

Evolut Clinical Guideline 2003 for Abdomen Magnetic Resonance Angiography (MRA)

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STATEMENT

General Information

- *It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.*
- *Where a specific clinical indication is not directly addressed in this guideline, medical necessity determination will be made based on widely accepted standard of care criteria. These criteria are supported by evidence-based or peer-reviewed sources such as medical literature, societal guidelines and state/national recommendations.*
- *The guideline criteria in the following sections were developed utilizing evidence-based and peer-reviewed resources from medical publications and societal organization guidelines as well as from widely accepted standard of care, best practice recommendations.*

Purpose

Magnetic resonance angiography (MRA) and magnetic resonance venography (MRV) generates images of the blood vessels that can be evaluated for evidence of stenosis, occlusion, or aneurysms without use of ionizing radiation. It is used to evaluate the blood vessels of the abdomen.

NOTE: Authorization for MR Angiography covers both arterial and venous imaging. The term *angiography* refers to both arteriography and venography.

INDICATIONS FOR ABDOMEN MRA

Abdominal Aortic Disease

Abdominal Aortic Aneurysm

- Suspected or known **asymptomatic** abdominal aortic aneurysm (AAA) with **ALL** of the following:
 - Prior ultrasound is inconclusive or insufficient
 - A reason MRA is needed rather than computed tomography (CT) has been provided, (e.g., complex vascular anatomy or suspected complications)
 - The study is ordered at the appropriate AAA surveillance interval ⁽¹⁾:
 - Aneurysm size 2.5-3 cm, every 10 years
 - Aneurysm size 3.0-3.9 cm, every 3 years
 - Aneurysm size 4.0-4.9 cm, annually

- Aneurysm size 5.0-5.4 cm, every 6 months
- Known or suspected **symptomatic** AAA when ^(1,2)
 - Symptoms may include:
 - Abrupt onset of severe sharp or stabbing pain in the chest, back or abdomen (could indicate possible aneurysm rupture)
 - Acute abdominal or back pain with a pulsatile or epigastric mass
 - Acute abdominal or back pain and at high risk for aortic aneurysm and/or aortic syndrome (risk factors include hypertension, atherosclerosis, prior cardiac or aortic surgery, underlying aneurysm, connective tissue disorder (e.g., Marfan syndrome, vascular form of Ehlers-Danlos syndrome, Loeys-Dietz syndrome), and bicuspid aortic valve) ⁽³⁾

Aortic Syndromes

For initial diagnosis of suspected aortic syndromes and follow-up of known aortic syndromes, (e.g., aortic dissection, intramural hematoma and penetrating atherosclerotic ulcer):

- Frequency for follow up is as clinically indicated

Postoperative Follow-up of Aortic Repair ^(1,2)

Follow-up for post-endovascular repair (EVAR) or open repair of AAA or abdominal extent of iliac artery aneurysms at the following intervals (CT preferred for routine follow-up):

- Routine, baseline post-EVAR study when a reason MRA rather than CT is needed has been provided (such as complex anatomy or suspected complications) with any **ONE** of the following:
 - Within one month of procedure
 - Continued follow up imaging at the following intervals:
 - If no endoleak or sac enlargement is seen:
 - Annually with past inconclusive or insufficient ultrasound
 - Every 5 years (inconclusive or insufficient ultrasound not required at the 5-year interval)
 - If type II endoleak or sac enlargement is seen at any point in time:
 - Every 6 months x 2 years, then annually (does not require prior ultrasound)
- Routine follow up after open repair of AAA when a reason MRA is needed rather than CT has been provided (e.g., complex vascular anatomy or suspected complications with any **ONE** of the following):
 - Within 1 year postoperatively then
 - Annually with past inconclusive or insufficient ultrasound
- Every 5 years (inconclusive or insufficient ultrasound not required at the 5-year interval) if symptomatic or imaging shows increasing or new findings related to stent graft – more

frequent imaging may be needed as clinically indicated

- Suspected complication (such as, new onset lower extremity claudication, ischemia, or reduction in ankle brachial index (ABI) after aneurysm repair
- Evaluation of endovascular/interventional abdominal vascular procedures for luminal patency versus restenosis due to conditions such as atherosclerosis, thromboembolism, and intimal hyperplasia
- Evaluation of post-operative complications, e.g., pseudoaneurysms, related to surgical bypass grafts, vascular stents, and stent-grafts in the peritoneal cavity

