

# Identification of patients suitable for transcatheter aortic valve implantation (TAVI)

(Based on 2017 ESC/EACTS guidelines<sup>1</sup>)

Suspicion of Aortic Stenosis (AS)

Patient referral from General Practitioner

Auscultation

Echocardiography

Assessment of Aortic Stenosis severity

See overleaf

Diagnosis of severe AS confirmed

For physically active patients, exercise testing is recommended for unmasking symptoms



Chest pain or tightness<sup>2</sup>



Shortness of breath<sup>2</sup>



Reduced physical activity level<sup>2</sup>



Fatigue<sup>2</sup>



Dizziness, feeling faint or fainting upon exertion<sup>2</sup>



Palpitations<sup>3</sup>

Symptoms of severe AS confirmed

In special cases, asymptomatic patients might also be referred to the Heart Team.\*

ESC/EACTS Guidelines

recommendations to assist the Heart Team's decision for choice of intervention

Referral to Heart Team

Heart Valve Centre

See overleaf

\*Majority of asymptomatic patients should be put on watchful waiting and periodically re-evaluated. In some special cases they might benefit from referral to Heart Team. For more information, please consult the 2017 Guidelines.

Patient evaluation

Decision on intervention

Recommendations for treatment of severe symptomatic AS

Low surgical risk

Increased surgical risk

Not suitable for surgical aortic valve replacement (sAVR)

sAVR

- STS or EuroSCORE II <4%  
logistic EuroSCORE I <10%
- and
- No other risk factors not included in scores (e.g. frailty, porcelain aorta, sequelae of chest radiation)

sAVR or TAVI

- STS or EuroSCORE II ≥4%  
logistic EuroSCORE I ≥10%
- or
- Other risk factors not included (e.g. frailty, porcelain aorta, sequelae of chest radiation)
- Decision by Heart Team according to individual patient characteristics

TAVI

As assessed by Heart Team

sAVR or TAVI

Aspects to be considered by Heart Team for decision between TAVI and sAVR



Clinical characteristics

<4%

STS/EuroSCORE II

≥4%

<75

Age

≥75

Endocarditis suspected

Restricted mobility and conditions affecting rehabilitation  
Previous cardiac surgery

Frailty<sup>†</sup>  
Severe comorbidity not reflected in score

<sup>†</sup>Frailty should be diagnosed using a non-subjective assessment tool, and not using methods such as the 'eyeball' test.

