**Letter to the Editor - Response to Editor/Reviewer comments - Manuscript ID JoVE 51077R1**

Dear Dr Rasakham,

Thank you for the invitation to publish in the Journal of Visualized Experiments, and also for your comments dated 23 May 2013. Please find enclosed a brief description of the list of changes made, in accordance with your requests, to the manuscript entitled “Computerized dynamic posturography for postural control assessment in patients with intermittent claudication”. Please note, we have had trouble saving the Word file in *.docx* format with the (newly added) equations as inserted equations. In order to save the file, we have had to save it as a .*doc (Word 1997-2003) file* and the equations were automatically converted into images. We have therefore created a separate Word file in *.docx* with the equations only. We apologise for any inconvenience and thank you for your understanding. We hope the revisions now meet the strict requirements for publication in the Journal of Visualized Experiments.

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| **Editor’s Comment** | **Response/Revision/Rebuttal** |
| Page |
| 1. Formatting | The corrected document has been used and formatting has been retained |  |
| 1. Highlighting of text | The protocol has been highlighted as requested | Pages 4-7 |
| 1. Removal of copyright symbol | The symbol has been removed throughout. |  |
| 1. Editor’s recommendation to re-arrange abstract to focus on CDP then IC in PAD | The Introduction has been re-arranged to conform to the Editor’s request | Page 2 |

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| **Reviewer #1** | **Response/Revision/Rebuttal** |
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| 1. Short abstract | We have made the requested edits to the short abstract. | Line 41 |
| 1. Line 56 | Evaluation of interventions may be the aim of some studies, but if the NeuroCom is used as part of a diagnostic assessment, then our message is that early detection could lead to improved care. We have added such a statement before that initial sentence. | Lines 47-49 |
| 1. Introduction: Lines 69-85, Line 94 | We thank the Reviewer for their comments about explaining balance in IC patients earlier. However, upon consultation with the Editor, we have re-arranged the Abstract and the Introduction in such a way that the focus is first on CDP, and then on IC-PAD, and highlight that CDP can be used as one of several diagnostic tools for this disease. | Page 3 |
| 1. Introduction: Line 98 | We have specified that these tests are part of the CDP protocol. | Page 3 |
| 1. Methods: Lines 117-138 | We have clarified that ABPI detects the presence of PAD with IC in the Introduction. We have also specified that ABPI is not necessary with the use of CDP in asymptomatic patients, but that it is an important sub-component of a medical assessment in patients with suspected peripheral arterial disease with intermittent claudication and where movement and balance are adversely affected. | Page 3 |
| 1. Methods: Line 140 | We have replaced the previous sub-heading with ‘Equipment set-up’ | Page 4 |
| 1. Methods: Line 169-171 | Virtually all studies that use the EquiTest have participants standing barefoot, as opposed to wearing shoes. Although the NeuroCom advocates performing the tests barefoot, it does not specifically state why or that it must be adhered to (e.g., in the case of lower limb amputees, this wouldn’t be possible). However, performing the tests barefoot is a better way of standardising between participants, as shoes differ according to sole thickness, flexibility, and stiffness (which may alter somatosensory input), while shoes with heels will cause the foot to be plantarflexed. |  |
| 1. Methods: Lines 179-182 | We have included information about the rotational axes of the dual force plate system (support surface) | Pages 4 & 5 |
| 1. Methods: Line 202 | The term orientationally has been removed throughout |  |
| 1. Methods: Lines 215-217 | The term ‘fall’ has been removed in the Discussion, as ‘loss of balance’ is more accurate and appropriate. |  |
| 1. Methods: Lines 232-233 | The term magnitude refers to the translational displacement. In order to avoid repetition of the word ‘translation’, we have opted for ‘horizontal displacement of the support surface’. For the reviewer’s information, the velocity of the support surface is constant and scaled according to the person’s height. | Page 7 |
| 1. Methods: Line 255-257 | This is a fair point, as not all operators are qualified in exercise training or medical practice. However, if a patient/participant were to score poorly, then we would encourage the person seeks further investigations/medical advice. We have indicated the latter in the revised manuscript. | Bottom page 7 |
| 1. Results: Lines 279-288 | We have added very brief details about the ankle vs. hip vs. stepping strategies to guide the reader | Page 8 |
| 1. Discussion – general comment | We acknowledge that the link between CDP and IC patients is not made very frequently in this section. However, we have followed the journal’s guidelines and have focussed the Discussion on: the critical steps, limitations, possible modifications and trouble-shooting, future applications or directions after mastering this technique, and significance of the technique with respect to existing methods, etc... In consultation with the journal Editor, we have not altered this section as it conforms with the journal’s requirements | No change |
| 1. Discussion – Terminology | The term ‘orientationally’ has been removed in the Discussion | Page 10 |
| 1. Discussion – Implications | Please see our response to point 18 above. |  |
| 1. Discussion – All forces are combined | The centre of force represents the single point where all the forces exerted by the legs onto the support surface are positioned. During postural responses, the COF position changes rapidly in response to the change in forces exerted by the legs and it represents the instantaneous muscle effort about the ankle joint. | Top page 11 |
| 1. Discussion – consistency of wording | The word ‘fall’ has been removed. | Page 11 |
| 1. Discussion – References | Two references have been added to support this statement | References [8,18] |
| 1. Discussion – Many | Thank you for spotting this typo. |  |

