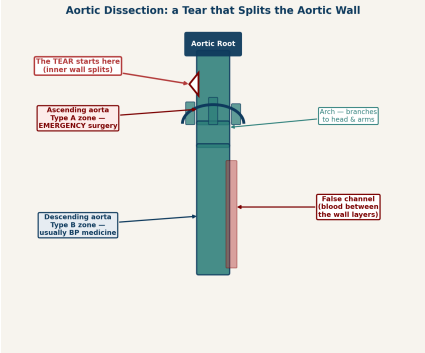
Aortic Dissection

A Tear in the Body's Main Artery — A True Emergency

An aortic dissection is a tear in the inner wall of the aorta — the large artery that carries blood from the heart to the body. Blood pushes between the wall layers and splits them apart. It strikes without warning and minutes matter. Sudden, severe, tearing chest or back pain is a 911 emergency.



Online: https://go.riasalimd.com/dissection-guide

Rias KS Ali, MD FACC

Board Certified in Interventional Cardiology & Cardiovascular Disease

4740 Mile Stretch Drive, Holiday FL 34690 | Office: (727) 943-5200 | Fax: (727) 943-5201 | RiasAliMD.com

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Names & Terms You Will Hear

Term	Meaning
Aortic dissection	A tear in the inner wall of the aorta. Blood pushes between the wall layers and splits them. A true emergency.
Acute aortic dissection	A dissection in the first 2 weeks after it starts. This is when the danger is highest. Call 911 at the first sign.
Type A dissection (Stanford)	A tear that involves the ascending aorta — the part just above the heart. It needs emergency surgery.
Type B dissection (Stanford)	A tear in the descending aorta only — past the arch. It is most often treated with blood-pressure medicine. Sometimes a stent is needed.
DeBakey types	Another naming system. Type I and II involve the ascending aorta (like Stanford A). Type III involves the descending aorta only (like Stanford B).
False channel (false lumen)	The new, wrong path that opens between the wall layers. Blood flows where it should not. It can cut off blood to organs.
Intimal tear	The starting rip in the inner lining of the aorta. It is where blood first enters the wall.
Acute aortic syndrome	A group of sudden, life-threatening aortic events — dissection, wall bleeding, and a deep ulcer. All cause sudden, severe, tearing pain. Call 911.
Aortic rupture	The wall bursts all the way through. Blood pours out. This is often fatal. A dissection can lead to rupture.
CT angiogram (CTA)	The fast scan that finds a dissection. It uses dye and X-rays to map the aorta in minutes. The main test in the emergency room.

CALL 911 NOW — this is a true emergency.

Call 911 right away if you have:

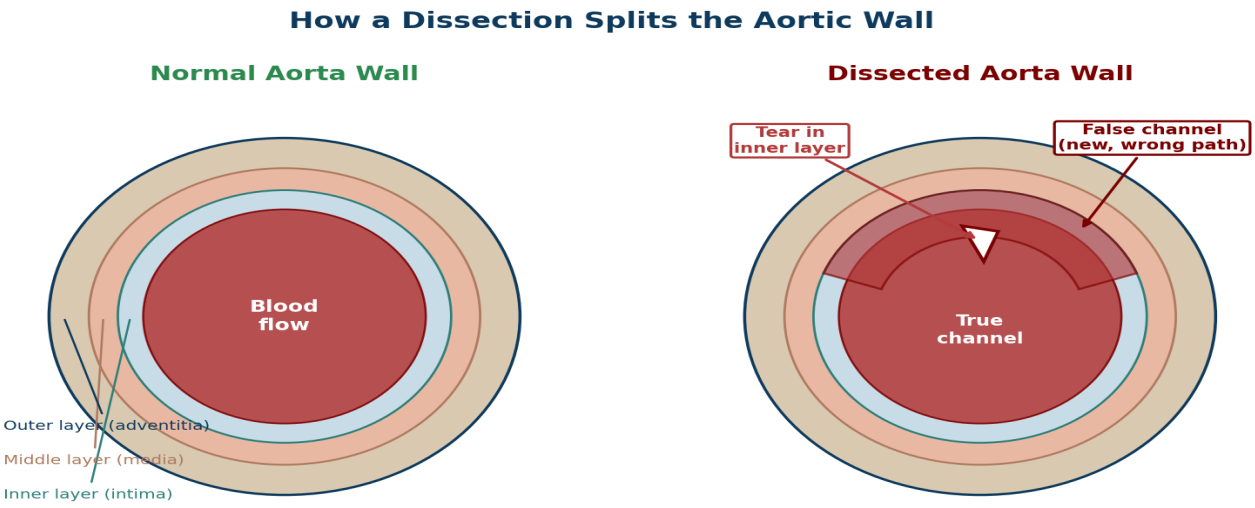
- **Sudden, severe, tearing or ripping pain** in the chest, back, or belly
- Chest or back pain with **fainting or collapse**
- Chest pain with **sudden weakness, numbness, face droop, or a cold, painful leg**