Anatomical and technical

Unfavourable access (any) for TAVI

Vascular/valve anatomy unsuitable for TAVI

Concomitant cardiac surgical intervention

Aorta or LV thrombi

Suitable for transfemoral TAVI

Severe chest deformation or scoliosis

Presence of intact coronary bypass grafts at risk following sternotomy

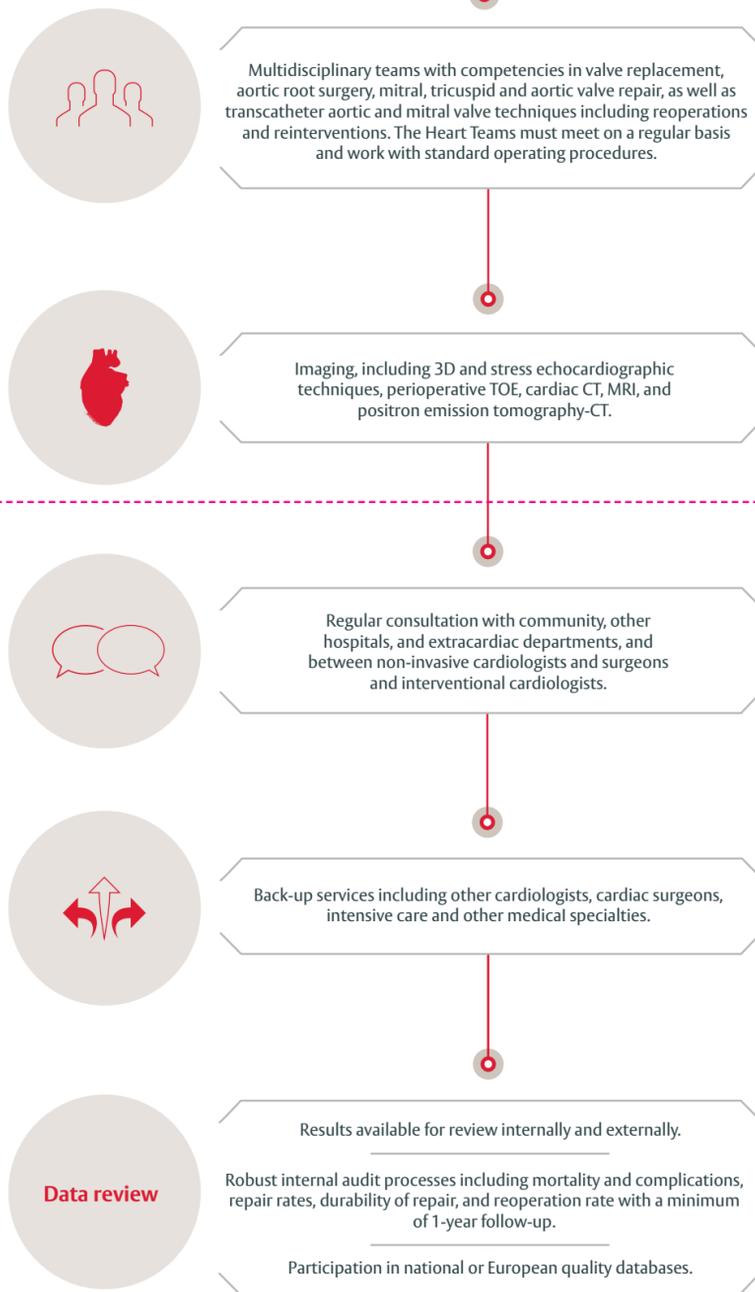
Porcelain aorta

Expected patient-prosthesis mismatch

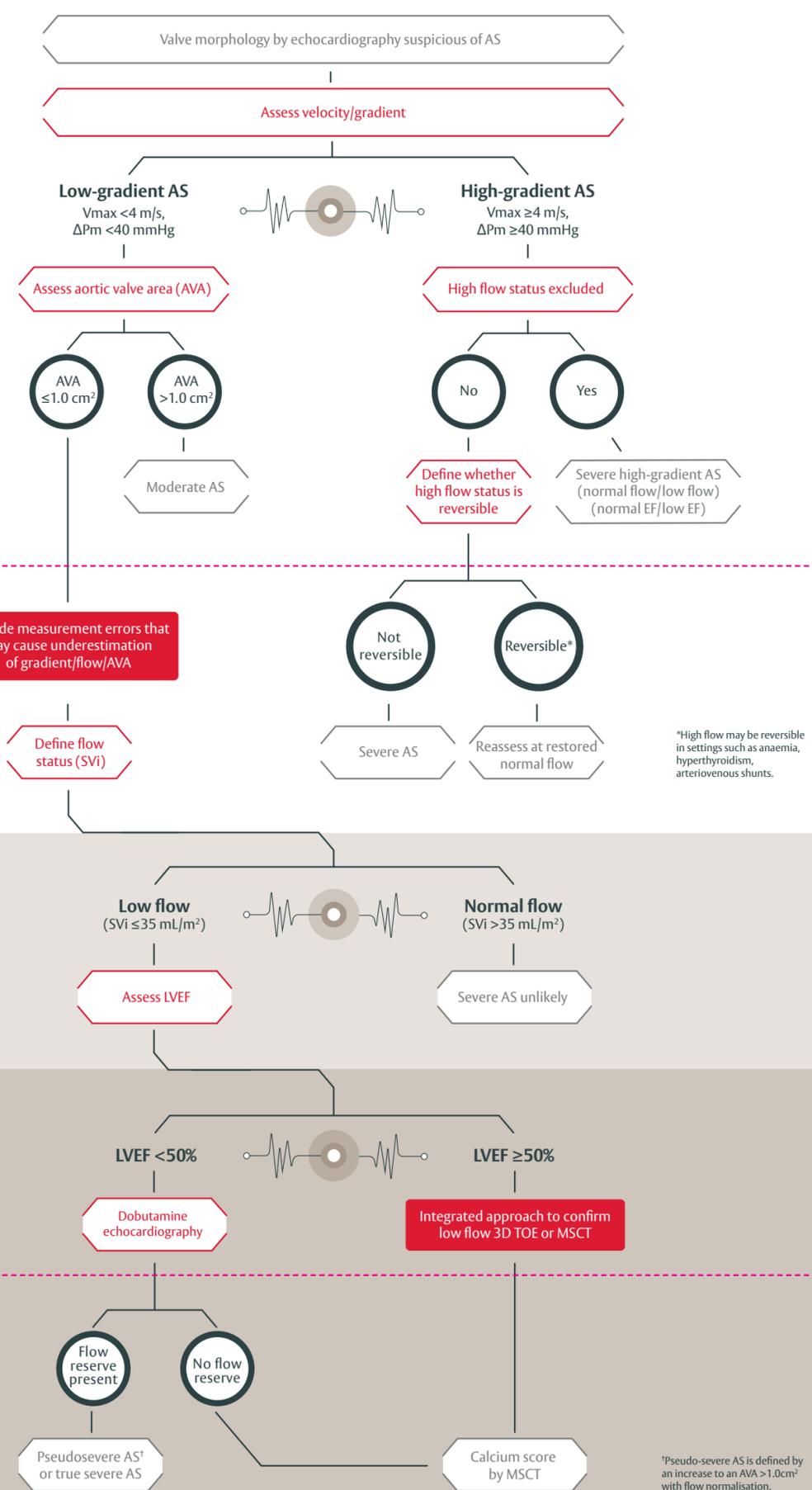
Sequelae of chest radiation

# Heart Valve Centre

## Requirements



# Assessment of Aortic Stenosis severity



Adapted from: Task Force on the Management of Valvular Heart Disease of the European Society of Cardiology (ESC); European Association for Cardio-Thoracic Surgery (EACTS), Baumgartner H, Falk V, Bax JJ et al. 2017 ESC/EACTS Guidelines for the management of valvular heart disease (version 2017). *EJH* 2017;38:2739-91

3D, three-dimensional; ΔPm, mean transvalvular pressure gradient; AS, aortic stenosis; AVA, aortic valve area; CT, computed tomography; EACTS, European Association for Cardio-Thoracic Surgery; EF, ejection fraction; MSCT, multislice computed tomography; LV, left ventricular; LVEF, left ventricular