Renal Artery Stenosis

In a patient with hypertension use **AND** prior abnormal or inconclusive ultrasound **AND** any one of the following ^(4,5)

- Onset of hypertension prior to the age of 30 without a family history of hypertension and when there is suspicion of fibromuscular dysplasia or a vasculitis
- Failure to obtain adequate blood pressure control on 3 antihypertensive medications, including one diuretic
- Recurrent episodes of sudden onset of congestive heart failure (also known as cardiac disturbance syndrome; may have normal left ventricular function)
- Renal failure of uncertain cause with normal urinary sediment and < 1g of urinary protein per day
- Coexisting diffuse atherosclerotic vascular disease, especially in heavy smokers
- Acute elevation of creatinine after initiation of an angiotensin converting enzyme inhibitor (ACE inhibitor) or angiotensin receptor blocker (ARB)
- Malignant or difficult to control hypertension and unilateral small kidney size (noted on prior imaging)
- New onset of difficult to control or labile hypertension after age 55
- Abdominal bruit lateralizing to one side of the abdomen
- Diagnosis of a syndrome with a higher risk of vascular disease, such as neurofibromatosis ⁽⁶⁾ and Williams' syndrome ⁽⁷⁾

Ischemia or Hemorrhage

- To determine the vascular source of retroperitoneal hematoma or hemorrhage when CT is insufficient to determine the source and CTA is **contraindicated or cannot be performed** (CT rather than MRA/CTA is the modality of choice for diagnosis) hemorrhage) ⁽⁸⁾
- Evaluation of known or suspected mesenteric ischemia/ischemic colitis when CTA is **contraindicated or cannot be performed** ⁽⁹⁾

Other Vascular Abnormalities of the Abdomen

- Initial evaluation of inconclusive vascular findings on prior imaging
- For evaluation or monitoring of non-aortic large vessel or visceral vascular disease of the abdomen (e.g., aneurysm, dissection, arteriovenous malformations (AVM), vascular fistula, intramural hematoma, compression syndromes and vasculitis involving any of the following: inferior vena cava, superior/inferior mesenteric, celiac, hepatic, splenic or renal arteries/veins), and the findings are reasonably expected to be limited to the abdomen. ⁽¹⁰⁾ For assessment in patients with spontaneous coronary artery dissection (SCAD), can be done at time of coronary angiography ^(11,12)
- Suspected complications of known aneurysm of the abdomen as evidenced by clinical findings such as new onset of abdominal pain (prior ultrasound is **NOT** required)
- For patients with fibromuscular dysplasia (FMD) ^(13,14):
 - One-time vascular study from brain to pelvis
- Takayasu's Arteritis ⁽¹⁵⁾:
 - At initial diagnosis
 - Every 6 months for the first 2 years while on therapy
 - Annually after the first 2 years

Venous Disease

- Suspected venous thrombosis (including renal vein thrombosis and/or portal venous thrombosis) if previous studies (such as ultrasound) have not resulted in a clear diagnosis ^(16,17)
- Suspected pelvic congestion syndrome (including May-Thurner and nutcracker syndromes) when ultrasound is indeterminate with (no contraindication to CT is needed) ⁽¹⁸⁾
- Evaluation of suspected pelvic vascular disease or pelvic congestive syndrome when Abdomen MR angiography is ordered in addition to Pelvis MRA with prior inconclusive ultrasound ⁽¹⁸⁾
- For acute unilateral (or asymmetric) lower extremity edema with negative or inconclusive doppler US and CT ⁽¹⁹⁾
- For chronic (greater than 3 months) unilateral (or asymmetric) lower extremity edema and suspicion of malignant cause when Abdomen and Pelvis CT (or Pelvis CT) is negative or inconclusive ⁽¹⁹⁾

