HEALTHHELP®
A WNS COMPANY

# 2026 Abdominal and Thoracic Aneurysm Repair Procedures (EVAR/TEVAR/Open repair)

## *Cardiology*

SURG-AAR-HH



**Last Review Date: 10/06/2025**
Previous Review Date: 01/13/2025
Guideline Initiated: 06/30/2019

HEALTHHELP®

A WNS COMPANY

# Table of Contents


Endovascular Abdominal Aortic Aneurysm Repair (EVAR) ..... 3
- Clinical Judgment ..... 3
- EVAR Contraindications ..... 3
- Preamble: Pediatric Cardiology Preamble ..... 3
- EVAR Guideline ..... 3

Open Abdominal Aortic Aneurysm Repair ..... 5
- Clinical Judgment ..... 5
- Open AAA Contraindications ..... 5
- Preamble: Pediatric Cardiology Preamble ..... 5
- Open Surgical Repair of Abdominal Aortic Pathology ..... 5

EVAR Procedure Codes ..... 7

Thoracic Endovascular Aortic Aneurysm Repair (TEVAR) ..... 9
- Clinical Judgment ..... 9
- TEVAR Contraindications ..... 9
- Preamble: Pediatric Cardiology Preamble ..... 9
- TEVAR Repair Guideline ..... 9

Open Thoracic Aortic Aneurysm Repair guideline ..... 10
- Clinical Judgment ..... 10
- Thoracic Aortic Aneurysm Repair (Open) Contraindications ..... 10
- Preamble: Pediatric Cardiology Preamble ..... 11
- Open Thoracic Aortic Aneurysm Repair Guideline ..... 11

TEVAR Procedure Codes ..... 12

Abdominal and Thoracic Aneurysm Repair Summary of Changes ..... 13

Abdominal and Thoracic Aneurysm Repair Definitions ..... 14

Abdominal and Thoracic Aneurysm Repair References ..... 18

Disclaimer section ..... 19
- Purpose ..... 19
- Clinician Review ..... 20
- Payment ..... 20
- Registered Trademarks (®/™) and Copyright (©) ..... 20
- National and Local Coverage Determination (NCD and LCD) ..... 20
  - Background ..... 21
  - Medical Necessity Codes ..... 21

# Endovascular Abdominal Aortic Aneurysm Repair (EVAR)

## 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.

## EVAR Contraindications

Contraindications for an endovascular repair of an abdominal aortic aneurysm (AAA) includes **ANY** of the following:

1. Complex aortic anatomy (eg, those with aneurysms in close proximity to or involving the renal arteries)
   **Reference:** [3]
2. Connective tissue disorder (eg, Ehler-Danlos syndrome, Loeys-Dietz syndrome, Marfan syndrome)
   **Reference:** [6]

## Preamble: Pediatric Cardiology Preamble

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

## EVAR Guideline

An endovascular repair of an abdominal aortic aneurysm (AAA) is considered medically appropriate when the documentation demonstrates **ALL** of the following:

1. Clinical situation includes **ANY** of the following:
   a. Abdominal aortic aneurysm (AAA) and **ANY** of the following:
      i. AAA is asymptomatic and **ANY** of the following:
         A. AAA is small (less than 5.0 cm in a female and less than 5.5 cm in a male) with concomitant common iliac artery that is 3.5 cm or more, it is reasonable to repair both aneurysms.

B. Unruptured and diameter is 5.0 cm or larger in a female **OR** 5.5 cm or larger in a male.

ii. AAA growth rate is 0.5 cm or more per year.

iii. AAA is ruptured.

b. AAA is unruptured and symptomatic (eg, abdominal or back pain or acute, deep, aching or throbbing chest or abdominal pain radiating to back, buttocks, flank, groin or legs).

c. Blunt, traumatic abdominal aortic injury is known and **ANY** of the following:

i. Grade 2, with malperfusion

ii. Grade 4

d. Endoleak and **ANY** of the following:

i. Endoleak type I or endoleak type III

ii. Endoleak type II, with significant aneurysm expansion

iii. Endoleak is suspected, but **NOT** visible **AND** aneurysm expansion is ongoing.