ejection fraction; MRI, magnetic resonance imaging; MSCT, multislice computed tomography; SAS, severe aortic stenosis; SAVR, surgical aortic valve replacement; STS, Society of Thoracic Surgeons; SVi, stroke volume index; TAVI, transcatheter aortic valve implantation; TOE, transoesophageal echocardiography; Vmax, peak transvalvular velocity.

- Task Force on the Management of Valvular Heart Disease of the European Society of Cardiology (ESC); European Association for Cardio-Thoracic Surgery (EACTS), Baumgartner H, Falk V, Bax JJ et al. 2017 ESC/EACTS Guidelines for the management of valvular heart disease (version 2017). *EJH* 2017;38:2739-91.
- Lindman BR, Clavel MA, Mathieu P et al. Calcific aortic stenosis. *Nature reviews Disease primers* 2016; 2: 16006.
- Problem: Aortic Valve Stenosis. [http://www.heart.org/HEARTORG/Conditions/More/HeartValveProblemsandDisease/Problem-Aortic-Valve-Stenosis\\_UCM\\_450437\\_Article.jsp#.Wjks9km7IXN](http://www.heart.org/HEARTORG/Conditions/More/HeartValveProblemsandDisease/Problem-Aortic-Valve-Stenosis_UCM_450437_Article.jsp#.Wjks9km7IXN). Accessed December, 2017.

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