Do not drive yourself. A dissection can worsen in minutes. An ambulance can start treatment on the way and take you to a hospital that does aortic surgery.

If someone near you collapses: call 911, then push hard and fast in the center of the chest (about 100-120 pushes a minute, the beat of 'Stayin' Alive'). Send someone for an AED. An AED will not shock a normal heart — it only helps if the heart needs it.

Aortic Dissection?

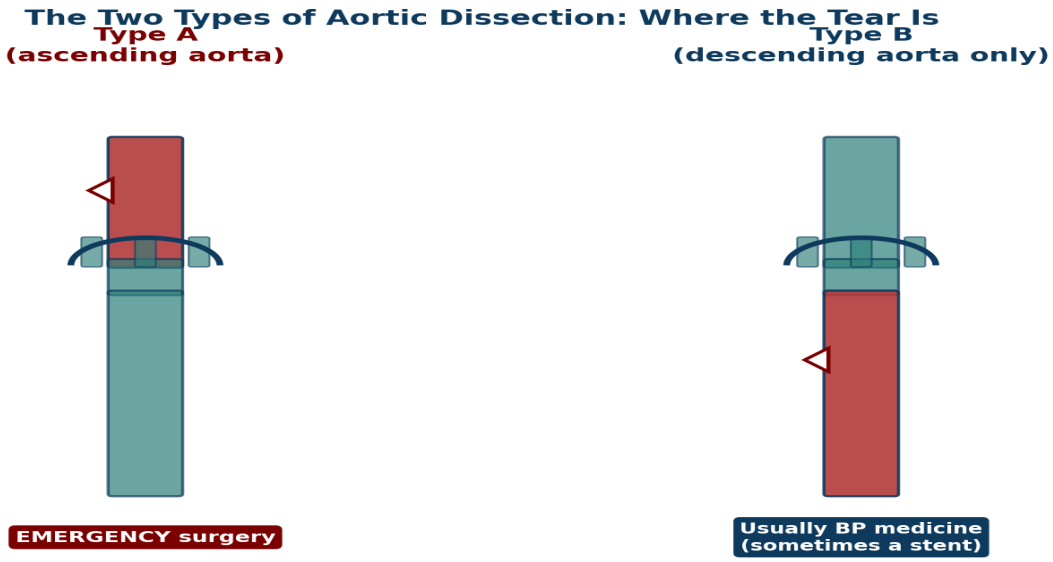
- The aorta is the body's main artery. It leaves the heart, curves through the chest, and runs down to the belly. Its wall has three layers stacked together.
- An aortic dissection is a tear in the **inner layer** of that wall. With each heartbeat, blood is forced into the tear. It pushes between the layers and splits them apart.
- This makes a second, false path inside the wall — the **false channel**. Blood now flows in the wrong place. The wall is weaker, and blood to organs can be cut off.
- The classic warning is **sudden, severe, tearing or ripping pain** in the chest or upper back. The pain often starts at full strength in a second and may move as the tear spreads.
- Where the tear sits decides everything. **Type A** involves the ascending aorta near the heart — it needs emergency surgery. **Type B** stays in the descending aorta — it is often treated with medicine.
- It is rare but deadly — about 3 to 5 people in 100,000 each year. Most who die do so before reaching the hospital. Fast recognition and fast treatment save lives.
- A dissection is not the same as a heart attack, but it can feel like one. Only a scan can tell them apart. This is why any sudden, severe tearing chest pain means a 911 call.



