

Aortic Stenosis

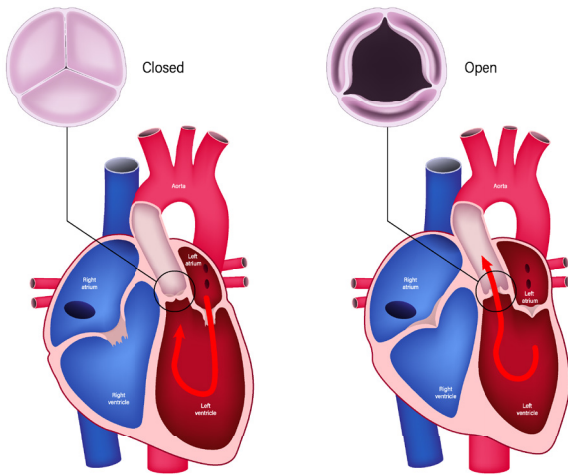
Aortic stenosis

Aortic stenosis (AS) is the most common valvular heart disease in Australia and has an estimated prevalence of more than 10% in Australians over the age of 80¹. Aortic stenosis is a condition in which there is narrowing in the opening of the aortic valve. When the aortic valve is affected by stenosis, it impedes the normal flow of blood from the heart into the aorta and, subsequently, to the rest of the body. Owing to an aging population there is a growing prevalence of severe AS in Australia.

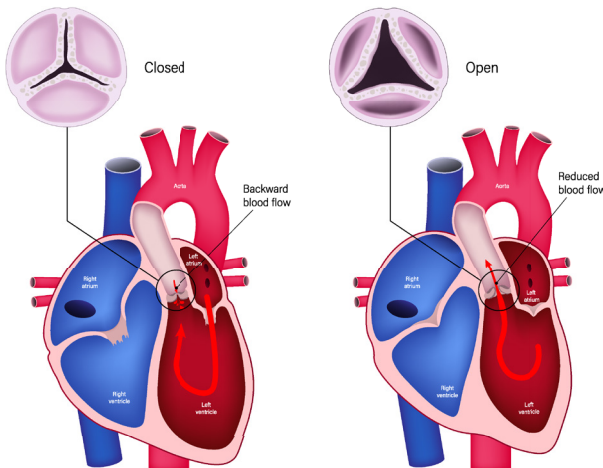
Causes:

- Degenerative: Ageing can lead to degeneration and calcification of the aortic valve which ultimately restricts its movement.
- Congenital: Some individuals may be born with aortic valve abnormalities that predispose them to stenosis, such as a bicuspid aortic valve.

NORMAL AORTIC VALVE



AORTIC VALVE STENOSIS



Symptoms:

Patients often experience exertional angina, dyspnoea, fatigue, and syncope. Severe aortic stenosis can lead to left ventricular dysfunction and the development of heart failure.

Diagnosis:

- Physical Examination: Detection of a heart murmur during routine auscultation could indicate aortic stenosis.
- Trans-thoracic echocardiography: This is the primary tool for diagnosing aortic stenosis. It provides detailed images of the heart and valves. Aortic stenosis severity is often classified as mild, moderate, or severe based on factors such as the valve area and pressure gradients.

Prognosis:

Untreated aortic stenosis can lead to heart failure and significantly increased mortality. Once symptomatic, severe AS is associated with a poor prognosis with a 4% mortality per month². Patients with severe AS should therefore be referred to a Cardiologist for consideration of intervention.

Treatment:

- **Medications:** Beta-blockers and ACE-inhibitors may be used to manage symptoms and improve left ventricular function.
- **Procedures:** Surgical aortic valve replacement (SAVR) or transcatheter aortic valve implantation (TAVI) are standards of care. The decision on whether to undergo TAVI or surgery is made after detailed discussion in a multi-disciplinary heart team meeting (Figure 3). TAVI has several advantages over surgery, including shorter recovery times, reduced hospital stays, and a lower risk of complications.



Figure 1: Edwards Lifesciences Sapien S3 TAVI valve



Figure 2: Medtronic Evolut Pro TAVI valve

Key points

- Severe AS without valvular intervention is associated with a poor prognosis.
- GPs are paramount in facilitating timely diagnosis and treatment for patients with severe AS.
- TAVI is a well-established procedure that enables treatment for severe AS and offers reduced hospital stay, expedited recovery and improved quality of life when compared with surgery.