e. Intramural hematoma (IMH) and **EITHER** of the following:

i. Type A or type B is acute and complicated (malperfusion, periaortic hematoma, pericardial effusion with cardiac tamponade, persistent, refractory or recurrent pain, rupture)

ii. Type B, anatomy is favorable for EVAR **AND** distal aortic arch requires repair.

f. Penetrating atherosclerotic ulcer (PAU) is known and **ANY** of the following:

i. PAU is isolated and symptomatic with persistent pain.

ii. PAU of the aorta with rupture

iii. PAU of the distal aortic arch or abdominal aorta

**References:** [6] [10] [11] [12] [1] [4]

2. Peri-operative risk is moderate or high and anatomy is appropriate for FDA-approved fenestrated endovascular device.
**References:** [6] [10] [11] [12]

3. Type B aortic dissection
**References:** [6] [10] [11] [12] [7]

# Open Abdominal Aortic Aneurysm Repair

## 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.

## Open AAA Contraindications

Contraindications for an open repair of an abdominal aortic aneurysm (AAA) includes **ANY** of the following:

1. Coagulopathy is uncorrected.
2. Complex aortic anatomy (eg, those with aneurysms in close proximity to or involving the renal arteries)
   **Reference:** [3]

## Preamble: Pediatric Cardiology Preamble

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

## Open Surgical Repair of Abdominal Aortic Pathology

Open surgical repair of abdominal aortic pathology is considered medically appropriate when the documentation demonstrates **ANY** of the following:

1. Abdominal aortic aneurysm (AAA) and **ANY** of the following:
   a. AAA is asymptomatic and **ANY** of the following:
      i. AAA is small (less than 5.0 cm in a female and less than 5.5 cm in a male) with concomitant common iliac artery that is 3.5 cm or more, it is reasonable to repair both aneurysms.
      ii. Unruptured and diameter is 5.0 cm or larger in a female **OR** 5.5 cm or larger in a male.
   b. AAA growth rate is 0.5 cm or larger per year **OR** 0.3 cm or more for 2 consecutive years.

c. AAA is ruptured. (*__NOTE__:*Use Endovascular aneurysm repair [EVAR].*)

d. AAA is symptomatic (eg, abdominal or back pain or acute, deep, aching or throbbing chest or abdominal pain radiating to back, buttocks, flank, groin or legs).

**References:** [12] [6] [1]

2. Infectious aortitis is associated with abdominal aneurysm or dissection **OR** is complicated by rupture.
**References**: [12] [6]

3. Intramural hematoma (IMH) and **EITHER** of the following:

a. Type A or type B is acute and complicated (malperfusion, periaortic hematoma, pericardial effusion with cardiac tamponade, persistent, refractory or recurrent pain, rupture)

b. Type A is acute and uncomplicated.

c. Type B, anatomy is unfavorable (eg, abnormal aortic wall) for EVAR **AND** distal aortic arch or descending thoracic aorta requires repair.

**References:** [12] [6]

4. Penetrating atherosclerotic ulcer (PAU) is known and **ANY** of the following:

a. PAU of the aorta with rupture

b. PAU of the ascending aorta or proximal aortic arch

c. PAU of the distal aortic arch or abdominal aorta

d. PAU is isolated and symptomatic with persistent pain.

**References:** [12] [6]

5. Type A aortic dissection is acute **AND** lower extremity, renal or mesenteric malperfusion is known.
**References:** [12] [6]