The aortic wall has three layers. In a dissection, the inner layer tears and blood is forced between the layers, opening a 'false channel' that did not exist before. This false channel weakens the wall and can cut off blood to organs.

Why It Matters

- A Type A dissection is one of the most time-critical events in medicine. Without surgery, the risk of death rises about 1 to 2 percent **every hour** in the first 1-2 days. Minutes truly matter.
- About two-thirds of dissections are Type A. These need emergency open-heart surgery to replace the torn part of the aorta. The other third are Type B and often start with medicine.
- The pain can be mistaken for a heart attack, a pulled muscle, or indigestion. Some patients are sent home. Knowing the warning signs — and saying them out loud to the team — can save your life.
- A dissection can block blood flow to the brain, heart, gut, kidneys, or legs. It can leak around the heart and stop it from beating. It can burst through the wall and cause fatal bleeding.
- High blood pressure is the driver in most cases. Good blood-pressure control — for life — is the single most important thing you can do to prevent a first or a repeat dissection.
- With fast surgery for Type A and careful medicine for Type B, many people survive and recover. The aorta still needs lifelong care: blood-pressure control and regular scans.



Where the tear sits decides the treatment. A Type A dissection involves the ascending aorta near the heart and needs emergency surgery. A Type B dissection stays in the descending aorta and usually starts with blood-pressure medicine, with a stent (TEVAR) added only if needed.

Type A vs Type B Dissection: Where, How Common, Treatment, and Urgency

Feature	Type A (Stanford)	Type B (Stanford)
Where the tear is	Ascending aorta (near the heart)	Descending aorta only (past the arch)
How common	About 2 of every 3 dissections	About 1 of every 3 dissections
First treatment	EMERGENCY open-heart surgery	Blood-pressure medicine in the hospital
When a stent / surgery is added	Surgery is the treatment — right away	Stent (TEVAR) if flow is cut off, pain or tear grows, or it leaks
How urgent	Minutes matter — risk rises 1-2% per hour	Urgent, but often stabilized with medicine
After care (both types)	Lifelong BP control + regular scans	Lifelong BP control + regular scans

Risk Factors

Some patients are more likely to develop this condition. Knowing your risk helps your care team take extra precautions.

Risk Factor	Why It Increases Risk
Long-standing high blood pressure	The number-one risk. Years of high pressure wear out and weaken the aortic wall. Most people with a dissection had high blood pressure. Good control lowers the risk.
Aortic aneurysm	A bulge in the aorta has a weaker, thinner wall. It is more likely to tear. A known aneurysm raises the risk of dissection.
Bicuspid aortic valve	A valve with two flaps instead of three. It comes with a weaker aortic wall in many people. Dissection can happen at younger ages and smaller sizes.
Marfan and other connective-tissue conditions	Marfan syndrome, Loeys-Dietz syndrome, and vascular Ehlers-Danlos weaken the aortic wall from birth. Dissection can strike in young adults. Relatives need screening.
Cocaine or other stimulants	Cocaine and similar stimulants cause sudden, sharp spikes in blood pressure and heart rate. This can trigger a dissection — even in younger people.
Pregnancy (late pregnancy and just after birth)	Pregnancy strains the heart and aorta and softens blood-vessel walls. The risk is highest in the third trimester and the weeks after delivery — especially with Marfan or a bicuspid valve.
Age and male sex	Most dissections happen after age 60, and more often in men. But genetic forms can strike much younger.
Heavy lifting or extreme straining	A sudden, hard strain spikes blood pressure for a moment. In a weak aorta, that spike can start a tear. People with aortic disease should avoid heavy lifting.