Peripheral Vascular Disease ^(20–22)

Note: There is no single CPT code for MRA of the abdomen and pelvis with bilateral lower extremity runoff as there is for CTA (CPT Code 75635). Therefore, when CTA is contraindicated or cannot be performed an analogous MR angiography study is Abdomen MRA (CPT 74185) and one Lower Extremity MRA (CPT 73725). This will provide imaging of the

abdomen, pelvis and both legs. A separate Pelvis MRA authorization is **NOT** required. Only **ONE** Lower Extremity MR Angiography authorization is required (not two).

For evaluation of known or suspected lower extremity vascular disease when CTA is contraindicated or cannot be performed **AND** Abdomen MR Angiography is ordered in addition to lower extremity MR Angiography:

- For known or suspected atherosclerotic peripheral vascular disease-when any **ONE** of the following non-invasive studies are abnormal or indeterminate:
 - Ankle brachial index (< 0.9 is the cutoff for diagnosis of peripheral arterial disease and >1.4 is considered inconclusive)
 - Toe brachial index (< 0.7 is the cutoff for diagnosis of peripheral arterial disease)
 - Segmental pressure test (a pressure gradient > 20 mmHg is considered abnormal)
 - Doppler ultrasound
 - Treadmill test
 - 6-minute walking test
 - For acute critical limb ischemia with any **ONE** of the below clinical signs of peripheral vascular disease ^(1,2):
 - Ischemic rest pain
 - Tissue loss
 - Gangrene
- NOTE:** Prior ultrasound is **NOT** needed
- After prior stenting or surgery (arterial and/or venous) with any **ONE** of the following:
 - Recurrent symptoms
 - Signs of recurrent disease on examination
 - Abnormal / indeterminate non-invasive testing or imaging (e.g., ankle brachial index (ABI), ultrasound)

Evaluation of Tumor

- When needed for clarification of vascular involvement from tumor (including suspected renal vein thrombosis) ^(17,23)
- Prior to Y90 treatment ⁽²⁴⁾
- For imaging of the deep inferior epigastric arteries prior to breast reconstructive surgery ⁽²⁵⁾

PREOPERATIVE OR POSTOPERATIVE ASSESSMENT

When not otherwise specified in the guideline:

Preoperative Evaluation:

- Prior to the following procedures:
 - Solid organ transplantation
 - UPJ (ureteropelvic junction) obstruction surgery
 - Imaging of the deep inferior epigastric arteries prior to breast reconstructive surgery ⁽²⁵⁾
 - Transcatheter Aortic Valve Replacement (TAVR) when CTA is **contraindicated or cannot be performed** ⁽²⁶⁾
 - Y90 treatment ⁽²⁴⁾
 - Endovascular aneurysm repair (EVAR) ⁽²⁷⁾
- Trans jugular intrahepatic portosystemic shunt (TIPS) ⁽²⁸⁾
- Imaging of the area requested is needed to develop a surgical plan

Postoperative Evaluation:

- Evaluation of post-operative complications, (e.g., pseudoaneurysms), following interventional vascular procedures (e.g., surgical bypass grafts, vascular stents, trans jugular intrahepatic portosystemic shunt (TIPS), and IVC filters)
- Known or suspected complications
- A clinical reason is provided how imaging may change management

