

Supplementary table 1: Grading of tricuspid stenosis – summary of indices and limitations of techniques

TRICUSPID STENOSIS		
PARAMETER	SIGNIFICANT STENOSIS	LIMITATIONS
2D visualisation of the leaflets	<ul style="list-style-type: none"> - Immobile, retracted leaflets, diastolic doming and reduced separation at peak opening. - Extensive thickening of the leaflets 	<ul style="list-style-type: none"> - Sub-optimal acoustic windows - Subjectivity and variable correlation to haemodynamics
Right Atrial Size	<ul style="list-style-type: none"> - Moderate dilatation in the absence of ASD or pulmonary disease 	<ul style="list-style-type: none"> - Dilatation is not limited to stenosis e.g. atrial fibrillation and TR
IVC size	<ul style="list-style-type: none"> - > 21mm in the absence of ASD or pulmonary disease.[1] 	<ul style="list-style-type: none"> - Dilatation is not limited to stenosis e.g. TR
Mean Gradient	<ul style="list-style-type: none"> - $\geq 5\text{mmHg}$. [2] 	<ul style="list-style-type: none"> - Respiratory variation - Significant TR will cause falsely elevated values
Velocity Time Integral	<ul style="list-style-type: none"> - > 60cm. [3] 	<ul style="list-style-type: none"> - Respiratory variation - Significant TR will cause falsely elevated values
Pressure Half Time ($190/T_{1/2}$)	<ul style="list-style-type: none"> - $\geq 190\text{ms}$. [2] 	<ul style="list-style-type: none"> - Not been adequately validated - Difficult to obtain a deceleration time at higher heart rates
Tricuspid Valve Area (derived from continuity equation)	<ul style="list-style-type: none"> - $\leq 1.0\text{cm}^2$ [2] 	<ul style="list-style-type: none"> - Errors in calculation of stroke volume - Underestimates valve area in the presence of TR greater than mild

Colour Doppler	<ul style="list-style-type: none"> – Evidence of flow acceleration and large area of flow convergence within the RA – Narrow jet 	<ul style="list-style-type: none"> – PISA calculations are not recommended – Dependent on gain and pulse repetition frequency settings
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References

1. Augustine DX, Coates-Bradshaw LD, Willis J, Harkness A, Ring L, Grapsa J, et al. Echocardiographic assessment of pulmonary hypertension: A guideline protocol from the British Society of Echocardiography. *Echo Res Pract.* 2018;5(3):G11–24.
2. Nishimura RA, Otto CM, Bonow RO, Carabello BA, Erwin JP, Guyton RA, et al. 2014 AHA/ACC guideline for the management of patients with valvular heart disease: Executive summary: A report of the American College of Cardiology/American Heart Association task force on practice guidelines. *Circulation.* 2014;129(23):2440–92.
3. Baumgartner H, Hung J, Bermejo J, Chambers JB, Evangelista A, Griffin BP, et al. Echocardiographic assessment of valve stenosis: EAE/ASE recommendations for clinical practice. *Eur J Echocardiogr.* 2009;10(1):1–25.