The American College of Cardiology and the American Heart Association have published a new guideline on the diagnosis and management of aortic disease, focused on surgical intervention considerations, consistent imaging practices, genetic and familial screenings, and the importance of a multidisciplinary aortic team.

The aorta is the largest artery in the body and carries oxygen-rich blood from the heart to the rest of the body. Aortic disease occurs when the aortic wall is weakened and either bulges, causing an aortic aneurysm; or tears, causing an aortic dissection. A ruptured aneurysm or severe dissection may be immediately fatal. If either is discovered via imaging tests, lifesaving treatment can include careful monitoring the injured aorta, surgery, medication and/or lifestyle changes. Symptoms of aortic disease include chest pain or pressure, back pain, fatigue, neck pain or jaw pain.

"There has been a host of new evidence-based research available for clinicians in the past decade when it comes to aortic disease. It was time to re-evaluate and update the previous, existing guidelines," said Eric M. Isselbacher, MD, MSc, guideline writing committee chair. "We hope this new guideline can inform clinical practices with up-to-date and synthesized recommendations, targeted toward a full multidisciplinary aortic team working to provide the best possible care for this vulnerable patient population."

Recommendations in the new guideline, published in the *Journal of the American College of Cardiology*, include:

- **Family screening**—To identify individuals most at risk for aortic disease, the new guideline recommends family screening, including genetic testing and imaging, of first-degree relatives of individuals diagnosed with aneurysms of the aortic root or ascending thoracic aorta, or those with aortic dissection.

- **Consistency in imaging**—The guideline stresses the importance of consistency in the way CT or MRI imaging is obtained and reported, in the measurement of aortic size and features, and in how often images are used for monitoring before and after repair surgery or other intervention. Ideally, all surveillance imaging for a patient should be done using the same modality and in the same lab.

- **Patient size adjustments**—The guideline recommends modifying surgical thresholds in patients who are significantly smaller or taller than average. Guidance for the size of aortic injury that would indicate a need for surgery should be adjusted for the patient's body surface area or height.

- **Surgery**—At institutions with multidisciplinary aortic teams and experienced surgeons, the threshold for surgical intervention for sporadic aortic root and ascending aortic aneurysms has been lowered from 5.5 cm to 5.0 cm in certain individuals. Risk of aortic aneurysm or dissection increases...
with size. With this recommendation, select individuals may get lifesaving surgery sooner to prevent death from an aortic aneurysm or dissection. In addition, the guideline updates the definition for rapid aneurysm growth rate: surgery is recommended for individuals with aneurysms of aortic root and ascending thoracic aorta with a confirmed growth rate of \( \geq 0.3 \text{ cm per year} \) across two consecutive years or \( \geq 0.5 \text{ cm in one year} \). Rapid aortic growth is a risk factor for rupture.

- **Multidisciplinary aortic teams**—For individuals who require aortic intervention, outcomes are optimized when surgery is performed by an experienced surgeon working in a multidisciplinary aortic team. The new guideline recommends "a specialized hospital team with expertise in the evaluation and management of aortic disease, in which care is delivered in a comprehensive, multidisciplinary manner."

These teams may consist of cardiac and vascular surgeons with extensive experience managing complex aortic disease at a center with a high volume of aortic interventions; imaging specialists with expertise in aortic disease who can interpret CT, MRI and echocardiography; anesthesiologists experienced in the management of acute aortic disease and cerebrospinal fluid drainage; and an intensive care unit experienced in the management of acute aortic disease.

- **Shared decision-making**—The multidisciplinary aortic team is highly encouraged to involve the patient in decision-making, especially when individuals are on the borderline of thresholds for repair or eligible for different types of surgical repair. Shared decision-making should also be used with individuals who are pregnant or may become pregnant to consider the risks of pregnancy in individuals with aortic disease. Shared decision-making has become increasingly important in patient-centered care and may be especially useful when discussing quality of life, goals of care and desired procedural outcomes.

This new aortic disease guideline replaces the "2010 ACCF/AHA Guidelines for the Diagnosis and Management of Patients with Thoracic Aortic Disease" and the "2015 Surgery for Aortic Dilation in Patients with Bicuspid Aortic Valves: A Statement of Clarification from the ACC/AHA Task Force on Clinical Practice Guidelines." It is intended to be used concurrently with the "2020 ACC/AHA Guideline for the Management of Patients with Valvular Heart Disease." The new guideline brings together guidelines for both the thoracic and abdominal aorta and is targeted to cardiovascular clinicians who are involved in the care of people with aortic disease, including general cardiovascular care clinicians and emergency medicine clinicians.


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