# [Myocardial strain abnormalities in fetuses with pulmonary atresia and intact ventricular septum.](https://www.ncbi.nlm.nih.gov/pubmed/30043402)

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**Take Home Points:**

* Myocardial strain is a technique to objectively assess fetal ventricular function compared with standard 2D echocardiography.
* Fetuses with pulmonary atresia/intact ventricular septum have decreased global longitudinal strain of both the left and right ventricles compared with controls
* Combining LV and RV global longitudinal strain assessments with other. echocardiographic parameters, listed in Table 3, may allow development of a scoring system to predict presence of RV dependent coronary circulation and may provide valuable prognostic information for prenatal counseling.



**Comment from Dr. Shelby White (Tucson AZ), section editor of Fetal Cardiology Journal Watch:** Pulmonary atresia with intact ventricular septum (PA/IVS) has a wide range of potential outcomes, based in part on the presence of abnormal communications between the right ventricle and the coronary arteries, most severely the presence of right ventricle-dependent coronary circulation (RVDCC). Myocardial strain analysis has been used in fetal echocardiography as a sensitive way to identify ventricular dysfunction compared with more subjective measures. This technique uses speckle-tracking to assess myocardial deformation and is reported as a negative number, with a lower absolute value indicating worse strain/worse ventricular function. This study sought to identify differences in myocardial strain in fetuses with PA/IVS compared with controls and in PA/IVS fetuses with and without RVDCC.

57 fetuses with PA/IVS were analyzed, mean gestational age of 26.3 + 5 weeks. Left ventricular global longitudinal strain (LV-GLS) was significantly decreased in PA/IVS compared with controls, *P* < 0.001. Right ventricular global longitudinal strain (RV-GLS) was also significantly decreased in PA/IVS, *P* < 0.0001; it was also more difficult to measure as only 42 fetuses had images sufficient for speckle tracking.

Among fetuses with PA/IVS, LV-GLS was decreased in those with RVDCC (Table 3). The only difference in outcomes that was identified was a decreased RV-GLS in fetuses that had single ventricle palliation compared with biventricular repair.

