI/MRA, CT/CTA, and PET scans — to diagnose and treat health conditions.

Modality	Description
X-ray	A form of electromagnetic radiation and a non-invasive procedure that produces a black-and-white picture of internal structures. Different tissues absorb different amounts of radiation, and bone (high calcium content) absorbs the most.
CT Scan	Computed Tomography — special x-ray images, combined with computer-processed pictures, that can be taken at any angle to view cross-sectional images of the body.
CTA	Computed Tomography Angiography — mainly used to study blood vessels; contrast material is used for a clear picture of the vessels.
MRI	Magnetic Resonance Imaging — uses a strong magnetic field and radio waves to form a picture of internal organs/body parts. Safer than radiation-based imaging.
MRA	Magnetic Resonance Angiography — used for the study of blood vessels.
Ultrasound / Sonogram	Uses sound waves to produce images that study soft-tissue structures.
Doppler / Duplex Scan	Used to study blood vessels.
PET Scan	Positron Emission Tomography — produces multidimensional color images of the body using a special radioactive tracer dye to observe metabolic processes.

2. CPT Book Organization

In the CPT book, under the Radiology section header [Diagnostic Radiology (Imaging)], all codes are arranged in anatomical order. The sub-headers, in order, are:

- 1. Head and Neck
- 2. Chest
- 3. Spine and Pelvis
- 4. Upper Extremities
- 5. Lower Extremities
- 6. Abdomen

Within each subheader of Diagnostic Radiology, codes are arranged in the following order:

- X-ray
- CT
- CTA
- MRI
- MRA

3. X-Ray CPT Coding Guidelines

X-ray codes are arranged from minimal view to maximum views (a stand-alone code followed by one or more extended codes).

Example — X-Ray Wrist: CPT 73100 — radiological examination of the wrist, 2 views. CPT 73110 — radiological examination of the wrist, minimum of 3 views.

- **A.** If a single view of a wrist x-ray is performed, append modifier 52 (reduced service) to CPT 73100, since the code description states 2 views.
- **B.** If four or more views of a wrist x-ray are taken, no modifier is needed with CPT 73110, since the description already states a minimum of 3 views.

- **C.** If bilateral wrist x-rays are taken, code using either modifier 50 (bilateral procedure), or modifiers RT and LT. Example: 73100-50, or 73100-RT plus 73100-LT.
- **D.** Repeat procedures: when the same procedure is repeated on the same day, use modifier 76 or 77 depending on the performing physician — 76 if performed by the same physician, 77 if performed by a different physician.

Example: Two views of a wrist x-ray performed at 10:00 am, repeated at 11:00 am by the same physician → 73100, 73100-76.

Example: Same scenario, but repeated by a different physician → 73100, 73100-77.

- **E.** If both the major and minor views of the same anatomic location are performed on the same day, bill with modifier 59; the same applies for the same CPT but different anatomy.

Example: Three views of the right wrist at 10:00 am, and two more views of the right wrist at 11:00 am (same location, different views) → 73110, 73100-59.

Radiologic examination of overlapping anatomic locations, such as hand/fingers and foot/toes, performed on the same day, can be billed with modifier 59.

Example: Three views of the hand and two views of the fingers at different times on the same day →

Hand and fingers: 73130, 73140-59

Foot and toes: 73630, 73660-59

When a combination CPT code exists to describe multiple services performed, there is no need to code separately.

- X-ray of ribs with chest: CPT 71101 & 71111
- X-ray of hips with pelvis: CPT 73501 – 73523

Modifiers **26** and **TC** are used to denote the professional and technical components respectively.

Note: Selection of the x-ray CPT is based only on the number of views (anterior, lateral, oblique, etc.) taken, not the picture or image count.

4. CT, CTA, MRI & MRA Coding Guidelines

CT Scan

CT scan codes are arranged based on whether contrast material is used. The first stand-alone code is without contrast, followed by two extended codes — with contrast, and with-and-without contrast.

Example — CT of Chest: 71250 (without contrast), 71260 (with contrast), 71270 (with and without contrast).

- Combination codes exist for CT of abdomen and pelvis (74176, 74177 & 74178), with individual codes for CT of the abdomen (74150, 74160, 74170) and CT of the pelvis (72192, 72193, 72194). If both are performed on the same day, report only the combination code.
- If 3D is performed along with a CT scan, report both the CT scan and 3D — using either CPT 76376 or 76377, depending on whether an independent workstation is required.

Billing note: If a CT scan is performed without IV contrast, and later the same day another CT scan of the same anatomical site is repeated with contrast, code as a single "with and without contrast" study.

Contrast material administered via **intravenous, intra-arterial, intra-articular, and intra-theccal** routes is considered a contrast study. Contrast administered via the **rectal or oral** route is not considered a contrast study.

