	CLASS I Benefit >>>Risk	CLASS IIa Benefit >>Risk	CLASS IIb Benefit ≥ Risk
Level A Multiple populations evaluated	TEAMWORK		
Level B Limited populations evaluated			
Level C Very limited populations evaluated			

What Are The Differences Between The ACC/AHA And The European Guidelines On Ascending Aorta And Arch Disease

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MORE SHORT HOT NEW TOPICS RELATED TO AORTIC DISEASE AND ITS TREATMENT
November 19-23 2024

Disclosures

Consultant
W. L. Gore and Associates
Terumo Aortic
AbioMed
Intressa Vascular
Atrivion

MORE SHORT HOT NEW TOPICS RELATED TO AORTIC DISEASE AND ITS TREATMENT

Disclosures

And co- author of both guidelines documents

MORE SHORT HOT NEW TOPICS RELATED TO AORTIC DISEASE AND ITS TREATMENT

Loren F. Hiratzka, Circulation. 2010; ACCF/AHA/AATS/ACR/ASA/SCA/SCAI/SIR/STS/SVM Guidelines for the Diagnosis and Management of Patients With Thoracic Aortic Disease. Volumes: 121, Issue: 13, Pages: e266-e369, DOI: (10.1161/CIR.0b013e3181d4739e)

Circulation

- 2010
- First multisociety guidelines document on the management of aortic diseases
- Limited to the thoracic aorta

(18 authors// 7 cardiologists, 4 surgeons, 2 radiol, 1 EM, 1 neuro,1 anesth,1 genet., 1 CV nurse)
827 references
1,017 citations, 388,500 downloads (until march 2024)

American Heart Association.

AMERICAN COLLEGE of CARDIOLOGY FOUNDATION

2022 ACC/AHA Guideline for the Diagnosis and Management of Aortic Disease

Developed in **Collaboration with and endorsed by the American Association for Thoracic Surgery,** American College of Radiology, Society of Cardiovascular Anesthesiologists, Society for Cardiovascular Angiography and Interventions, **Society of Thoracic Surgeons**, and Society for Vascular Surgery.

Endorsed by Society for Interventional Radiology and Society for Vascular Medicine

Isselbacher, EM, Preventza O, Black J et al. 2022 ACC/AHA Guideline for the Diagnosis and Management of Aortic Disease. *Circulation.*

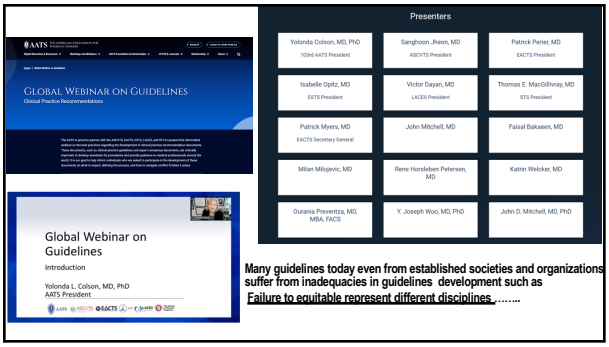
What happened between ? (2010---2022)

Peripheral Arterial Disease and Aortic disease

1 societies , 1 specialty

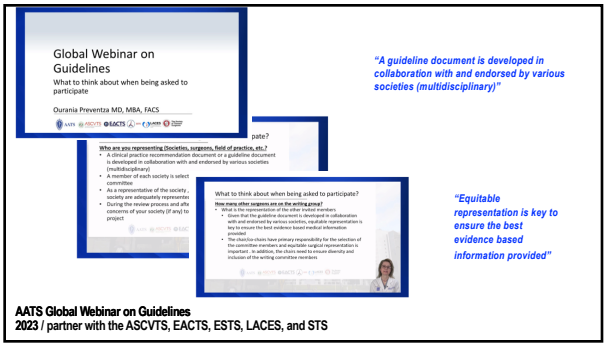
Endorsed by others

Use of word : significant aortic dilation specifying the diameter or the indexed diameter value rather than the term 'aneurysm'



Many guidelines today even from established societies and organizations suffer from inadequacies in guidelines development such as