# EVAR Procedure Codes

**Table 1. Endovascular Abdominal Aortic Aneurysm Repair (EVAR) Associated Procedure Codes**

| CODE | DESCRIPTION |
|---|---|
| 34701 | Endovascular repair of infrarenal aorta by deployment of an aorto-aortic tube endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, all endograft extension(s) placed in the aorta from the level of the renal arteries to the aortic bifurcation, and all angioplasty/stenting performed from the level of the renal arteries to the aortic bifurcation; for other than rupture (eg, for aneurysm, pseudoaneurysm, dissection, penetrating ulcer) |
| 34702 | Endovascular repair of infrarenal aorta by deployment of an aorto-aortic tube endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, all endograft extension(s) placed in the aorta from the level of the renal arteries to the aortic bifurcation, and all angioplasty/stenting performed from the level of the renal arteries to the aortic bifurcation; for rupture including temporary aortic and/or iliac balloon occlusion, when performed (eg, for aneurysm, pseudoaneurysm, dissection, penetrating ulcer, traumatic disruption) |
| 34703 | Endovascular repair of infrarenal aorta and/or iliac artery(ies) by deployment of an aorto-uni-iliac endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, all endograft extension(s) placed in the aorta from the level of the renal arteries to the iliac bifurcation, and all angioplasty/stenting performed from the level of the renal arteries to the iliac bifurcation; for other than rupture (eg, for aneurysm, pseudoaneurysm, dissection, penetrating ulcer) |
| 34704 | Endovascular repair of infrarenal aorta and/or iliac artery(ies) by deployment of an aorto-uni-iliac endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, all endograft extension(s) placed in the aorta from the level of the renal arteries to the iliac bifurcation, and all angioplasty/stenting performed from the level of the renal arteries to the iliac bifurcation; for rupture including temporary aortic and/or iliac balloon occlusion, when performed (eg, for aneurysm, pseudoaneurysm, dissection, penetrating ulcer, traumatic disruption) |
| 34705 | Endovascular repair of infrarenal aorta and/or iliac artery(ies) by deployment of an aorto-bi-iliac endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, all endograft extension(s) placed in the aorta from the level of the renal arteries to the iliac bifurcation, and all angioplasty/stenting performed from the level of the renal arteries to the iliac bifurcation; for other than rupture (eg, for aneurysm, pseudoaneurysm, dissection, penetrating ulcer) |
| 34706 | Endovascular repair of infrarenal aorta and/or iliac artery(ies) by deployment of an aorto-bi-iliac endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, all endograft extension(s) placed in the aorta from the level of the renal arteries to the iliac bifurcation, and all angioplasty/stenting performed from the level of the renal arteries to the iliac bifurcation; for rupture including temporary aortic and/or iliac balloon occlusion, when performed (eg, for aneurysm, pseudoaneurysm, dissection, penetrating ulcer, traumatic disruption) |
| 34830 | Open repair of infrarenal aortic aneurysm or dissection, plus repair of associated arterial trauma, following unsuccessful endovascular repair; tube prosthesis |
| 34831 | Open repair of infrarenal aortic aneurysm or dissection, plus repair of associated arterial trauma, following unsuccessful endovascular repair; aorto-bi-iliac prosthesis |
| 34832 | Open repair of infrarenal aortic aneurysm or dissection, plus repair of associated arterial trauma, following unsuccessful endovascular repair; aorto-bifemoral prosthesis |
| 34841 | Endovascular repair of visceral aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) by deployment of a fenestrated visceral aortic endograft and all associated |

| CODE | DESCRIPTION |
|---|---|
| | radiological supervision and interpretation, including target zone angioplasty, when performed; including one visceral artery endoprosthesis (superior mesenteric, celiac or renal artery) |
| 34842 | Endovascular repair of visceral aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) by deployment of a fenestrated visceral aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including two visceral artery endoprostheses (superior mesenteric, celiac and/or renal artery[s]) |
| 34843 | Endovascular repair of visceral aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) by deployment of a fenestrated visceral aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including three visceral artery endoprostheses (superior mesenteric, celiac and/or renal artery[s]) |
| 34844 | Endovascular repair of visceral aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) by deployment of a fenestrated visceral aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including four or more visceral artery endoprostheses (superior mesenteric, celiac and/or renal artery[s]) |
| 34845 | Endovascular repair of visceral aorta and infrarenal abdominal aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) with a fenestrated visceral aortic endograft and concomitant unibody or modular infrarenal aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including one visceral artery endoprosthesis (superior mesenteric, celiac or renal artery) |
| 34846 | Endovascular repair of visceral aorta and infrarenal abdominal aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) with a fenestrated visceral aortic endograft and concomitant unibody or modular infrarenal aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including two visceral artery endoprostheses (superior mesenteric, celiac and/or renal artery[s]) |
| 34847 | Endovascular repair of visceral aorta and infrarenal abdominal aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) with a fenestrated visceral aortic endograft and concomitant unibody or modular infrarenal aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including three visceral artery endoprostheses (superior mesenteric, celiac and/or renal artery[s]) |
| 34848 | Endovascular repair of visceral aorta and infrarenal abdominal aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) with a fenestrated visceral aortic endograft and concomitant unibody or modular infrarenal aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including four or more visceral artery endoprostheses (superior mesenteric, celiac and/or renal artery[s]) |

