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SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	**Annual Research & Review in Biology**
Manuscript Number:	**2013_ARRB_7229**
Title of the Manuscript:	**Initial insight to effect of exercise on maximum pressure in the aortic root using 2D fluid-structure interaction model**

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	**Authors' response to final evaluator's comments**
This manuscript describes a method to compute maximum pressure in the left ventricle as a function of heart rate during exercise. To compute this single number, this method requires: - echographic measurements of the aortic valve geometry, - measurement of brachial artery pressure (usually done invasively), - B-mode Doppler flow imaging. These measurements are then used along with a large amount of hypotheses, including: - many empirical correlations, - use of a 2D geometry to derive cardiac output from a FSI model. (While cardiac output could in fact be directly computed from the measurements used.) For obscure reasons, the numerically computed cardiac output is then converted to pressure and heart rate using more empirical correlations. Finally, these pressure and heart rates are plotted together to observe the effect of exercise on the derived pressures. This is a summary of what I understood of the methods, which are not clearly described. Furthermore, this seems to me a rather complex, ineffective and useless way of deriving one unique index from three measurements. To be of any use, the method needs to be validated against independent measurements of maximum left ventricular pressure. I personally doubt this validation will be positive, because of the numerous hypotheses underlying the method.	

Note: Anonymous Reviewer