

2025 Computed Tomography Angiography/Venography (CTA/ CTV) Pelvis

Diagnostic Imaging

CTA-Pelvis-HH
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Pediatric Considerations for Computed Tomography

While computed tomography (CT) is used in children, magnetic resonance imaging (MRI) or ultrasound is preferred for initial evaluation to minimize radiation exposure. CT is reserved for complex cases where detailed imaging is required. By integrating ultrasound and adhering to these guidelines, healthcare providers can optimize diagnostic accuracy while minimizing risks associated with radiation.

Recommendations for CT imaging include **ALL** of the following:

1. Ultrasound first: Utilize ultrasound as the initial modality where appropriate.
2. CT for complex cases: Reserve CT for when ultrasound or MRI is inadequate.
3. Adhere to guidelines: Follow established protocols to ensure safety and efficacy.
4. Minimize radiation exposure: Especially important for children, young adults and pregnant women.

Computed Tomography Angiography/Computed Tomography Venography (CTA/CTV) Pelvis

CTA Pelvis Related National Coverage Determination (NCD)/Local Coverage Determination (LCD)

Please refer to <https://www.cms.gov/medicare-coverage-database/search.aspx> if applicable to the individual's health plan membership.

Type/ID Number	Title
NCD 220.1	Computed Tomography

Clinical Judgment

These medical policies are designed to provide clinical guidance and do not supplant a provider's independent professional judgment. Physicians retain full and independent authority to determine appropriate care based on each patient's individual clinical circumstances. Although services may be subject to documentation requirements, medical necessity review, or coverage limitations, nothing in this policy is intended to restrict or interfere with a physician's independent medical judgment.

CTA General Contraindications

Computed tomography angiography (CTA) is contraindicated for **ANY** of the following:

- Clinical instability (eg, respiratory distress, severe hypotension, unstable arrhythmias)
References: [2] [4]
- Contrast allergy
References: [2] [4]
- Renal impairment (glomerular filtration rate [GFR] is less than 30 ml/min/1.73 m².)
References: [2] [4]
- **CANNOT** follow procedure directions (eg, holding breath, **NOT** moving)
References: [2] [4]

Preamble: Pediatric Diagnostic Imaging

HealthHelp's clinical guidelines for the Diagnostic Imaging program, are intended to apply to both adults and pediatrics (21 years of age or younger), unless otherwise specified within the criteria.

CTA/CTV Pelvis Guideline

Computed tomography angiography/computed tomography venography (CTA/CTV) of the pelvis is considered medically appropriate when the documentation demonstrates **ANY** of the following conditions:

1. Arterial disease, limited to the pelvis, is suspected or known and **ANY** of the following:
 - a. Aneurysm is suspected or known, for evaluating pelvic extent of the aortoiliac junction and the common, external, and internal iliac arteries and their branches, when ultrasound is non-diagnostic or indeterminate and **ANY** of the following:
 - i. Aneurysm is known and complications are suspected (eg, new onset pelvic pain).
 - ii. Aneurysm is suspected and symptomatic (eg, pelvic or back pain, hemodynamic instability).
 - iii. Aneurysm surveillance and **ANY** of the following:
 - A. 2.0 cm to 2.9 cm; follow-up every 3 years
 - B. 3.0 cm to 3.4 cm; follow-up annually
 - C. 3.5 cm or more; follow-up at least every 6 months
 - b. Erectile dysfunction (ED) evaluation when vascular cause is suspected and ultrasound is non-diagnostic or indeterminate.
 - c. Iliac or visceral vascular condition (eg, arteriovenous malformations [AVM], compression syndromes, dissection, fistulas, intramural hematoma, vasculitis) is known **AND** ultrasound is non-diagnostic or indeterminate.

- d. Ischemia or hemorrhage, limited to the pelvis, is suspected or known. (***NOTE:** Needs to be resubmitted as CTA abdomen and pelvis unless there is a specific finding limited to the pelvis.)