Treatment Options

- **Call 911 first — do not drive yourself.** A dissection can worsen in minutes. You need an ambulance, an urgent scan, and a hospital that can do aortic surgery. Driving wastes the time that saves your life.
- **Urgent CT angiogram (CTA):** The main test. Dye and a fast scanner map the whole aorta in minutes. It shows the tear, the false channel, the type (A or B), and which organs are at risk.
- **Lower blood pressure and heart rate right away:** In the ER, medicines bring the systolic (top) blood pressure down to about 100-120 and the heart rate below 60. This eases the force on the torn wall. Beta-blockers are used first.
- **Type A — emergency surgery:** The torn ascending aorta is replaced with a cloth graft. The aortic valve may be repaired or replaced too. This is open-heart surgery, done as fast as safely possible.
- **Type B — medicine first:** Most Type B dissections are treated with strict blood-pressure and heart-rate control in the hospital, plus pain relief and close watching with scans.
- **Type B — a stent when needed:** If blood flow to organs or legs is cut off, if pain or the tear keeps growing, or if the aorta is leaking, a stent-graft (TEVAR) is placed through the groin to seal the tear.
- **Pain control and calm:** Strong pain relief is given. Keeping you calm and still lowers blood pressure and stress on the aorta.
- **Aortic Team and shared decisions:** Cardiac surgery, vascular surgery, cardiology, and imaging plan the care together. Complex cases and genetic syndromes especially need a team.
- **Lifelong blood-pressure medicine:** After recovery, beta-blockers and other blood-pressure medicines are taken for life. The target is usually below 130/80. This protects the rest of the aorta.
- **Surveillance imaging for life:** CT or MRI scans track the aorta — often at 1, 3, 6, and 12 months after the event, then yearly. A part that grows or weakens may need later repair.

Type A Dissection — The Surgical Emergency

- A Type A dissection involves the ascending aorta — the part right above the heart. About two of every three dissections are this type.
- It needs emergency open-heart surgery. There is no safe wait-and-watch. The torn part of the aorta is replaced with a cloth graft.
- Without surgery, the risk of death rises about 1 to 2 percent every hour in the first day or two. This is why minutes matter and why you must call 911.
- The aortic valve may be damaged by the tear. The surgeon may repair or replace it during the same operation.
- The most dangerous early problems are bleeding around the heart, a leaking aortic valve, and loss of blood flow to the brain or heart.
- After surgery, recovery takes weeks. Blood-pressure medicine and regular scans continue for life to protect the rest of the aorta.

Type B Dissection — Usually Medicine First

- A Type B dissection stays in the descending aorta, past the arch. About one of every three dissections is this type.
- Most Type B tears are treated first with medicine — not surgery. The goal is to bring blood pressure and heart rate down fast and keep them low.
- Care happens in the hospital, often in an intensive care unit, with strong pain relief and close watching by scans.
- A stent-graft (TEVAR) is placed through the groin if blood flow to organs or legs is cut off, if pain or the tear keeps growing, or if the aorta is leaking.
- Open surgery is used less often for Type B, mainly when a stent will not fit or there are other problems.
- Like Type A, Type B needs lifelong blood-pressure control and regular scans. The part left behind can stretch or tear again over time.

Type A vs Type B — The Plain-Language Version

Type A — the tear involves the **ascending aorta** (the part right above the heart).
→ **Emergency open-heart surgery.** There is no safe wait.

Type B — the tear is in the **descending aorta only** (past the arch).
→ **Blood-pressure medicine first**, in the hospital, with close scans. A stent (TEVAR) is added only if flow is cut off, pain or the tear grows, or the aorta leaks.

Both types then need **lifelong blood-pressure control and regular imaging.**

Comfort Measures at Home (No Medication Needed)

These simple steps support healing and ease symptoms. Use them alongside any medication your doctor prescribes.

- Take your blood-pressure medicine every single day, exactly as prescribed. This is the most important thing you can do to protect your aorta. Never stop on your own.
- Check your blood pressure at home and write it down. Bring the numbers to every visit. The usual goal is below 130/80 — ask Dr. Ali for your target.
- Avoid heavy lifting, hard straining, and intense push-pull exercise. These spike blood pressure in a moment. Ask your doctor which activities are safe for you.
- Choose gentle, steady activity — walking, easy cycling, light swimming — once your team says it is safe. Steady movement helps blood pressure.
- If you smoke, stop. If you use cocaine or stimulants, stopping is urgent — they can trigger another tear. Ask for help; it is available and it works.
- Eat a low-salt, heart-healthy diet. Less salt means lower blood pressure. The DASH and Mediterranean eating plans are good choices.
- Keep every imaging appointment. A scan you skip is a warning you miss. Surveillance imaging is how problems are caught early.
- Tell your blood relatives. If you have a genetic aortic condition, a bicuspid valve, or a young dissection, your parents, siblings, and children may need imaging too.