## Medicare Inpatient Only Codes

34701, 34702, 34703, 34704, 34705, 34706, 34830, 34831, 34832, 34841, 34842, 34843, 34844, 34845, 34846, 34847, 34848

# Thoracic Endovascular Aortic Aneurysm Repair (TEVAR)

## 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.

## TEVAR Contraindications

Contraindications or exclusions for thoracic endovascular aneurysm repair (TEVAR) includes **ANY** of the following:

1. Anatomy is unfavorable (eg, abnormal aortic wall).
   **References:** [6] [2]
2. Connective tissue disorder (eg, Marfan syndrome, Loeys-Dietz syndrome or vascular Ehlers-Danlos syndrome) present
   **Reference:** [6]

## Preamble: Pediatric Cardiology Preamble

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

## TEVAR Repair Guideline

Thoracic endovascular aortic aneurysm repair (TEVAR) is considered medically appropriate when the documentation demonstrates **ANY** of the following:

1. Descending aortic aneurysm and **ANY** of the following:
   a. Diameter is 5.5 com or more.
   b. Ruptured (*__NOTE__: *Use TEVAR*.)

   **References:** [6] [9] [10]
2. Endoleak and **ANY** of the following:
   a. Endoleak type I or endoleak type III

b. Endoleak type II, with significant aneurysm expansion

c. Endoleak is suspected, but **NOT** visible **AND** aneurysm expansion is ongoing.

**References**: [6] [9] [10] [4]

3. Infectious aortitis is associated with thoracic aneurysm or dissection or is complicated by rupture.
   **References:** [6] [9] [10]
4. Intramural hematoma (IMH) and **EITHER** of the following:
   a. Type A or type B is acute and complicated (malperfusion, periaortic hematoma, pericardial effusion with cardiac tamponade, persistent, refractory or recurrent pain, rupture)
   b. Type B, anatomy is favorable for TEVAR **AND** descending thoracic aorta requires repair.

   **References:** [6] [9] [10]
5. Penetrating atherosclerotic ulcer (PAU) is known and **ANY** of the following:
   a. PAU is isolated and symptomatic with persistent pain.
   b. PAU of the aorta with rupture
   c. PAU of the descending thoracic aorta

   **References:** [6] [9] [10]

# Open Thoracic Aortic Aneurysm Repair guideline

## 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.

## Thoracic Aortic Aneurysm Repair (Open) Contraindications

Contraindications for an open repair of an thoracic aortic aneurysm (AAA) includes **ANY** of the following:

1. Chronic obstructive pulmonary disease (COPD) is severe (forced expiratory volume in 1 second [FEV1] is 50% or less).

**Reference:** [6]

2. Renal insufficiency is stage 3 or more **OR** requires hemodialysis.
   **Reference:** [6]
3. Stroke is recent (within last 90 days).
   **Reference**: [6]

## Preamble: Pediatric Cardiology Preamble

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

## Open Thoracic Aortic Aneurysm Repair Guideline

**Open** surgical repair of a thoracic aortic aneurysm (TAA) is considered medically appropriate when the documentation demonstrates **ALL** of the following:

1. Descending thoracic aortic aneurysm is known and **ANY** of the following:
   a. Anatomy is unfavorable (eg, abnormal aortic wall) for TEVAR.
   b. Meets criteria for TEVAR
   c. **NO** significant comorbidities (diabetes, chronic obstructive pulmonary disease [COPD])

   **Reference:** [6]
2. Infectious aortitis is associated with thoracic aneurysm or dissection **OR** is complicated by rupture.
   **Reference:** [6]
3. Intramural hematoma (IMH) and **EITHER** of the following: []
   a. Type A is acute and uncomplicated.
   b. Type A or type B is acute and complicated (malperfusion, periaortic hematoma, pericardial effusion with cardiac tamponade, persistent, refractory or recurrent pain, rupture)
   c. Type B, anatomy is unfavorable (eg, abnormal aortic wall) for EVAR **AND** distal aortic arch or descending thoracic aorta requires repair.