References: [5] [6] [15] [15] [14] [11] [6] [13] [1] [8]

2. Post-surgical assessments for evaluation of complications or disease recurrence.
3. Tumor-related vascular invasion or displacement and prior imaging is non-diagnostic or indeterminate.

References: [10]

4. Venous disease, limited to the pelvis, is suspected or known and **ANY** of the following:
 - a. Edema of the lower extremity is diffuse and unexplained **AND** ultrasound is non-diagnostic or indeterminate.
 - b. May-Thurner syndrome (iliac vein compression syndrome) is suspected.
 - c. Pelvic venous disease or pelvic congestion syndrome is suspected **AND** ultrasound is non-diagnostic or indeterminate.
 - d. Venous thrombosis, of iliac vein, is suspected or known and **EITHER** of the following:
 - i. Known, of the inferior vena cava, for further evaluation.
 - ii. Suspected and prior imaging (eg, ultrasound) is non-diagnostic or indeterminate.

References: [3] [7] [12] [9]

CTA/CTV Pelvis Summary of Changes

CTA/CTV Pelvis guideline had the following version changes from 2024 to 2025:

- Added the following to keep in line with current evidence:
 - "Aneurysm is suspected and symptomatic (eg, abdominal or back pain, hypertension." new indication per ACR
 - "Glomerular filtration rate" to "Renal impairment" under Contraindications
 - "Post-surgical assessments for evaluation of complications or disease recurrence." to replace prior peri-procedural indication
- Combined "Iliac vascular condition" and "Visceral vascular condition" into 1 "Iliac or visceral vascular condition" to reduce redundancy
- Removed the following as current evidence no longer supports the indication:

- "Anatomy is known to be complex." from under "Aneurysm" under "Arterial disease" as it is redundant and covered by other Aneurysm indications
- Combination studies as they are redundant
- "Prior CTA pelvis imaging is non-diagnostic or indeterminate." as it is too broad
- "Vascular abnormalities, limited to the pelvis, are suspected or known" from under "Arterial disease" as it is redundant

CTA/CTV Pelvis APC Codes

Table 1. CTA Pelvis APC Codes

Codes	Description
72191	Computed tomographic angiography, pelvis, with contrast material(s), including noncontrast images, if performed, and image postprocessing

CTA/CTV Pelvis Definition section

Allgraft is a tissue or organ transplant from a donor of the same species but genetically different from the recipient.

Aneurysm refers to weakness in an artery wall, allowing it to abnormally balloon out or widen.

Arteriovenous fistula (AVF) is an abnormal connection between an artery and a vein. It happens when one or more arteries are directly connected to one or more veins or venous spaces called sinuses.

Arteriovenous malformation (AVM) are congenital high-flow vascular malformations characterized by abnormal shunting of blood from high-flow feeding arteries to low-resistance veins via a cluster of aberrant blood vessels termed a central nidus, bypassing the normal capillary bed.

Atherosclerosis is a chronic inflammatory disease characterized by the accumulation of fibrofatty plaques within the intima of large- and medium-sized arteries, leading to compromised arterial blood flow and potential vessel wall weakening.

Computed tomography angiography (CTA) is a medical test that combines a computed tomography (CT) scan with an injection of a special dye to produce pictures of blood vessels and tissues in a part of the body.

Computed tomography venography (CTV) is a technique targeted to assess venous anatomy, determine venous patency and delineate collateral circulation, often using contrast material.

Dissection refers to the separation of the layers within the wall of an artery, most commonly the aorta, due to a tear in the intimal layer, leading to the formation of a false lumen.

Edema an abnormal infiltration and excess accumulation of serous fluid in connective tissue or in a serous cavity.

Ehlers-Danlos syndrome is a group of hereditary connective tissue disorders that manifests clinically with skin hyperelasticity, hypermobility of joints, atrophic scarring and fragility of blood vessels.

Embolism is an obstruction of an artery, typically by a clot of blood or an air bubble, that has traveled from another part of the body.

