



Aortic stenosis and regurgitation

# Aortic Valve Disease FocusClass

The Aortic Valve Disease FocusClass offers a comprehensive overview of diagnosing and managing aortic stenosis (AS) and aortic regurgitation (AR) using ultrasound. The course covers essential topics such as the basics of aortic valve disease, causes, echocardiographic assessment, and advanced quantification techniques. Learners will explore both theoretical aspects and practical demonstrations, including case studies on bicuspid and tricuspid valves, Doppler spectrum analysis, and planimetry. With structured lectures, practical demonstrations, and interactive quizzes, this course is designed to provide sonographers, radiologists, and clinicians with a solid foundation in assessing aortic valve pathologies. The flexible format allows for self-paced learning, combining theoretical knowledge with hands-on ultrasound application. Note: This course includes AI-generated translations in Spanish and Arabic. Accuracy is not guaranteed (read more in Terms & Conditions)

5.5  
CME credits

11  
Chapters

46  
Lectures

11  
Quizzes

## Chapter 1 | 0.5 CME

### Aortic Stenosis - Basics

Introduction, epidemiology, and the impact of AS. Understanding the hemodynamics and symptoms associated with aortic valve disease.

#### Lectures & Quizzes:

- Introduction / Epidemiology
- Definition and Impact
- Hemodynamics
- Symptoms
- Quiz - Aortic Stenosis - Basics

## Chapter 2 | 0.5 CME

### Aortic Stenosis - Causes

Detailed look into congenital and acquired causes of AS and AR. Examination of bicuspid and tricuspid valves, rheumatic AS, and radiation-induced AS.

#### Lectures & Quizzes:

- Bicuspid valves - basics
- Assessment of bicuspid valves
- Tricuspid AV stenosis
- Rheumatic AS
- Radiation-induced AS
- Quiz - Aortic Stenosis - Causes

Chapter 3 | 0.5 CME

## Aortic Stenosis - Echo Assessment of AS

Understanding aortic valve morphology and its assessment using ultrasound. Evaluation of additional findings in AS and left ventricular function (LVF) assessment.

### Lectures & Quizzes:

- AV morphology
- Additional findings
- What else to look for
- Assessment of LVF in AS
- Global Longitudinal Function in AS
- Quiz - Aortic Stenosis - Echo assessment of AS

Chapter 4 | 1 CME

## Aortic Stenosis - Quantification of AS

Overview and methodologies for quantifying AS using Doppler and planimetry. Focus on measuring gradients, assessing aortic valve area (AVA), and handling complex cases like low-flow, low-gradient AS.

### Lectures & Quizzes:

- Quantification - Overview / Planimetry
- The Doppler spectrum of AS
- Measuring gradients
- AVA and the continuity equation
- Low-flow low-gradient AS
- Paradoxical low-flow low-gradient AS
- High-flow states and aortic stenosis
- Quiz - Aortic Stenosis - Quantification of AS

Chapter 5 | 0.25 CME

## Aortic Stenosis - Special Circumstances

Evaluating AS in special conditions such as atrial fibrillation, LVOT obstruction, and pressure recovery.

### Lectures & Quizzes:

- Atrial fibrillation and AS
- LVOT obstruction
- Pressure recovery
- Quiz - Aortic Stenosis - Special Circumstances

Chapter 6 | 0.5 CME

## Aortic Stenosis - Management of AS

Indications for intervention, selection between TAVR (Transcatheter Aortic Valve Replacement) or SAVR (Surgical Aortic

Valve Replacement), and echo assessment pre- and post-TAVR.

#### Lectures & Quizzes:

- Indication for intervention
- TAVR or SAVR?
- Echo assessment Pre-TAVR
- Echo follow up
- Quiz - Aortic Stenosis - Management of AS

#### Chapter 7 | 0.25 CME

## Aortic Regurgitation - Basics

Introduction and Epidemiology. Symptoms and Other Imaging Modalities: Understanding clinical symptoms and the role of additional imaging methods in detecting AR.

#### Lectures & Quizzes:

- Introduction / Epidemiology
- Symptoms / other imaging modalities
- Quiz - Aortic Regurgitation - Basics

#### Chapter 8 | 0.25 CME

## Aortic Regurgitation - Causes

A detailed breakdown of the various congenital and acquired causes of AR, offering insights into the most common and rare etiologies.

#### Lectures & Quizzes:

- Causes Part 1
- Causes Part 2
- Quiz - Aortic Regurgitation - Causes

#### Chapter 9 | 0.5 CME

## Aortic Regurgitation - Hemodynamics and Echocardiographic Findings

Hemodynamics: A focus on the hemodynamic changes associated with AR and how they impact cardiac function. Echofindings: A thorough review of typical echocardiographic features of AR, including acute AR and multivalvular disease.

#### Lectures & Quizzes:

- Hemodynamics
- Echofindings
- Acute aortic regurgitation
- AR and multivalvular heart disease
- Quiz - Aortic Regurgitation - Hemodynamics and Echofindings

## Aortic Regurgitation - Quantification of AR

Principles of Quantification: Methods for assessing the severity of AR, including imaging the color jet, pressure half-time, and visual assessment techniques. Retrograde Flow and Volumetric Calculations: Advanced techniques for measuring regurgitant flow and volumetric assessments of AR, including real-world demonstrations. Role of TEE: The application of transesophageal echocardiography (TEE) in evaluating AR, particularly in complex cases.

### Lectures & Quizzes:

- Quantification - Principles
- Imaging aortic regurgitation Color jet
- Visual assessment
- AR Pressure Half-Time
- Retrograde flow
- Volumetric calculations
- Role of TEE
- Quantification summary
- Quiz - Aortic Regurgitation - Quantification

## Aortic Regurgitation - Therapy

Indication for Surgery: Guidelines for when surgical intervention is necessary, based on the latest evidence. Follow-Up and Conclusion: Best practices for long-term monitoring of patients with AR and concluding remarks on treatment approaches.

### Lectures & Quizzes:

- Indication for surgery
- Follow up / Conclusion
- Quiz - Aortic Regurgitation - Therapy