   **Reference**: [6]
4. Penetrating atherosclerotic ulcer (PAU) is known and **ANY** of the following:
   a. PAU is isolated and symptomatic with persistent pain.

b. PAU of the aorta with rupture

c. PAU of the descending thoracic aorta

**Reference:** [6]

5. Thoracoabdominal aortic aneurysm (TAAA) and **ANY** of the following: (*__NOTE__: *Open repair is used in individuals with Loeys-Dietz syndrome, Marfan syndrome and vascular Ehlers-Danlos*.)

   a. Diameter is 6.0 cm or more. (*__NOTE__: *repair is reasonable when the diameter is 5.5 cm or more and the repair is performed by experienced surgeons in a Multidisciplinary Aortic Team*)

   b. Diameter is less than 5.5 cm and increased risk of rupture (eg, 0.5 cm or more growth in diameter per year, change in appearance, penetrating atherosclerotic ulcers, saccular aneurysm, symptomatic)

   c. Rupture requiring intervention

   **Reference:** [6]

# TEVAR Procedure Codes

**Table 1. Thoracic Endovascular Aortic Aneurysm Repair (TEVAR) Associated Procedure Codes**

| CODE | DESCRIPTION |
|---|---|
| 33875 | Descending thoracic aorta graft, with or without bypass |
| 33877 | Repair of thoracoabdominal aortic aneurysm with graft, with or without cardiopulmonary bypass |
| 33880 | Endovascular repair of descending thoracic aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption); involving coverage of left subclavian artery origin, initial endo-prosthesis plus descending thoracic aortic extension(s), if required, to level of celiac artery origin |
| 33881 | Endovascular repair of descending thoracic aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption); not involving coverage of left subclavian artery origin, initial endoprosthesis plus descending thoracic aortic extension(s), if required, to level of celiac artery origin |
| 33882 | Endovascular repair of the thoracic aorta by deployment of a branched endograft multipiece system involving an aorto-aortic tube device with a fenestration for the left subclavian artery stent graft(s) and all aortic tube endograft extension(s) placed from the level of the left common carotid artery to the celiac artery, including pre-procedure sizing and device selection, all target zone angioplasty, all nonselective catheterization(s) and left subclavian artery selective catheterization(s), and all associated radiological supervision and interpretation |
| 33883 | Placement of proximal extension prosthesis for endovascular repair of descending thoracic aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption); initial extension |
| 33886 | Placement of distal extension prosthesis(s) delayed after endovascular repair of descending thoracic aorta |

## Medicare Inpatient Only Codes

33875, 33877, 33880, 33881, 33883, 33886

# Abdominal and Thoracic Aneurysm Repair Summary of Changes

Endovascular Abdominal Aortic Aneurysm Repair (EVAR)/Thoracic Endovascular Aortic Aneurysm Repair (TEVAR) guideline from 2025 to 2026 had the following changes:

**Table 1. 2025-2026 Endovascular Abdominal Aortic Aneurysm Repair (EVAR)/Thoracic Endovascular Aortic Aneurysm Repair (TEVAR) guideline Summary of Changes**

| Date | Type of Change | Summary |
|---|---|---|
| 10/06/2025 | Annual Review | • EVAR guideline<br>▪ Removed criteria under the indication, "AAA is asymptomatic and ANY of the following":<br>◦ "AAA is unruptured and symptomatic (eg, abdominal or back pain; acute, deep, aching or throbbing chest or abdominal pain radiating to back, buttocks, flank, groin or legs)." Removed for clarity since the parent indication states "asymptomatic".<br>▪ Added example to "anatomy is unfavorable (abnormal aortic wall)" for clarity.<br>• TEVAR Contraindications<br>▪ Added example to "anatomy is unfavorable (abnormal aortic wall)" for clarity.<br>▪ Added examples to connective tissue disorder for clarity.<br>• TEVAR guideline<br>▪ Removed indication, "Anatomy is suitable for TEVAR" as this is redundant with the contraindication stating, "Anatomy is unfavorable".<br>▪ Removed the *NOTE: TEVAR is preferred in individuals with Loeys-Dietz syndrome, Marfan syndrome and vascular Ehlers-Danlos. This contradicts the contraindication of connective tissue and per the 2022 ACC/AHA Guideline for the Diagnosis and Management of Aortic Disease the above mentioned condition is recommended for Open Repair and not the Endovascular Repair.<br>• Thoracic Aortic Aneurysm Repair (Open) Contraindications<br>▪ Removed "Life expectancy is less than 10 years." because it is an assumed parameter if the test is ordered.<br>• Open Thoracic Aortic Aneurysm Repair Guideline<br>▪ Removed "Life expectancy is less than 10 years." because it is an assumed parameter if the test is ordered.<br>▪ Changed "unsuitable" to "unfavorable" for standard language.<br>▪ Added example to "anatomy is unfavorable (abnormal aortic wall)" for clarity<br>• Corrected ambiguous language |