CTA Scan

CTA codes are mostly single codes following CT codes. All CTA codes are with contrast study and include image post-processing — 3D codes (76376/76377) should not be billed separately.

MRI Scan

MRI scan codes are arranged based on whether contrast material is used, following the same three-tier pattern as CT.

Example — MRI of Brain: CPT 70551 (without contrast), CPT 70552 (with contrast), CPT 70553 (with and without contrast).

- One exception: MRI of the spinal canal and contents, with and without contrast, has a separate CPT (72156, 72157 & 72158).

MRI of the upper and lower extremities each have two sets of codes for joint and non-joint studies:

- Upper extremity non-joint study — arm/forearm (73218–73220)
- Upper extremity joint study — shoulder/elbow/wrist (73221–73223)
- Lower extremity non-joint study — thigh/lower leg (73718–73720)
- Lower extremity joint study — hip/knee/ankle (73721–73723)

Note: If the shoulder and elbow of the same extremity are performed the same day, append modifier 59 (distinct procedures). Example: 73221, 73221-59.

MRA Scan

MRA scan codes are mostly a single code following MRI codes; in rare cases there are three codes (a stand-alone code followed by two extended codes).

Example — MRA of Neck: CPT 70547 (without contrast), CPT 70548 (with contrast), CPT 70549 (with and without contrast).

3D codes (76376/76377) should not be billed separately along with MRA codes.

5. Surgical Guidance & Imaging Guidance Codes

All surgery-related radiological supervision and interpretation codes, as well as imaging guidance codes (ultrasound, fluoroscopic, CT, MR guidance), are listed in the Radiology section.

Guidance Type	CPT
Ultrasound guidance	76937 (vascular) & 76942 (non-vascular)
Fluoroscopic guidance	77001 (vascular), 77002 (non-vascular), 77003 (spinal)
CT guidance	77012
MRI guidance	77021

Based on medical documentation, assign the most appropriate guidance CPT code along with the surgery code.

6. Diagnostic Ultrasound

Different anatomic regions have both "complete" and "limited" ultrasound codes. Note the elements that comprise a complete exam — the documentation should contain all listed elements, or state a reason an element could not be visualized (e.g., surgically absent, obscured by bowel gas).

If fewer than the required elements for a complete exam are documented, report the limited study code.

Example: Ultrasound of the abdomen requires 8 elements (liver, gallbladder, CBD, pancreas, spleen, kidneys, upper abdominal aorta, IVC) → CPT 76700. If only a single organ or quadrant is examined → CPT 76705.

Note: A limited exam of an anatomic region should not be reported with a complete exam of that same region at the same session. If performed at different sessions, both may be billed, with modifier 59 on the limited-service code.

Example: A complete ultrasound of the abdomen followed by a limited ultrasound of the abdomen (for appendicitis) on the same day → 76700, 76705-59.

Evaluation of vascular structures using both color and spectral **Doppler** is reported using the appropriate CPT (93880–93990) from the Medicine section.

Ultrasound is not reportable without a complete evaluation of the organ/anatomic region, image documentation, and a final written report.

Ultrasound of Bladder

Do not report CPT 76775 (retroperitoneal ultrasound) for a bladder ultrasound. The bladder is located in the pelvis, so select the limited pelvis ultrasound study code (CPT 76857). If both kidneys and bladder are examined to rule out urinary tract pathology, code CPT 76770 (US, retroperitoneal, complete).

Pelvic Ultrasound

CPTs 76801, 76805, 76811, 76815, 76817. The CPT manual has two different sets of codes for Obstetrical and Non-Obstetrical studies — OB is mainly for pregnant patients, and Non-OB codes can be used for both female and male pelvis examination. Select the appropriate complete or limited code based on the elements listed in the CPT manual.

7. Breast Mammography

Starting January 2018, all "G" codes related to digital mammography were removed. Going forward, use only CPT 77065, 77066, and 77067, which include the CAD (computer-aided detection) service.

CPT selection is based on whether the study is **screening** or **diagnostic**, using modifiers **GH** and **GG**.

- A.** If the patient is scheduled for screening and the physician finds an abnormality and converts the screening into a diagnostic procedure, bill only the diagnostic mammogram with modifier GH.
- B.** If the patient is scheduled for screening, the physician performs screening, finds an abnormality, and performs one additional diagnostic mammogram the same day, append modifier GG to the diagnostic study — bill both screening and diagnostic CPTs with modifier GG.

8. Bone / Joint Studies & Nuclear Medicine

DEXA Scan

CPT 77080 (axial skeleton) and CPT 77081 (appendicular skeleton) — bone density studies, mainly performed for osteoporosis.

