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#### **SDI Review Form 1.6**

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
Type of the Article	Original Research Article

#### **General guideline for Peer Review process:**

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline)

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#### PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	The authors proposed a model to estimate the maximum pressure in the left ventricle (MPLV). MPLV is an important parameter to measure in different LV diseases. The proposed work is good attempt to estimate MPLV, however the full manuscript needs substantial improvement before considering for publication. Major changes are needed. Please put particular attention how you are using material from previous work and manuscript's structure.	
	<ol> <li>Introduction needs to be improved. Please organize properly the structure and references. A clear justification for FSI needs to be presented. What FSI do that we cannot get from clinical measurements or other analytical, electrical or numerical models.</li> <li>References must be carefully presented, cited and updated.</li> <li>Please rewrite aims paragraph. As presented, it seems that you already published this work on a previous journal (ref 27).</li> <li>Methods section is messy, and needs to be structured. A workflow diagram may help to better understand your model and clarify what are your inputs and outputs or from where they come. Authors must remind that readers may not be familiar with this numerical approach.</li> <li>Justify why a single volunteer was used, and please clearly show where his data are used. Why his Doppler measurements were not used as input in the</li> </ol>	

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numerical model in a patient-specific way?	
6) Please consider that patients with cardiopathies may	
present different hemodynamic and structural	
alterations, you may acknowledge this issue in the	
limitations.	
7) Justify the number of elements used in the model, as	
well as mesh basic characteristics, and better	
highlight why patient's specific data are not used.	
8) Results are presented as a collection of regression	
models. It is not well justified why authors are	
presenting them, what we learn from them, what is	
the relationship with the presented model and	
evaluated patient. Each presented result must	
contribute to understand how you are exploring your	
aims. In general presented results are insufficient.	
9) Please improve plot presentation and spelling.	
Legend in the figure must clearly explain the figure.	
Reader should not guess what is in the figure or from	
where it comes.	
10) Justify why LV stroke work or load parameters	
were not estimated?	
<ol><li>Study finding must be clear set and organized.</li></ol>	
Again, as you are presenting your work we got the	
impression that you already published this	
manuscript or parts of it.	
12) Section 4.2. can be shorter and better highlight the	
benefits of the proposed model. Authors claim that	
electrical-based models has not been used to	
estimate MPLV. However several works has been	
published in the last years using simple	
electrical/analytical models, numerical simulations,	
etc Please look for works from Damien Garcia	
from University of Montreal, Charles A Taylor from	
University of Stanford, Lyes Kadem from Corcordia	
University, and Patrick Segers from University of	

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	Amsterdam, just to mention some recent authors. 13) Please make a major review to your proposed manuscript before submission. Put special attention to you literature review and work structure.	
Minor REVISION comments		
	<ol> <li>Replace reference 14 for a paper. Such as Sutherland FJ et al. Clin Exp Pharmacol Physiol 2013, 30:867- 878, or appropiate reference. Please avoid referring vendors tech notes.</li> <li>FSI references may be reduced, please refer to a review FSI/numerical simulation paper or keep only must significant (ex. De Hart)</li> <li>Avoid unpublished or submitted references. Please only refer to accepted and published works.</li> <li>Please refers in a proper manner used software such as Matlab or Comsol.</li> </ol>	
<b>Optional/General</b> comments	A de novo or resubmission is required. Too many errors, inconsistencies and details are present in the actual manuscript.	

Note: Anonymous Reviewer