# Abdominal and Thoracic Aneurysm Repair Definitions

**Abdominal aortic aneurysm (AAA)** is a 50 percent or greater increased diameter in the descending segment of the main artery (aorta) that supplies blood to the body accompanied with distention and weakened arterial wall.

**Aneurysm** occurs when part of an artery wall weakens, allowing it to abnormally balloon out or widen.

**Aneurysm shape** is described as being saccular or fusiform. The more common fusiform-shaped aneurysm bulges or balloons out on all sides of the blood vessel. A saccular-shaped aneurysm bulges or balloons out only on one side.

**Aorta** is the artery that makes up the main trunk of the arterial system which runs from the heart through the center of the chest and abdomen, and carries blood away from the heart to the rest of the body.

**Aortic Aneurysm** is a focal or diffuse dilatation of the aorta (the large artery that carries blood from the heart to the rest of the body) involving all three layers of the aortic wall. Aortic aneurysms can occur in the chest (thoracic aortic aneurysm) or in the abdomen (abdominal aortic aneurysm).

**Aortic aneurysm rupture** is a sudden break or burst of an aortic aneurysm, usually causing life-threatening internal bleeding.

**Aortic dissection** is a serious condition in which the integrity of the body's main artery (aorta) is compromised and blood passes through the inner lining and between the layers of the arterial wall.

Aortic dissection types:

- **Type A** is the most common and dangerous type involves a tear in the part of the aorta where it exits the heart. The tear may also occur in the upper aorta (ascending aorta), which may extend into the abdomen.
- **Type B** involves a tear in the lower aorta only (descending aorta), which may also extend into the abdomen

**Cardiac tamponade** is a medical emergency characterized by the accumulation of fluid, blood, pus, or gas in the pericardial space, which compresses the heart, impairs its filling, and reduces cardiac output. The condition can result from pericardial disease, trauma, or complications of medical procedures.

**Coagulopathy** is a condition in which the blood's ability to coagulate (form clots) is impaired.

**Connective tissue disorder** is a disease that occurs when the body's connective tissues become inflamed, which can damage the proteins and surrounding areas. Connective tissues are made up of collagen and elastin, and they support and connect the body's organs and structure.

**Common iliac artery** is a large blood vessel that carries blood to the lower body, including the legs, pelvis, and reproductive organs. The common iliac artery branches off from the bottom of the abdominal aorta, the largest blood vessel in the abdomen.

**Descending aortic aneurysm** is a localized weakness and bulging in the wall of the descending part of the aorta, the main artery carrying blood from the heart through the chest. This enlargement, which can also be termed a descending thoracic aortic aneurysm, is a serious condition that often develops without symptoms until it grows large or begins to tear and

leak. The primary risks associated with untreated descending aortic aneurysms are rupture, which can lead to severe internal bleeding, and dissection, a tear in the aortic wall.

**Dissection** is the abnormal and usually abrupt formation of a tear or separation of the layers inside the wall of an artery.

**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 tissues.

**Endoleak** is the complication of persistent blood flow in the aneurysm sac after endovascular aneurysm repair (EVAR).

- Type I is an absence or loss of complete sealing at the proximal (type 1a) or distal (type 1b) seal zone.
- Type II is when there is retrograde flow from the lumbar and/or inferior mesenteric arteries.
- Type III is component separation or fabric disruption.
- Type IV is related to the porosity of the graft fabric.
- Type V is endotension, expanding aneurysm without demonstrable blood flow.

**Endovascular aneurysm repair (EVAR)** is a minimally invasive surgery used to treat an aneurysm of the abdominal aorta by placing a device called a stent graft in the artery to reinforce the aneurysm.