T-Score	Interpretation
-1.0 to -2.5	Osteopenia
-2.5 or below	Osteoporosis

Nuclear Medicine

Nuclear medicine is a branch of medicine that uses radioactive substances to diagnose or treat a health condition.

Important terminology to differentiate Nuclear Medicine section CPTs:

Term	Meaning
Limited	One area
Multiple	Two or more areas
Whole-body	Head to toe
SPECT	Single-photon emission computed tomography

Three-phase study (flow phase / blood pool phase / delayed phase):

- A.** Flow phase — images obtained 1 minute after injection.
- B.** Blood pool phase — images obtained 5 minutes after injection.

- **C. Delayed phase** — images obtained 2–4 hours after injection, with some images at 24 hours.

Note: Procedures performed over multiple days (spot or delayed / same or next day) should not be coded for each individual day. Read CPT descriptions carefully.

Some procedures require **pharmacological study drugs**:

- Hepatobiliary imaging — CCK (Cholecystokinin)
- Kidney or brain imaging — Lasix

Study	CPT
PET scan (sometimes combined with CT)	78811 – 78816
HIDA scan (hepatobiliary scintigraphy)	78226 – 78227
MUGA scan (multigated acquisition scan)	78472 – 78473
Lymphoscintigraphy	78195
Octreotide scan (scintigraphy to locate tumors)	78800 – 78804

Stress testing may use treadmill walking/cycling or a drug-induced method.

9. Practice Quiz — CPC Sample Questions

1. A CT of the abdomen and pelvis is performed using oral contrast for a 67-year-old patient with a personal history of colon cancer. The patient is diagnosed with colon malignant neoplasm, metastatic to the rectum, mesenteric lymph nodes, and prostate gland. How would you report this service?

- A. 74176
- B. 74177
- C. 74150, 72192
- D. 74160, 72193

2. Computed tomographic angiography of the heart and coronary arteries was performed with contrast material, and 3D image post-processing was also performed in the hospital. The patient is diagnosed with ASHD. How would you report the professional service?

- A. 71275-26
- B. 71275-26, 76376-26
- C. 75572-26
- D. 75574-26

3. A 29-year-old pregnant patient at 34 weeks with twins presents for a transabdominal ultrasound to assess the amniotic sac, fluid volume, and placenta of both fetuses. How would you report this procedure?

- A. 76815, 76815-59
- B. 76816, 76816-59
- C. 76815
- D. 76805, 76810

4. A 29-year-old male patient with an abnormal mass in his left thigh is here today for an ultrasound of the lower extremity. How would you report this service?

- A. 76881
- B. 76882
- C. 93970
- D. 76886

5. A 46-year-old female with a left breast lump and family history of breast cancer (mother) presents for bilateral diagnostic mammography. The physician orders computer-aided detection along with the mammography, performed in a hospital. How would you report the professional services?

- A. 77062

- B. 77066-26
- C. 77067-26
- D. 77066

6. Mrs. Anne, a 63-year-old with generalized pain, undergoes a DXA scan to rule out osteoporosis. Bone density study of the femur, tibia, and ulna shows a T-score of -2.5. The procedure was performed in the physician's office. How would you report the service globally?

- A. 77081-26, TC
- B. 77081-26, 77081-TC
- C. 77081
- D. 77080

7. A 71-year-old male patient with hepatic cancer receives eight radiation treatments. During the course of treatments, the physician views the port films, reviews the treatment parameters, and assesses the patient's response. How would you report the service?

- A. 77427
- B. 77427 × 2
- C. 77427 × 8
- D. 77427 × 3

8. A 54-year-old female with severe low back pain and radiating pain in the left lower extremity is scheduled for an MRI of the lumbar spine at a radiology center, post-IV contrast. Images show L4-L5 IVDP and spinal canal stenosis. How would you report the service?

- A. 72148
- B. 72132
- C. 72158
- D. 72149

9. A 46-year-old male patient undergoes tomographic myocardial perfusion imaging, multiple studies performed at rest and stress following 9 minutes of treadmill walking, with quantitative wall motion and ejection fraction. Performed in the hospital's nuclear medicine department. How would you report the professional services?

- A. 78452-26
- B. 78454-26
- C. 78473-26
- D. 78469-26

10. A 15-year-old boy falls while playing football and is brought to the ED with swelling and pain in the left wrist. The orthopedician orders a wrist x-ray. Lateral view reveals a displaced radius styloid fracture. How would you report this radiological service?

- A. 73100-52, 26
- B. 73100-26
- C. 73100
- D. 73110

Answer Key

1. A · 2. D · 3. C · 4. B · 5. B · 6. C · 7. B · 8. D · 9. A · 10. A