Embolization is a procedure that uses particles, such as tiny gelatin sponges or beads, to block a blood vessel. Embolization may be used to stop bleeding or to block the flow of blood to a tumor or abnormal area of tissue.

Endovascular aneurysm repair (EVAR) is a minimally invasive procedure that treats abdominal aortic aneurysms (AAAs). The procedure involves placing a stent-graft within the aorta to reduce the risk of rupture.

Erectile dysfunction is defined as the persistent inability to achieve or maintain penile erection sufficient for satisfactory sexual performance.

Fibroids are growths made of smooth muscle cells and fibrous connective tissue. These growths develop in the uterus and appear alone or in groups. They range in size, from as small as a grain of rice to as big as a melon. In some cases, fibroids can grow into the uterine cavity or outward from the uterus on stalks.

Fibromuscular dysplasia is a rare blood vessel disorder that causes arteries to narrow and grow larger. FMD occurs when the strong, flexible cells in arteries are replaced with less strong, less flexible cells. This makes the arteries stiffer and more likely to be damaged.

Fistula is an abnormal connection between two epithelialized surfaces, often involving organs such as the gut, bladder, vagina, or skin, and can result from various causes including surgery, trauma, Crohn's disease, diverticular disease, or malignancy.

Glomerular filtration rate (GFR) is a blood test used to check how well the kidneys are working by estimating how much blood passes through the glomeruli (tiny filters in the kidneys that filter waste from the blood) each minute.

Hematoma is a mass of usually clotted blood that forms in a tissue, organ or body space as a result of a broken blood vessel.

Hemodynamic instability is a condition caused by abnormal or unstable blood pressure that results in improper circulation and organs of the body do not receive adequate blood flow. It is characterized by chest pain, confusion, abnormal heart rate, loss of consciousness, restlessness, shortness of breath, cold hands, arms, legs or feet.

Hemodynamic stability refers to the maintenance of adequate blood pressure and perfusion to ensure sufficient oxygen delivery to tissues without the need for excessive pharmacological support.

Table 1. Hemodynamic Assessment

Hemodynamic Parameters	Stable Circulation	Compensated Shock	Hypotensive Shock
Conscious Level	Clear and lucid	Clear and lucid	Restless, combative
Capillary refill	Brisk (less than 2 seconds)	Prolonged (greater than 2 seconds)	Very prolonged, mottled skin
Extremities	Warm and pink	Cool peripheries	Cold, clammy
Peripheral pulse	Good volume	Weak and thready	Feeble or absent
Heart Rate	Normal heart rate for age	Tachycardia for age	Severe tachycardia or bradycardia in late shock
Blood Pressure	Normal blood pressure and pulse pressure for age	Normal systolic pressure but rising diastolic pressure; Narrowing pulse pressure; Postural hypertension	Narrow pulse pressure (greater than or equal to 20 mm/Hg; Hypotension for age; Unrecordable blood pressure
Respiratory Rate	Normal respiratory rate for age	Tachypnea	Hyperpnea or Kussmaul's breathing (metabolic acidosis)
Urine Output	Normal	Reducing trend	Oliguria or anuria

Hemorrhage is a copious or heavy discharge of blood from the blood vessels.

Hypotension is a medical condition characterized by low blood pressure. It occurs when the force of blood pushing against the artery walls is lower than normal, typically defined as a systolic pressure below 90 mmHg and/or a diastolic pressure below 60 mmHg. In other words, it is a condition in which the blood pressure is too low.

Iliac vein compression syndrome (May-Thurner syndrome) also known as May-Thurner syndrome, is a condition where the left common iliac vein is compressed by the overlying right common iliac artery and the underlying vertebral body, leading to venous congestion and stasis, which predisposes to venous thromboembolism (VTE).

Indeterminate findings are inconclusive or insufficient for treatment planning.