NOTE: This section applies only within the first few months following surgery

FURTHER EVALUATION OF INDETERMINATE FINDINGS

Unless follow-up is otherwise specified within the guideline

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

IMAGING IN KNOWN GENETIC SYNDROMES

- Vascular Ehlers-Danlos syndrome (vEDS) ⁽²⁹⁾:
 - Every 18 months (including at diagnosis) **OR**
 - As clinically indicated to follow known vascular abnormalities
- Marfan syndrome ⁽³⁰⁾:
 - Every 3 years (including at diagnosis)
 - More frequently (annually) if **EITHER**: history of dissection, dilation of aorta beyond aortic root **OR** aortic root/ascending aorta are not adequately visualized on TTE (i.e. advanced imaging is needed to monitor the thoracic aorta)
- Loeys-Dietz ⁽³¹⁾:
 - Every two years (including at diagnosis)
 - More frequently if abnormalities are found
- Williams Syndrome ⁽⁷⁾:
 - Abnormal vascular exam or imaging findings (such as concern for renal artery stenosis, diminished pulses, bruits or signs of diffuse thoracic aortic stenosis)
- Neurofibromatosis Type 1 (NF-1) ⁽⁶⁾:
 - Development of hypertension (including concern for renal artery stenosis)
- For other syndromes and rare diseases not otherwise addressed in the guideline, coverage is based on a case-by-case basis using societal guidance

Combination Studies for Known Genetic Conditions

NOTE: When medical necessity is met for an individual study **AND** conscious sedation is required (such as for young pediatric patients or patients with significant developmental delay), the entire combination is indicated)

Brain/Neck/Chest/Abdomen/Pelvis MRA

- Vascular Ehlers-Danlos syndrome: At diagnosis and then every 18 months; more frequently if abnormalities are found ⁽²⁹⁾
- Loeys-Dietz: at diagnosis and then every two years, more frequently if abnormalities are found ⁽³¹⁾

Chest/Abdomen/Pelvis MRA

- Marfan syndrome ⁽³⁰⁾:
 - Every three years (including at diagnosis)
 - More frequently (annually) if **EITHER**: history of dissection, dilation of aorta beyond aortic root **OR** aortic root/ascending aorta are not adequately visualized on TTE (i.e. advanced imaging is needed to monitor the thoracic aorta)

- Williams Syndrome ⁽⁷⁾
 - Abnormal vascular exam or imaging findings (such as diminished pulses, bruits or signs of diffuse thoracic aortic stenosis)

OTHER COMBINATION STUDIES WITH ABDOMEN MRA

NOTE: When medical necessity is met for an individual study **AND** conscious sedation is required (such as for young pediatric patients or patients with significant developmental delay), the entire combination is indicated)

Abdomen MRA and Abdomen MRI or CT

- When needed for clarification of vascular involvement from tumor (including suspected renal vein thrombosis)

Chest/Abdomen/Pelvis /Lower Extremity MRA

- To evaluate for an embolic source of lower extremity thromboembolic vascular disease.

NOTE: Echocardiogram is also indicated as the heart is the most commonly reported source of lower extremity emboli

Abdomen MRI/Abdomen MRA and PET

- Prior to Y90 treatment ⁽²⁴⁾

Abdomen/Pelvis MRA

- As a dedicated CPT code does not exist for Abdomen and Pelvis MRA, when a disease process is reasonably expected to involve both the abdomen and pelvis **AND** the guideline criteria have been met, two separate authorizations are required: Abdomen MRA (CPT code 74185) and Pelvis MRA (CPT 72198)

Brain/Neck/Chest/Abdomen/Pelvis MRA

- For patients with fibromuscular dysplasia (FMD), a one-time vascular study from brain to pelvis ^(13,14)
- For assessment in patients with spontaneous coronary artery dissection (SCAD) ⁽¹¹⁾

NOTE: Body vascular imaging for SCAD can be performed at the time of coronary angiography

Chest/Abdomen/Pelvis MRA

- Evaluation prior to endovascular aneurysm repair (EVAR) when thoracic involvement is present when CTA is contraindicated and cannot be performed

- Evaluation prior to Transcatheter Aortic Valve Replacement (TAVR) when CTA is contraindicated or cannot be performed ⁽²⁶⁾
- Acute aortic dissection ⁽³²⁾
- Significant post-traumatic or post-procedural vascular complications reasonably expected to involve the chest, abdomen and pelvis

