

### **Non-invasive Prediction of Fluid Responsiveness in Infants Using Pleth Variability Index.**

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This prospective study assessed whether respiratory variations in velocity time integral, peak blood flow velocity and non-invasive pleth variability index are useful measurements in infants undergoing congenital heart surgery and determined threshold values that may help guide fluid administration.

In 27 infants receiving mechanical ventilation, of mean (SD) weight 10.4 (6.3) kg, 13 increased their stroke volume index  $\geq$  15% following a fluid challenge and 14 did not. The best area under the receiver operating characteristic curve was for the echocardiographic-derived variables respiratory variation in blood peak flow velocity (area under the ROC curve = 0.92;  $p = 0.0002$ ) and respiratory variation of the velocity time integral (area under the ROC curve = 0.84;  $p = 0.002$ ). The pleth variability index also predicted fluid responsiveness (area under the ROC curve = 0.79;  $p = 0.01$ ), in contrast to heart rate (area under the ROC curve = 0.53;  $p = 0.75$ ) and central venous pressure (area under the ROC curve = 0.57;  $p = 0.52$ ).