

Systolic Ejection Murmurs

	Aortic	Dynamic LVOT	Fixed Subaortic
Colour aliasing	Valve level	Below Valve	Below Valve
Doppler Signal	Symmetric	Dagger shaped	Symmetric
Aortic valve	Calcified Restricted opening	Premature closure/fluttering	AI (up to 40%)
Mitral valve		Systolic anterior motion, posteriorly directed MR	
Valsalva/standing		Increased gradients	

Classification of AS Severity ACC/AHA Guidelines 2014

	Aortic Sclerosis	Mild	Moderate	Severe
Jet Velocity	≤ 2.5 m/s	2.6-2.9	3.0-4.0	> 4.0
Mean Gradient (mmHg)		< 30	30-50	> 50
AVA (cm ²)		> 1.5	1.0-1.5	< 1.0
Indexed AVA (cm ² /m ²)		> 0.85	0.6-0.85	< 0.6
Velocity Ratio		> 0.50	0.25-0.50	< 0.25

Potential Sources of Error

1. Underestimation of gradients
2. Underestimation of LVOT area
3. Low cardiac output

Apical Windows Max < 50%!

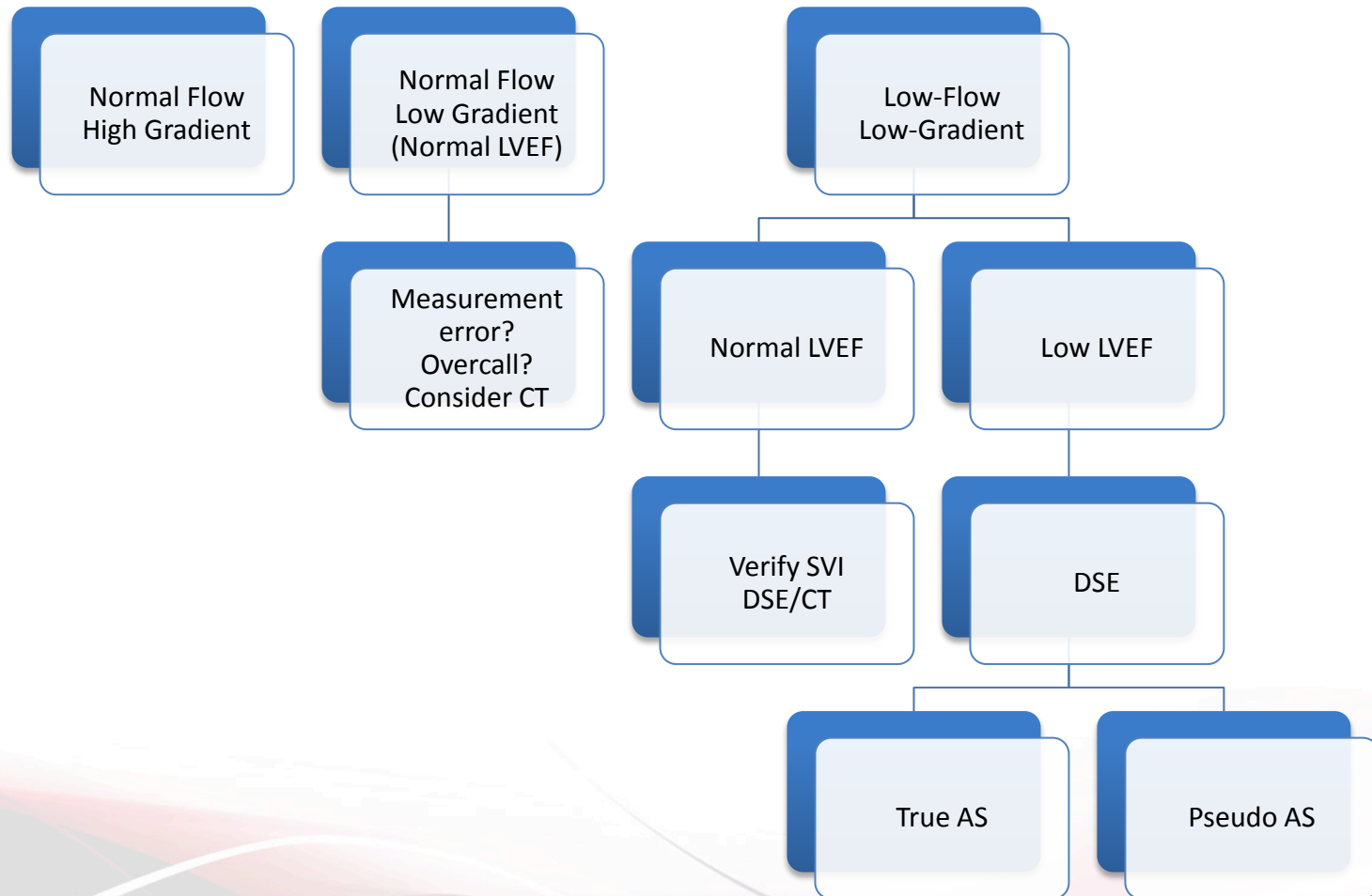
Table 2 Location of highest peak velocity according to aortic root angulation

Window	All patients	Aortic root < 115°	Aortic root ≥ 115°	P
N	100	31	69	—
Apical	39 (39%)	6 (19%)	33 (48%)	.005
RPS	50 (50%)	20 (65%)	30 (43%)	.05
SSN	6 (6%)	2 (6%)	4 (6%)	1.00
RSC	5 (5%)	3 (10%)	2 (3%)	.17

RSC, Right supraclavicular; SSN, suprasternal notch.

J Am Soc Echocardiogr 2015;28:780-5

Approach to AS



DSE Responses

	True AS	Pseudo AS
Peak Velocity	Increased	Minimal change
Mean PG	> 40 mmHg	Minimal change
Aortic valve area	< 0.2 cm ² increase	Increase \geq 0.3 cm ²

Importance of contractile reserve:

1. Increase in peak velocity \geq 0.6 m/s
2. Increase in stroke volume \geq 20%
3. Increase in MPG \geq 10 mmHg