Brain/Neck/Chest/Abdomen/Pelvis MRA

- Takayasu's Arteritis: ⁽¹⁵⁾
 - At initial diagnosis
 - Every 6 months for the first 2 years while on therapy
 - Annually after the first 2 years

CODING AND STANDARDS

Codes

74185

Applicable Lines of Business

☒	CHIP (Children's Health Insurance Program)
☒	Commercial
☒	Exchange/Marketplace
☒	Medicaid
☒	Medicare Advantage

BACKGROUND

Contraindications and Preferred Studies

- Contraindications and reasons why a CT/CTA cannot be performed may include: impaired renal function, significant allergy to IV contrast, pregnancy (depending on trimester)
- Contraindications and reasons why an MRI/MRA cannot be performed may include: impaired renal function, claustrophobia, non-MRI compatible devices (such as non-compatible defibrillator or pacemaker), metallic fragments in a high-risk location, patient

exceeds weight limit/dimensions of MRI machine

SUMMARY OF EVIDENCE

2022 ACC/AHA Guideline for the Diagnosis and Management of Aortic Disease: A Report of the American Heart Association/American College of Cardiology Joint Committee on Clinical Practice Guidelines ⁽¹⁾

Study Design: This document is a clinical practice guideline developed by the American College of Cardiology (ACC) and the American Heart Association (AHA) for the diagnosis and management of aortic disease.

Target Population: Patients with aortic disease, including those with aortic aneurysms, aortic dissection, and other aortic pathologies.

Key Factors: The guideline provides recommendations for the diagnosis, genetic evaluation, medical therapy, endovascular and surgical treatment, and long-term surveillance of patients with aortic disease. It emphasizes the importance of shared decision-making, multidisciplinary aortic teams, and institutional expertise in the management of these patients.

ACR–SIR Practice Parameter for the Performance of Angiography, Angioplasty, and Stenting for the Diagnosis and Treatment of Renal Artery Stenosis in Adults ⁽⁴⁾

Study Design: This document is a practice parameter and technical standard developed collaboratively by the American College of Radiology (ACR) and the Society of Interventional Radiology (SIR). It reviews the literature and provides guidelines for the performance of angiography, angioplasty, and stenting for the diagnosis and treatment of renal artery stenosis (RAS) in adults.

Target Population: Adults with hypertension (HTN) and renal artery stenosis (RAS), including those with renovascular hypertension (RVH) and chronic renal insufficiency (CRI).

Key Factors: The document discusses the indications for renal vascular imaging or angiography, the clinical features suggestive of RVH, the role of laboratory tests and noninvasive imaging, and the criteria for determining the success of endovascular interventions. It also addresses the training and credentialing of practitioners performing these procedures.

Society for Vascular Surgery practice guidelines for atherosclerotic occlusive disease of the lower extremities: Management of asymptomatic disease and claudication ⁽²²⁾

Study Design: This document is a set of practice guidelines developed by the Society for Vascular Surgery (SVS) for the management of atherosclerotic occlusive disease of the lower extremities, focusing on asymptomatic disease and claudication.

Target Population: Patients with peripheral arterial disease (PAD), including those with asymptomatic disease and intermittent claudication (IC).

Key Factors: The guidelines emphasize risk factor modification, medical therapies, and the use of exercise programs to improve cardiovascular health and functional performance. They also

discuss the role of revascularization for IC, including endovascular and surgical interventions, and the importance of patient selection and individualized treatment plans.

ANALYSIS OF EVIDENCE

Analysis ^(1,4,22):

While all three articles recognize the value of MRA in diagnosing and managing vascular diseases, they differ in their specific applications and technical considerations. "ACR-SIR RAS 2021" focuses on renal artery stenosis, "Conte 2015" emphasizes peripheral arterial disease, and "Isselbacher et al 2022" provides comprehensive guidelines for aortic disease. Despite these differences, the shared findings underscore the importance of MRA as a non-invasive, effective imaging tool in clinical practice.