Recovery and Lifelong Care After a Dissection

- Take your blood-pressure medicine every day, for life. This is the most important step. Beta-blockers and other medicines lower the force on the aorta. Never stop on your own.
- Keep blood pressure controlled — usually below 130/80. Check it at home, write it down, and bring the numbers to every visit.
- Keep every surveillance scan. CT or MRI is often done at 1, 3, 6, and 12 months, then yearly. Scans catch a growing or weakening aorta early.
- Avoid heavy lifting, hard straining, and intense push-pull exercise. Choose gentle, steady activity once your team says it is safe.
- Do not use cocaine or stimulants, and do not smoke. Both can trigger another tear. Ask for help to quit — it works.
- Tell your blood relatives. If your dissection was young, or you have a bicuspid valve or a connective-tissue condition, your family may need imaging too.

Risks, Benefits, and Alternatives

Every choice has trade-offs. Use this table to start the shared decision conversation.

Option	Risks	Benefits	Alternatives
Emergency surgery (Type A dissection)	Major open-heart surgery. Real risks of stroke, bleeding, and death. But the danger of NOT operating is far higher.	The only treatment that saves lives in a Type A tear. Replaces the torn aorta. Many people survive and recover well.	There is no safe wait-and-watch for Type A. Surgery is done as fast as safely possible.
Medicine first (most Type B dissections)	Needs strict hospital control and close scans. Some Type B tears later grow or block flow and then need a procedure.	Avoids the risks of surgery when the tear is stable. Works well for most Type B dissections. Lowers force on the wall.	TEVAR (a stent) if flow is cut off, pain or the tear grows, or the aorta leaks.
TEVAR — stent-graft (some Type B dissections)	Through the groin. Risks include leg-weakness from spinal artery injury and the need for follow-up scans for life.	Seals the tear without open surgery. Restores blood flow to organs and legs. Shorter recovery than open chest surgery.	Open surgery if anatomy does not fit. Medicine alone if the tear is stable and flow is fine.
Lifelong blood-pressure control (everyone, after the event)	Means taking medicine for life and keeping every scan appointment. Does not undo the dissection.	The single best way to protect the rest of the aorta and prevent another tear. Low risk, high benefit.	There is no real alternative — this is the foundation of care for every survivor.

Common Misconceptions

Myth	Reality
MYTH: A dissection and an aneurysm are the same thing.	FACT: They are different. An aneurysm is a bulge in the aorta — a weak, widened spot. A dissection is a tear in the wall layers. An aneurysm can lead to a dissection, but a dissection can also happen in an aorta that was never bulging.
MYTH: I can drive myself to the hospital if the pain is bad.	FACT: Never drive yourself. A dissection can worsen or cause you to pass out in seconds. You could crash. An ambulance can start treatment on the way and take you to a hospital that does aortic surgery. Call 911.
MYTH: Chest pain is always a heart attack, not a dissection.	FACT: Sudden, severe, tearing chest or back pain can be a dissection — and the treatment is very different. A clot-buster used for some heart attacks can be deadly in a dissection. Only a scan can tell them apart, so let the team check.
MYTH: Only older men get aortic dissections.	FACT: Most happen after age 60 and more often in men. But people with Marfan syndrome, a bicuspid aortic valve, or other genetic conditions can have a dissection in their 20s or 30s. Pregnancy and cocaine use raise the risk in younger people too.
MYTH: Once the surgery is done, I am cured and can stop my medicines.	FACT: Surgery fixes the torn part, but the rest of the aorta is still at risk. You need blood-pressure medicine for life and regular scans. Stopping your medicine is one of the most dangerous things you can do.
MYTH: If I feel fine, my blood pressure must be fine.	FACT: High blood pressure usually has no symptoms. You can feel perfectly well with dangerous numbers. The only way to know is to measure it. Check it at home and keep your appointments.

Possible Complications

Knowing what can go wrong helps you spot problems early. Most complications are uncommon, especially with treatment.