**Endovascular device** is a medical tool used in minimally invasive procedures to diagnose and treat vascular conditions. The term "endovascular" means inside a blood vessel. Endovascular devices include: Stent grafts, coils, catheters.

**Hemodialysis** is a medical procedure that removes waste products and fluid from the blood. It also corrects electrolyte imbalances. Hemodialysis is used to treat both acute and chronic kidney failure.

**Horseshoe kidney** is a condition in which the kidneys are fused together at the lower end or base, resulting in a "U" shape.

**Infectious aortitis** is a severe and potentially life-threatening condition characterized by the inflammation and infection of the aorta, the body's largest artery, caused by a bacterial or fungal pathogen. The infection, often seeded from the bloodstream, damages the aortic wall, leading to complications like aneurysm formation, rupture, or sepsis, and requires prompt treatment with antibiotics, antifungals, and surgery.

**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

**Loeys-Dietz Syndrome (LDS)** is a genetic disorder that affects the connective tissue in the body.

**Malperfusion** is a medical condition that occurs when blood flow to vital organs is inadequate due to an obstruction in the aorta or its branches. Malperfusion is a physiological condition that occurs when blood flow to vital organs is inadequate due to an obstruction in the aorta or its branches.

**Marfan syndrome** is a congenital connective tissue disorder that is primarily associated with cardiac pathology (eg, mitral valve prolapse, aortic root dilation), skeletal pathology (eg, lengthening of long bones, joint laxity) and ocular pathology (eg, ectopia lentis).

**Mycotic Aneurysm** the dilation of an arterial wall due to infection.

**Penetrating Atherosclerotic Ulcer (PAU)** an atherosclerotic lesion frequently observed in the descending thoracic aorta (DTA) and abdominal aorta (AA) in severe atherosclerotic individuals.

**Periaortic hematoma** is a collection of fluid around the aorta, usually located behind the aorta or between the aorta and esophagus. It can be caused by a rupture or oozing of blood in the mediastinum or pericardial sac.

**Pericardial Effusion** is a condition in which extra fluid collects between the heart and the pericardium (the sac around the heart) causing pressure on the heart and preventing blood from pumping normally. The lymph vessels may also be blocked, which can cause infection. Pericardial effusions may be caused by cancer or cancer treatment, infection, injury, autoimmune disorders, thyroid or kidney problems or other conditions.

**Pseudoaneurysm** (false aneurysm) is a communication between the arterial lumen and overlying connective tissue resulting from arterial rupture; a blood-filled cavity forms outside the vessel wall and seals the leak as it thromboses. [1]

**Renal insufficiency** is poor function of the kidneys that may be due to a reduction in blood-flow to the kidneys caused by renal artery disease.

**Renal insufficiency**, also known as chronic kidney disease (CKD), is classified into **FIVE STAGES** based on the severity of kidney function decline.

**Stage 1 (Mild)**: Estimated glomerular filtration rate (eGFR) of 90 or higher and No significant symptoms.

**Stage 2 (Mildly Moderate):**

- eGFR between 60 and 89
- May experience fatigue, swelling, or high blood pressure

**Stage 3 (Moderately Severe):**

- eGFR between 30 and 59
- More pronounced symptoms, such as anemia, nausea, and increased risk of infection

**Stage 4 (Severely):**

- eGFR between 15 and 29
- Significant decline in kidney function, requiring dialysis or a kidney transplant

**Stage 5 (End-Stage Renal Disease):**

[1]Merck & Co., Inc., "Overview of Aortic Aneurysms.". [Online]. Available: www.merckmanuals.com

- eGFR below 15
- Complete kidney failure, requiring dialysis or a kidney transplant for survival

**Saccular aneurysm** is defined as a pouch-like form of aneurysm with a distinct neck, typically bulging only to one side of the vessel wall.

**Stent graft** is a tube made of thin metal mesh (the stent) covered with a thin polyester fabric (the graft) that helps prevent an aneurysm from bursting.

**Thoracic endovascular aortic repair (TEVAR)** is a minimally invasive surgery to treat an aneurysm in the upper part of the aorta by placing a device called a stent graft in the artery to reinforce the aneurysm.