Shared Findings:

- All three articles emphasize the significance of imaging techniques in diagnosing and managing vascular diseases. They highlight the role of MRA (Magnetic Resonance Angiography) in providing detailed images of vascular structures, which is crucial for accurate diagnosis and treatment planning.
- The articles agree on the utility of MRA in evaluating aortic diseases, including aneurysms and dissections. MRA is considered a valuable tool for assessing the extent and severity of these conditions, aiding in the decision-making process for surgical or endovascular interventions.
- MRA is recognized for its non-invasive nature, making it a preferred choice for patients who cannot tolerate invasive procedures. This aspect is highlighted across all three articles, emphasizing its safety and effectiveness in clinical practice.

POLICY HISTORY

Date	Summary
July 2025	<ul style="list-style-type: none"> ● Guideline name adjusted to spell out MRA ● Added a Summary of Evidence and Analysis of Evidence ● Moved Further evaluation section to below Preoperative
June 2025	<ul style="list-style-type: none"> ● This guideline replaces Evolent Clinical Guideline 034-2 for Abdomen MRA/MRV (Angiography) ● Added in general information statement regarding guideline criteria development by reputable sources, standard of care, and best practices ● Moved AAA screening intervals from background to AAA indications section

Date	Summary
	<ul style="list-style-type: none"> ● Added FMD and Takayasu’s arteritis to Other Vascular Abnormalities section including surveillance ● Adjusted the language in the Venous Disease section for pelvic congestion syndrome to include nutcracker syndrome and no contraindications to CT ● Added language in the Venous Disease section for acute and chronic unilateral lower extremity edema ● Adjusted PVD section to include listing of non-invasive studies ● Updated language in the preoperative/postoperative section ● Genetics section surveillance language adjusted in vEDS, Marfan Syndrome, and Loey’s Dietz Syndrome sections ● Added Combinations Studies for Known Genetic Diseases section ● Segment added to both combinations’ sections about if the required use of conscious sedation is needed the entire combination is indicated ● Brain added to the Neck/Chest/Abdomen/Pelvis MRA combo with surveillance added to Takayasu’s arteritis within the section ● Applicable Line of Business adjusted – Medicare checked ● Background reduced
June 2024	<ul style="list-style-type: none"> ● Separated out aortic syndromes to be more clear ● EVAR studies clarified order of which studies would be ordered ● Renal artery stenosis: updated per new clinical guidance ● Added Genetic Syndromes and Tumors Section ● Added PVD section ● Statement put in all Guidelines for contraindications put in indications and background sections ● Combo section adjusted and made uniform ● Updated references and background sections

LEGAL AND COMPLIANCE

Guideline Approval



Committee

Reviewed / Approved by Evolent Specialty Services Clinical Guideline Review Committee

Disclaimer

Evolent Clinical Guidelines do not constitute medical advice. Treating health care professionals are solely responsible for diagnosis, treatment, and medical advice. Evolent uses Clinical Guidelines in accordance with its contractual obligations to provide utilization management. Coverage for services varies for individual members according to the terms of their health care coverage or government program. Individual members' health care coverage may not utilize some Evolent Clinical Guidelines. Evolent clinical guidelines contain guidance that requires prior authorization and service limitations. A list of procedure codes, services or drugs may not be all inclusive and does not imply that a service or drug is a covered or non-covered service or drug. Evolent reserves the right to review and update this Clinical Guideline in its sole discretion. Notice of any changes shall be provided as required by applicable provider agreements and laws or regulations. Members should contact their Plan customer service representative for specific coverage information.

Evolent Clinical Guidelines are comprehensive and inclusive of various procedural applications for each service type. Our guidelines may be used to supplement Medicare criteria when such criteria is not fully established. When Medicare criteria is determined to not be fully established, we only reference the relevant portion of the corresponding Evolent Clinical Guideline that is applicable to the specific service or item requested in order to determine medical necessity.

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