Where / What	What Can Happen
Rupture	The weak wall bursts all the way through and blood pours out. This is often fatal. It is the reason a dissection is a true emergency.
Bleeding around the heart (tamponade)	Blood can leak into the sac around the heart and squeeze it so it cannot beat. This is a common cause of death in Type A dissection. It needs immediate surgery.
Aortic valve leak	A Type A tear can pull apart the aortic valve so it no longer closes. Blood flows backward into the heart. The valve may need repair or replacement during surgery.
Loss of blood flow to organs (malperfusion)	The false channel can pinch off branches that feed the brain, heart, gut, kidneys, or legs. This causes stroke, heart attack, kidney injury, or a cold, painful leg. It is an emergency.
Stroke	If the tear reaches the vessels to the brain, a stroke can occur — sometimes as the first sign. New weakness, slurred speech, or face droop with chest pain is an emergency.
Later aneurysm or re-dissection	The part of the aorta left behind can stretch into an aneurysm over months or years, or tear again. This is why lifelong scans and blood-pressure control matter so much.
Spinal cord injury after TEVAR	Covering spinal arteries during a stent procedure can cause leg weakness or, rarely, paralysis. The team uses measures to lower this risk.

Protect the Rest of Your Aorta — Companion Guides

- **High Blood Pressure** — the main driver of dissection; daily control is everything
- **Hypertensive Emergencies** — when very high blood pressure becomes an emergency
- **Thoracic Aortic Aneurysm** — a chest-aorta bulge that can lead to a tear
- **Aortic Aneurysm** — overview of aneurysms and repair thresholds
- **Bicuspid Aortic Valve** — a common, often-inherited cause of a weaker aorta

Points to Know

If you remember nothing else, remember these key points.

- **Call 911 now** for sudden, severe, tearing or ripping pain in the chest, back, or belly. Do not wait. Do not drive yourself. Say the word 'tearing' to the team.
- Where the tear sits decides the treatment. **Type A** (ascending aorta) needs **emergency surgery**. **Type B** (descending aorta) usually starts with blood-pressure medicine.
- Time is everything. In an untreated Type A tear, the risk of death rises about 1 to 2 percent every hour at first. The fastest path to a hospital that does aortic surgery saves lives.
- An **urgent CT angiogram** is the test that finds a dissection and shows its type. It takes only minutes in the emergency room.
- High blood pressure is the main cause. Taking your blood-pressure medicine every day — for life — is the best way to prevent a first or repeat dissection.
- Genetic conditions matter. Marfan syndrome, a bicuspid aortic valve, and a family history of dissection raise your risk and lower the size at which problems start. Relatives may need imaging.
- After the event, the whole aorta needs lifelong care: blood-pressure medicine and regular CT or MRI scans. Never stop your medicine or skip a scan on your own.
- Avoid heavy lifting and hard straining, and never use cocaine or stimulants — they can trigger a tear. Ask your doctor which activities are safe for you.

When to Call Us - and When to Call 911

If you are not sure, call. We would rather hear from you twice than miss a real problem.

- **Call 911 right now:** sudden, severe, tearing or ripping pain in the chest, back, or belly. Do not drive yourself.
- **Call 911 right now:** sudden chest or back pain with fainting, collapse, or a feeling that something is terribly wrong.
- **Call 911 right now:** chest or back pain plus sudden weakness, numbness, face droop, slurred speech, or a cold and painful leg.
- **Call 911 right now:** known aortic disease and any new sudden, severe pain — say you have an aortic condition to the dispatcher.
- **Call your doctor today:** your blood pressure is running high (top number over 140) and is not coming down with your usual medicine.
- **Call your doctor today:** your surveillance scan is overdue, or you have run out of your blood-pressure medicine.
- **Make an appointment:** a parent, sibling, or child had a dissection, an aneurysm, or a sudden aortic death — you may need imaging.
- **Make an appointment:** you have been told you have a bicuspid aortic valve or Marfan syndrome and have never had your aorta imaged.

Office: (727) 943-5200

Trusted Resources

The links below are the trusted resources Dr. Ali used to write this guide and that he recommends you visit for more information. Each is a clickable link in the digital version and a Short.io tracked URL on the printed version.