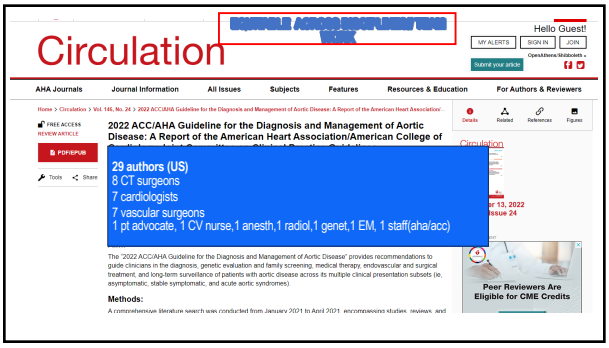
Failure to equitable represent different disciplines……



"A guideline document is developed in collaboration with and endorsed by various societies (multidisciplinary)"

"Equitable representation is key to ensure the best evidence based information provided"

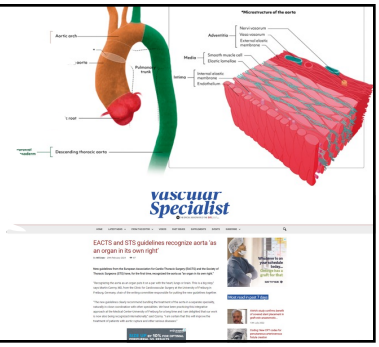
AATS Global Webinar on Guidelines
2023 / partner with the ASCVTS, EACTS, ESTS, LACES, and STS

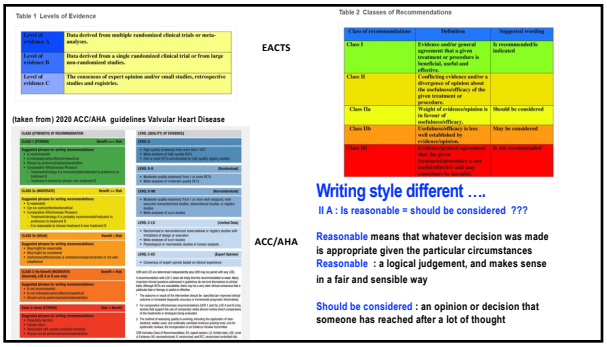


Recognize the aorta as an organ

February 2024

- Big step: Recognizing the aorta as an organ
- Treatment in close coordination with various specialties





Writing style different ….

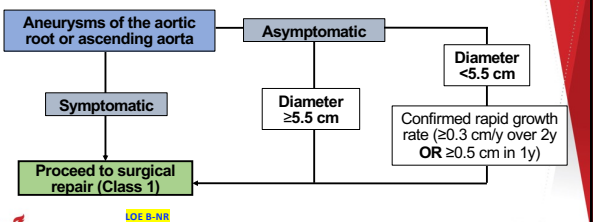
II A : Is reasonable = should be considered ???

Reasonable means that whatever decision was made is appropriate given the particular circumstances

Reasonable : a logical judgement, and makes sense in a fair and sensible way

Should be considered : an opinion or decision that someone has reached after a lot of thought

Recommendations for Surgery for Sporadic Aneurysms of the Aortic Root and Ascending Aorta



LOE B-NR

Isselbacher, EM, Preventza O, Black J et al. 2022 ACC/AHA Guideline for the Diagnosis and Management of Aortic Disease. *Circulation.*

For patients with height or BSA outside of 1-2 SD of the mean, use:

Things important to practitioners who ❤ the aorta

- Aortic size index: aortic diameter (cm) / BSA (m^2)
- Aortic height index: aortic diameter (cm) / patient height (m)
- Cross sectional area to height

Isselbacher, EM, Preventza O, Black J et al. 2022 ACC/AHA Guideline for the Diagnosis and Management of Aortic Disease. *Circulation.*

Root and ascending aorta

Recommendation Table 12: Chronic aortic diseases: root and ascending aorta

Recommendations	Class[a]	Level[b]	Ref
Surgery for an ascending aortic aneurysm located at the root or tubular tract, either with TAV or BAV, is recommended when the maximum aortic diameter is ≥55 mm.	I	B	[333, 334]
Surgery for BAV-related aortopathy with 'root phenotype' is recommended when the maximum aortic diameter is ≥55 mm.	I	B	[82, 84–87, 335]
Surgery for TAV-associated aneurysms with 'root phenotype' should be considered when the maximum aortic diameter is ≥55 mm in a low-surgical-risk setting.[g]	IIa	B	[87, 336–338]
In patients with low surgical risk[e] and 'ascending phenotype' dilatation, both with TAV and BAV, surgical treatment should be considered when the maximum aortic diameter is >52 mm.	IIa	C	-
In patients with low surgical risk and 'ascending phenotype' BAV-related aortopathy, surgery should be considered at a maximum diameter ≥50 mm if any of the following is present:	IIa	C	-