Intimal hyperplasia is the abnormal thickening of the innermost layer of a blood vessel, primarily due to the proliferation and migration of vascular smooth muscle cells and the accumulation of extracellular matrix.

Intramural hematoma (IMH) is a collection of blood within the wall of the aorta, a life-threatening condition characterized by bleeding into the medial layer of the aortic wall without a visible entry tear into the lumen or a distinct intimal flap, distinguishing it from a true aortic dissection

Ischemia is a deficient supply of blood to a body part (such as the heart or brain) due to obstruction of the inflow of arterial blood.

Loeys-Dietz syndrome is a rare autosomal dominant connective tissue disorder characterized by aggressive aortic aneurysms, arterial tortuosity, and distinctive craniofacial and skeletal features.

Magnetic resonance angiogram (MRA) is a test that uses a magnetic field and pulses of radio wave energy to provide images of blood vessels inside the body, allowing for evaluation of blood

flow and blood vessel wall condition. MRA is used to look for aneurysms, clots, tears in the aorta, arteriovenous malformations and stenosis caused by plaque in the carotid arteries (neck) or blood vessels leading to the lungs, kidneys or legs.

Marfan syndrome is a disorder of connective tissue inherited as a dominant trait, characterized by abnormal elongation of the long bones and often with ocular and circulatory defects.

May-Thurner syndrome (iliac vein compression syndrome) is a condition where the left common iliac vein is compressed by the overlying right common iliac artery and the underlying vertebral body, leading to venous congestion and stasis, which predisposes to venous thromboembolism (VTE).

Non-diagnostic is a result that does not lead to a confirmed diagnosis.

Pediatric approximate ages are defined by the US Department of Health (USDH), the Food and Drug Administration (FDA), and the American Academy of Pediatrics (AAP) as the following:

1. Infancy, between birth and 2 years of age
2. Childhood, from 2 to 12 years of age
3. Adolescence, from 12 to 21 years of age, further defined by the AAP into:
 - a. Early (ages 11–14 years)
 - b. Middle (ages 15–17 years),
 - c. Late (ages 18–21 years)
 - d. Older ages may be appropriate for children with special healthcare needs.

Pelvic congestion syndrome occurs when varicose veins develop around the ovaries, similar to varicose veins that occur in the legs. The valves in the veins no longer function normally, which causes blood to back up. The veins become engorged or “congested”, which can be very painful.

Periprocedural is a medical term that means occurring before, during, or after a medical procedure. “Perioperative” is another term that refers to the time around surgery.

Pseudoaneurysm, also called a false aneurysm, is a leakage of blood from an artery into the surrounding tissue. It occurs when there is a breach in the arterial wall.

Renal impairment is a condition in which the kidneys stop working and are not able to remove waste and extra water from the blood or keep body chemicals in balance.

Retroperitoneal describes the area behind the smooth transparent serous membrane that lines the cavity of the abdomen.

Spontaneous coronary artery dissection (SCAD) is a tear in the wall of a coronary artery. It's an emergency condition that can slow or block blood flow to the heart. This can lead to a heart attack, heart rhythm problems or sudden death.

Stenosis is a narrowing or constriction of the diameter of a bodily passage or orifice.

Stent is a small, narrow tube made of metal or plastic that is inserted into a hollow structure in the body to keep a passageway open.

Surveillance in cancer is the ongoing, timely and systematic collection and analysis of information on new cancer cases, extent of disease, screening tests, treatment, survival and cancer deaths.

Takayasu's arteritis is a chronic inflammatory disease especially of the aorta and its major branches (the brachiocephalic artery and left common carotid artery) that result in progressive stenosis, occlusion and aneurysm formation marked by diminution or loss of the pulse (as in the arm) and ischemic symptoms.

Thrombosis is the formation of a blood clot (partial or complete blockage) within blood vessels, whether venous or arterial, limiting the natural flow of blood and resulting in clinical sequela.