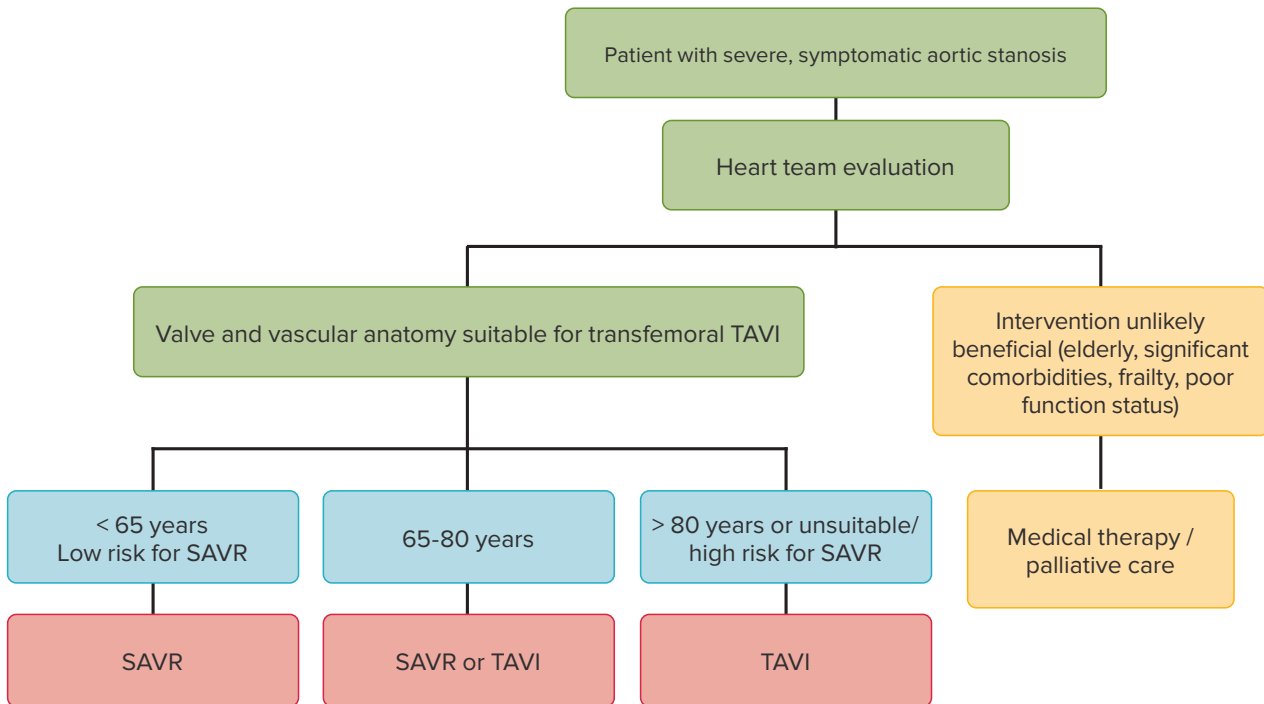


Figure 1: Management algorithm for patients with severe aortic stenosis based on the American Heart Association/American College of Cardiology and European Society of Cardiology guidelines for the management of valvular heart disease³.

References:

1. Rayner C, Adams H (2023). Aortic stenosis and transcatheter aortic valve implantation in the elderly. *Australian Journal for General Practitioners* 52: 458-463.
2. Ben-Dor I, Pichard AD, Gonzalez MA, et al. Correlates and causes of death in patients with severe symptomatic aortic stenosis who are not eligible to participate in a clinical trial of transcatheter aortic valve implantation. *Circulation* 2010;122 Suppl 11:S37-42. doi: 10.1161/CIRCULATIONAHA.109.926873.
3. Rana M. Aortic valve stenosis: Diagnostic approaches and recommendations of the 2021 ESC/EACTS guidelines for the management of valvular heart disease – a review of the literature. *Cardiol Cardiovasc Med* 2022;6(3):315-24. doi: 10.26502/fccm.92920267.



Dr Abhisheik Prashar

MBBS MMED(CLINEPI) AFHEA FRACP FCSANZ

Cardiology - Interventional

St George Private Hospital
Level 5, Suite 505
131 Princes Highway
Kogarah NSW 2217

P: 02 9060 6645
F: 02 9060 6646

Dr Abhisheik Prashar is a
Cardiologist with a particular
interest in interventional and
structural cardiology.

