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## Valvular Heart Disease

## REFERENCE VALUES OF TRICUSPID ANNULUS SIZE AND DYNAMICS BY TWO-DIMENSIONAL TRANSTHORACIC ECHOCARDIOGRAPHY IN 220 HEALTHY VOLUNTEERS

Poster Contributions

Hall C

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Session Title: Valvular Heart Disease: Functional Imaging

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**Background:** Tricuspid annulus (TA) size plays an important role in left-sided valve surgery planning. There is a paucity of data regarding TA normative values and its dynamic changes during cardiac cycle. Therefore, we assessed TA diameters and dynamics from standard transthoracic 2D echocardiography (2DE) views.

**Methods:** TA diameters were measured in 220 healthy volunteers ( $43 \pm 15$  years, 47% men) at 5 time points during cardiac cycle in apical 4-chamber (4CH), parasternal right ventricular inflow (PLAX) and parasternal short-axis view at aortic valve level (PSAX). Fractional shortening (FS) of all TA diameters was calculated as  $[(\text{max diameter} - \text{min diameter}) / \text{max diameter}]$ .

**Results:** Figure 1 shows reference values of TA diameters and their variability according to the 2DE view and the timing during cardiac cycle ( $p < .0001$  for all). In all views, max and min TA diameters were observed in early diastole and mid-systole, respectively. FS of TA was 24% in 4CH, 20% in PLAX, and 29% in SAX views. At multivariable linear regression analysis, age, gender, right atrial and ventricular volumes were independently correlated with TA diameters ( $p < 0.03$  for all), and accounted for 53% of the variance of maximal TA size in 4CH view.

**Conclusions:** This study provides reference values for TA diameters and dynamics by 2DE. Age, gender and right chambers size, as well as the 2DE view and measurement timing significantly influenced TA size in healthy individuals. Our data may help to identify TA enlargement by 2DE for surgical planning.