- age <50 years
- short stature (<1.69 m)[f]
- ascending aortic length >11 cm[g]
- aortic diameter growth rate >3 mm/year
- family history of the acute aortic syndrome
- aortic coarctation

55 mm remains as class 1 recommendation LOE B

European Journal of Cardio-Thoracic Surgery, Volume 65, Issue 2, February 2024

Take Home Messages

Things important to practitioners who ❤ the aorta

At centers 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 **selected** patients, and **even lower in specific scenarios** among patients with heritable thoracic aortic aneurysms. (II A)

Isselbacher, EM, Preventza O, Black J et al. 2022 ACC/AHA Guideline for the Diagnosis and Management of Aortic Disease. *Circulation.*

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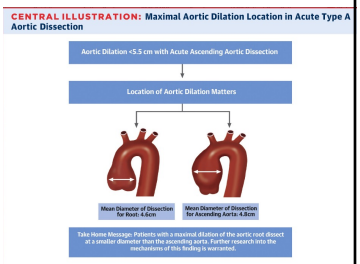
Introduction of the 52 mm diameter (IIA)

Surgical treatment when the maximum aortic diameter is >52 mm (ascending phenotype, low surgical risk pts)

European Journal of Cardio-Thoracic Surgery, Volume 65, Issue 2, February 2024

In patients with purely tricuspid AV- non syndromic aortopathy who experienced ascending aortic dissection, those with root phenotype (younger/ more frequently male) dissected at significantly smaller diameters than patients with an ascending phenotype

IRAD 1996-2016
667 pts //stratified by location of the largest aortic segment
MAD <5.5 cm



Ganapathi AM, et al. J Am Coll Cardiol. 2022;79(19):1890-1897.

BAV

Recommendations for BAV Aortopathy Interventions: Replacement of the Aorta in Patients With BAV
Referenced studies that support the recommendations are summarized in the Online Data Supplement.

COR	LOE	Recommendations
1	B-NR	1. In patients with a BAV and a diameter of the aortic root, ascending aorta, or both of ≥5.5 cm, surgery to replace the aortic root, ascending aorta, or both is recommended.[7,9]
2a	B-NR	2. In patients with a BAV and a cross-sectional aortic root or ascending aortic area (cm²) to height (m) ratio of ≥10 cm²/m, surgery to replace the aortic root, ascending aorta, or both is reasonable, when performed by experienced surgeons in a Multidisciplinary Aortic Team.[3,4]
2a	B-NR	3. In patients with a BAV a diameter of the aortic root or ascending aorta of 5.0 cm to 5.4 cm, and an additional risk factor for aortic dissection (Table 14), surgery to replace the aortic root, ascending aorta, or both is reasonable, when performed by experienced surgeons in a Multidisciplinary Aortic Team.[3,5]
2a	B-NR	4. In patients with a BAV who are undergoing surgical aortic valve repair or replacement, and who have a diameter of the aortic root or ascending aorta of ≥4.5 cm, concomitant replacement of the aortic root, ascending aorta, or both is reasonable, when performed by experienced surgeons in a Multidisciplinary Aortic Team.[10]
2b	B-NR	5. In patients with a BAV, a diameter of the aortic root or ascending aorta of 5.0 cm to 5.4 cm, no other risk factors for aortic dissection (Table 14), and at low surgical risk, surgery to replace the aortic root, ascending aorta, or both may be reasonable, when performed by experienced surgeons in a Multidisciplinary Aortic Team.[7,10]

Table 14. Risk Factors for Aortic Dissection

Family history of aortic dissection
Aortic growth rate ≥0.3 cm/y
Aortic coarctation
'Root phenotype' aortopathy

Isselbacher, EM, Preventza O, Black J et al. 2022 ACC/AHA Guideline for the Diagnosis and Management of Aortic Disease. *Circulation*.

Patients with dilation of the aortic root ("root phenotype") represent 10% to 20% of patients with BAV and aortopathy and may have more rapid aortic growth and an increased risk of aortic complications (RL cusp fusion, male and AI).

