

MITRAL STENOSIS (ASE)

	NORMAL	MILD	MOD	SEVERE
Mean ΔP (mmHg)		<5	5-10	>10
PHT(msec)	30-89	90-150	150-219	≥ 220
MVA (cm ²)	>2.5	1.5-2.5	1.0-1.5	<1.0

AORTIC STENOSIS (ASE)

	NORMAL	MILD	MOD	SEV
Peak V (m/sec)		2.6-2.9	3-3.9	≥ 4.0
Peak ΔP (mmHg)	8-20	20-39	40-69	≥ 70
Mean ΔP (mmHg)		<30* <20†	30-50* 20-40†	>50* >40†
AV area (cm ²)	3-4	1.6-2.9	1-1.5	<1.0
A/BSA (cm ² /M ²)		>0.85	0.6-0.85	<0.6
$\frac{TVI_{LVOT}}{TVI_{AV}}$ $\frac{V_{LVOT}}{V_{AV}}$ (velocity ratio)		>0.50	0.25-0.50	<0.25

Recom for Echo Assessment of Valve Stenosis EAE/ASE, JASE 2009;22:1-23 Baumgartner H, Hung J, et al. († = AHA/ACC guidelines, * = ESC guidelines)

MITRAL REGURGITATION (AHA/ASE)

	MILD	MODERATE	SEVERE
Jet Area/LA area	<20%	20-40%	>40%
Pulm vein flow	S NL	S Blunted	S Reversal
Jet Area (cm ²)	<4	4-10	≥10
Reg Vol (ml)	<30	30-59	≥60
Reg Fraction	<30%	30-49%	≥50%
EROA (cm ²)	<0.20	0.20-0.39	≥0.40
Vena contracta (mm)	<3	3-7	>7
<u>PISA Radius</u> (mm)†	<4	4-10	>10
<u>CWD signal strength</u>	Faint	Mod Dense	Very Dense

† = with Aliasing Velocity = 40cm/sec & $V_{MRpeak} \approx 500\text{cm/sec}$

TRICUSPID INSUFFICIENCY (ASE/ACC)

	MILD	MOD	SEVERE
CWD Jet Density	Soft	More dense	Very Dense
Jet Area (cm ²)	<5	5-10	>10
VC width (mm)			>7
Hepatic Venous flow	Sys Dom	Sys Blunting	Sys Reversal

AORTIC INSUFFICIENCY (ASE/ACC)

	MILD	MOD	SEVERE
Jet D/LVOT D	<25%	25-64%	>65%
Jet A/LVOT Area	<5%	5-59%	≥60%
PHT LVOT (msec)	>500	200-500	<200
Decay slope (m/s)	<2	2-3	>3
Desc Ao reversal	Early mild	Intermediate	Holodiastolic
Vena Contracta (mm)	<3	3-6	>6
EROA (cm ²)	<0.10	0.1-0.29	≥0.3
Reg Vol (ml)	< 30	30-59	≥60
Reg Fx (%)	20-30%	30-49%	≥50%

References:

1. Zoghbi WA, Enriquez-Sarano M, Foster E, Grayburn PA, Kraft CD, Levine RA, Nihoyannopoulos P, Otto CM, Quinones MA, Rakowski H, Stewart WJ, Waggoner A, Weissman NJ: Recommendations for evaluation of the severity of native valvular regurgitation with two-dimensional and Doppler echocardiography. J Am Soc Echocardiogr 2003; 16: 777-802
2. Baumgartner H, Hung J, Bermejo J, Chambers JB, Evangelista A, Griffin BP, Jung B, Otto CM, Pellikka PA, Quinones M: Echocardiographic assessment of valve stenosis: EAE/ASE recommendations for clinical practice. J Am Soc Echocardiogr 2009; 22: 1-23; quiz 101-2
3. Zoghbi WA et al Recommendations for Noninvasive Evaluation of Native Valvular Regurgitation: A Report from the American Society of Echocardiography Developed in Collaboration with the Society for Cardiovascular Magnetic Resonance. J Am Soc Echocardiogr. 2017 Apr; 30(4):303-371