- AHA — Aortic Dissection - American Heart Association overview of the tear in the aortic wall, warning signs, and why it is an emergency
- Cleveland Clinic — Aortic Dissection - Patient education on Type A vs Type B, risk factors, diagnosis, and emergency vs medical treatment
- Mayo Clinic — Aortic Dissection - Comprehensive overview of symptoms, risk factors, and when to seek emergency care
- MedlinePlus — Aortic Dissection - NIH/NLM plain-language article on causes, symptoms, and treatment
- The Marfan Foundation — Your Aorta - Patient and family resources for Marfan syndrome and heritable aortic disease, including family-screening guidance
- Learn Hands-Only CPR (AHA) - How to help if someone near you collapses — push hard and fast in the center of the chest

Sources Used to Build This Guide

Every recommendation in this guide is grounded in one or more of the studies, guidelines, or trusted resources below. Short links are tracked so Dr. Ali can see which references patients are reading; nothing personally identifying is captured.

- American Heart Association — Aortic Dissection *[Patient Education]*
  Plain-language description of the tear in the aortic wall, the sudden tearing chest/back pain, and why it is a surgical emergency.
- Cleveland Clinic — Aortic Dissection *[Patient Education]*
  Type A vs Type B dissection, risk factors (hypertension, connective tissue disease), and emergency vs medical management.
- MedlinePlus — Aortic Dissection *[Patient Education]*
  NIH/NLM overview used for safe definitions, warning signs, and call-911 triage of a suspected dissection.
- 2022 ACC/AHA Guideline for the Diagnosis and Management of Aortic Disease *[Guideline]*
  Authoritative basis for dissection classification, surgical thresholds, blood-pressure and heart-rate targets, and lifelong surveillance.
- Mayo Clinic — Aortic Dissection *[Patient Education]*
  Symptom list, risk factors, and the urgent CT-angiogram diagnostic pathway used for plain-language framing of warning signs.
- International Registry of Acute Aortic Dissection (IRAD) — overview & outcomes *[Registry]*
  Source for the 1-2% per-hour untreated Type A mortality figure and the roughly two-thirds Type A / one-third Type B distribution cited in the 2022 guideline.
- StatPearls (NCBI) — Aortic Dissection *[Reference]*
  Stanford and DeBakey classification, incidence (3-5 per 100,000 per year), and acute medical management (SBP 100-120, HR < 60, beta-blocker first).
- 2022 ACC/AHA Aortic Disease Guideline — ACC Key Points *[Guideline Summary]*
  Concise clinician summary of beta-blocker-first BP/HR control, multidisciplinary Aortic Team, and shared decision-making used to verify management bullets.
- The Marfan Foundation — Aorta & Connective-Tissue Risk *[Patient Education]*
  Family-screening guidance and connective-tissue (Marfan, Loeys-Dietz) risk used for the genetic-risk and relatives-need-screening sections.
- Cocaine-Related Aortic Dissection (review) *[Review]*
  Evidence basis for stimulant/cocaine use as a trigger for acute aortic dissection.
- Population-based incidence & outcome of acute aortic dissection *[Study]*
  Population incidence and 30-day mortality (Type A vs Type B) used to frame why minutes matter and why most deaths occur before reaching hospital.

About This Guide

Rias KS Ali, MD FACC | Board Certified in Interventional Cardiology & Cardiovascular Disease

4740 Mile Stretch Drive, Holiday FL 34690 | Office: (727) 943-5200 | Fax: (727) 943-5201 | RiasAliMD.com

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Reviewer note: Reviewed against Cleveland Clinic, Mayo Clinic, and AHA patient resources. This guide adds: the 2022 ACC/AHA aortic disease guideline framing; the IRAD registry 1-2%-per-hour untreated Type A mortality figure; plain-language Stanford Type A vs Type B with a location map; a normal-vs-dissected wall cross-section; a lead Call-911 callout with do-not-drive warning; lifelong blood-pressure control and surveillance imaging; and cross-links to the thoracic aneurysm, hypertension, bicuspid aortic valve, and hypertensive-emergency companion guides.

Disclaimer

This guide is for educational purposes only and does not replace medical advice from your physician. Recommendations may not apply to every patient. Always follow the specific instructions of Dr. Ali and your care team. In an emergency call 911 or go to the nearest emergency department.

Take This Guide With You

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