Transcatheter Aortic Valve Implantation/Replacement (TAVI/TAVR) is a minimally invasive procedure that replaces a diseased aortic valve with a man-made or animal tissue valve. TAVR is for patients with severe aortic stenosis, which is a narrowing of the valve opening. The procedure only requires a small cut in the skin and does not require open-heart surgery.

Ultrasound is the diagnostic or therapeutic use of ultrasound and especially a noninvasive technique involving the formation of images used for the examination and measurement of internal body structures and the detection of bodily abnormalities.

Vasculitis involves inflammation of the blood vessels. The inflammation can cause the walls of the blood vessels to thicken, which reduces the width of the passageway through the vessel. If blood flow is restricted, it can result in organ and tissue damage.

Venous thrombosis or compression is the formation of a blood clot in a blood vessel.

Visceral artery is the major artery that supply the intestines, spleen and liver.

CTA/CTV Pelvis References

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Disclaimer section

Purpose

The purpose of the HealthHelp's clinical guidelines is to assist healthcare professionals in selecting the medical service that may be appropriate and supported by evidence to safely improve outcomes. Medical information is constantly evolving, and HealthHelp reserves the right to review and update these clinical guidelines periodically. HealthHelp reserves the right to include in these guidelines the clinical indications as appropriate for the organization's program objectives. Therefore the guidelines are not a list of all the clinical indications for a stated procedure, and associated Procedure Code Tables may not represent all codes available for that state procedure or that are managed by a specific client-organization.

Clinician Review

These clinical guidelines neither preempt clinical judgment of trained professionals nor advise anyone on how to practice medicine. Healthcare professionals using these clinical guidelines are responsible for all clinical decisions based on their assessment. All Clinical Reviewers are instructed to apply clinical indications based on individual patient assessment and documentation, within the scope of their clinical license.

Payment

The use of these clinical guidelines does not provide authorization, certification, explanation of benefits, or guarantee of payment; nor do the guidelines substitute for, or constitute, medical advice. Federal and State law, as well as member benefit contract language (including definitions and specific contract provisions/exclusions) take precedence over clinical guidelines and must be considered first when determining eligibility for coverage. All final determinations on coverage and payment are the responsibility of the health plan. Nothing contained within this document can be interpreted to mean otherwise.

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National and Local Coverage Determination (NCD and LCD)



NOTICE

To ensure appropriate review occurs to the most current NCD and/or LCD, always defer to <https://www.cms.gov/medicare-coverage-database/search.aspx>.

Background

National Coverage Determinations (NCD) and Local Coverage Determinations (LCD) are payment policy documents outlined by the Centers for Medicare and Medicaid Services (CMS) and the government's delegated Medicare Audit Contractors (MACs) that operate regionally in jurisdictions.



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CMS introduced variation between different jurisdictions/Medicare Audit Contractors (MACs) and their associated covered code lists with the transition to ICD 10. The variation resulted in jurisdictions independently defining how codes are applied for exclusions, limitations, groupings, ranges, etc. for the medical necessity indications outlined in the NCD and LCD. Due to this variation, there is an inconsistent use/application of codes and coverage determinations across the United States between the different MACs.

In addition, **WITHOUT** notice, CMS can change the codes that indicate medical necessity and the format of the coverage determinations/associated documents (eg, Articles). This is an additional challenge for organizations to keep up with ongoing, unplanned changes in covered codes and medical necessity indications.

Medical Necessity Codes

Due to the variation in code application between jurisdictions/MACs and that updates can happen without notification, HealthHelp is not able to guarantee full accuracy of the codes listed for any Coverage Determination, and advises that prior to use, the associated Coverage Determination Articles are reviewed to ensure applicability to HealthHelp's programs and any associated NCDs and LCDs.

For Internal Use Only:

11248 11249 11253 11282 11325 11328 11333 11349 11350 11351 11352 11354 11355 11356
11358 11359 11360 11361 11362 11365 11366 11367 11368 11369 11370 11374 11375 11394
11395 11396 11565