**Thoracic aortic aneurysm** is an abnormal widening of the aorta between the aortic valve and the diaphragm. An aneurysm is defined as dilatation of the artery that is more than 50% of normal diameter for a given segment. Aneurysm formation is caused by a weakening of the medial layer of the aorta, which stretches outward, causing an out-pouching of the vessel wall. Thoracic aneurysms take four forms: fusiform, saccular, dissecting and false aneurysms. Normal diameter is less than 40 mm.

Traumatic abdominal aortic grading system is as follows:

- Grade 1: Minor intimal tear, intimal defect, or thrombus (≤10 mm)
- Grade 2: Large intimal flap, intimal defect, or thrombus (≥10 mm in length or width)
- Grade 3: Pseudoaneurysm
- Grade 4: Aortic rupture

**Type B aortic dissection** is a tear in the descending aorta, or lower aorta, that occurs when the inner and middle layers of the aorta separate and fill with blood. It's a serious condition that requires immediate treatment.

# Abdominal and Thoracic Aneurysm Repair References

[1] (2020). Abdominal aortic aneurysm: diagnosis and management. *NICE (National Institute for Health and Care Excellence)*. Retrieved: September 2025. https://www.clinicalkey.com/#!/content/nice_guidelines/65-s2.0-NG156.

[2] Bonci, G., Steigner, M.L., . . . Dill, K.E. (2017). ACR Appropriateness Criteria Thoracic Aorta Interventional Planning and Follow-Up. *Journal of the American College of Radiology, 14*(11S), S570-S583.

[3] Braverman, A.C. & Schermerhorn, M. (2022). Diseases of the Aorta. P. Libby & R.O. Bonow (Eds.). *Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine* (12), (pp. 806-836). Philadelphia, PA: Elsevier

[4] Chaikof, E.L., Dalman, R.L., . . . Starnes, B.W. (2018). The Society for Vascular Surgery practice guidelines on the care of patients with an abdominal aortic aneurysm. *Journal of Vascular Surgery, 67*(1), 2-77.

[5] Gulati, M., Levy, P.D., . . . Shaw, L.J. (2021). 2021 AHA/ACC/ASE/CHEST/SAEM/SCCT/SCMR Guideline for the Evaluation and Diagnosis of Chest Pain: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *Circulation, 144*(22), 368-454.

[6] Isselbacher, E.M., Preventza, O., . . . Woo, Y.J. (2022). 2022 ACC/AHA Guideline for the Diagnosis and Management of Aortic Disease. *JACC (Journal of the American College of Cardiology), 80*(24), e223–e393.

[7] MacGillivray, T. E., Gleason, T. G., . . . Stulak, J. (2022). The Society of Thoracic Surgeons/ American Association for Thoracic Surgery Clinical Practice Guidelines on the Management of Type B Aortic Dissection. *Annals of Thoracic Surgery, 113*(4), 1073-1092.

[8] (2020). Abdominal aortic aneurysm: diagnosis and management. *National Institute for Health and Care Excellence (NICE)*. Retrieved: September 2025. https://www.nice.org.uk/guidance/ng156/resources/abdominal-aortic-aneurysm-diagnosis-and-management-pdf-66141843642565

[9] (2023). Endovascular stent–graft placement in thoracic aortic aneurysms and dissections. *NICE (National Institute for Health and Care Excellence)*. Retrieved: September 2025. https://www.nice.org.uk/guidance/ipg127

[10] Neschis, D.G. (2024). Aortic Disease: Aneurysm and Dissection. R.D. Kellerman & D.P. Rakel (Eds.). *Conn's Current Therapy 2024*, (pp. 105-109). Philadelphia, PA: Elsevier

[11] Upchurch, G.R., Escobar, G.A., . . . Wang, G.J. (2021). Society for Vascular Surgery clinical practice guidelines of thoracic endovascular aortic repair for descending thoracic aortic aneurysms. *Journal of Vascular Surgery, 73*(1), 55S-83S.

[12] Wanhainen, A., Van Herzeele, I., . . . Tsilimparis N. (2024) . European Society for Vascular Surgery (ESVS) 2024 Clinical Practice Guidelines on the Management of Abdominal Aorto-iliac Artery Aneurysms. *European Journal of Vascular and Endovascular Surgery, 67*(1), 192-331

# 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.

## Registered Trademarks (®/™) and Copyright (©)



## 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.

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