Root and ascending aorta

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BAV with "root phenotype"

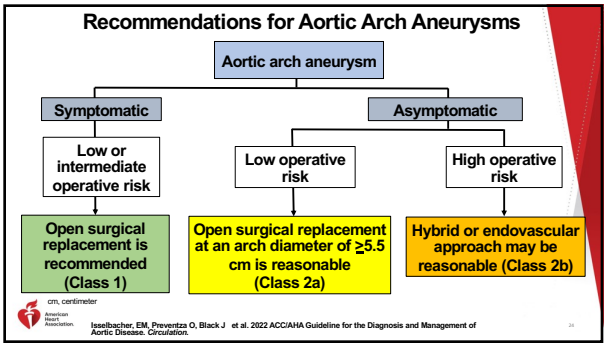
Surgical treatment when the maximum aortic diameter is >50 mm

Class I , LOE B

We know that there is increased aortic risk related to the root phenotype

But are the data conclusive and is the evidence strong for class I ??

European Journal of Cardio-Thoracic Surgery, Volume 65, Issue 2, February 2024



Recommendations for Aortic Arch Aneurysms

Considerations for Surgical Approach

In patients undergoing open surgical repair for …..

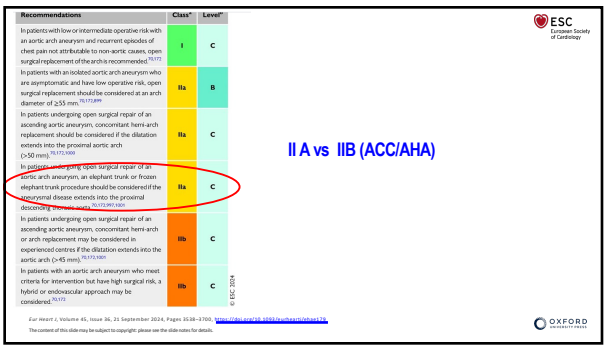
an ascending aortic aneurysm

if the aneurysmal disease extends into the proximal aortic arch, it is reasonable to extend the repair with a hemiarch replacement (Class 2a)

an aortic arch aneurysm

if the aneurysmal disease extends into the proximal descending thoracic aorta, an elephant trunk procedure may be considered (Class 2b)

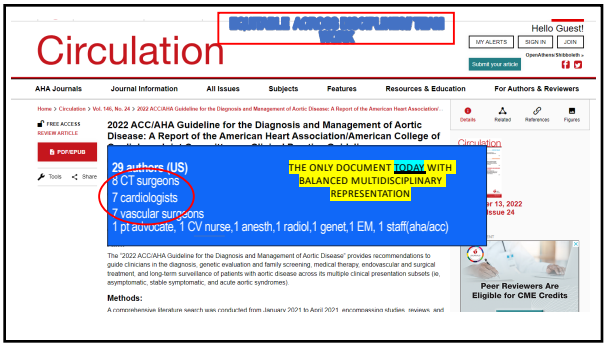
Isselbacher, EM, Preventza O, Black J et al. 2022 ACC/AHA Guideline for the Diagnosis and Management of Aortic Disease. *Circulation.*

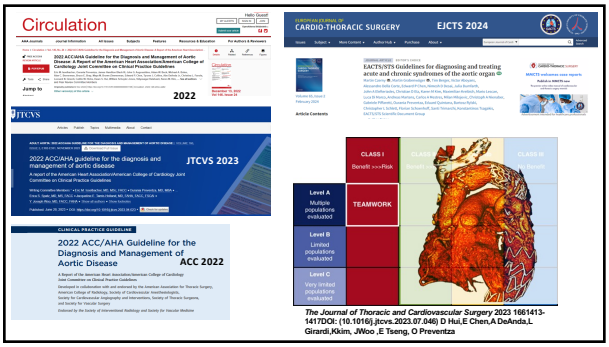


II A vs IIB (ACC/AHA)

What Are The Differences Between The ACC/AHA And The European Guidelines On Ascending Aorta And Arch Disease

- Guidelines are written and reviewed by experts
- Guidelines are "suggestions" and are meant to be used not only from the experts BUT mainly from the general practitioner and for the surgeons not necessarily in a major aortic center





The Journal of Thoracic and Cardiovascular Surgery 2023 1661413-1417DOI: (10.1016/j.jtcvs.2023.07.046) D Hui,E Chen,A DeAnda,L Girardi,Kkim, JWoo ,E Tseng, O Preventza