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| **Reviewer #3** | **Response/Revision/Rebuttal** |
| Page |
| 1. Short abstract – objective technology | We have replaced the word ‘technology’ with ‘method’ | Page 2 |
| 1. Long abstract – ‘EquiTest tests’ | Thank you for spotting this repetition. We have replaced the word ‘tests’ with ‘determines’ | Page 2 |
| 1. Introduction – reconsider whilst | In this sentence we are highlighting some of the limitations to the Berg and Tinetti tests and we feel the sentence structure reflects our argument accurately. | No change |
| 1. Introduction – Line 84-85 | We have replaced ‘the effective design of appropriate interventions’ with ‘the effective prevention of falls’ and have provided a reference | Page 3 |
| 1. Introduction – Line 93 | We have provided information about the ankle, hip and stepping strategies in the Results section, as per Reviewer #1. Please see comment 17 above. | Page 8 |
| 1. Methods – Line 149 | We have made corrections to read ‘about the X/Y axis’ in two instances | Page 4 |
| 1. Methods – Lines 161-163 | We have indicated that the display screen can be turned on or off and, if it is turned on, it will provide the participant with visual biofeedback. We believe the differences between on and off are clear and it is up to the investigator/operator to decide whether their participant should see the visual biofeedback/scores. We have included a brief statement to describe this. | Page 5 |
| 1. Methods – Lines 183-184 | The S, M, and T ranges refer to height-appropriate lines for foot placement. They guide correct foot placement, such that when the feet are correctly positioned, they should be equidistant laterally from the center line (Y axis). We have added some more detail, as also requested by Reviewer #1. | Page 5 |
| 1. Methods – Lines 219-223 | We have included quite detailed information about how the different SOT variables are computed. | Pages 6-7 |
| 1. Methods – Line 237 | In fact the sequence of all tests (SOT and MCT) can be determined/modified by the operator, although in most cases an operator would follow the default sequence. We have removed this section of the sentence as it may cause unnecessary confusion. | Page 7 |
| 1. Methods – Lines 241-247 | We have included supplementary information about the calculation of shear and vertical forces and the MCT variables | Pages 4 & 7 |
| 1. Methods – Lines 255-257 | The EquiTest does not currently have a database according to different pathologies. We believe it is up to the practitioner/investigator to discuss appropriate balance training programmes with their patients. It is beyond the scope of this paper to make such recommendations. The interpretation of the findings is objective, in that, irrespective of the type of pathology, if a participant approaches their limits of stability under challenging postural conditions, they are at risk of falling. | No change |
| 1. Figure 2 | We have included more information about the axes and shaded area in the Figure caption | Page 9 |
| 1. Results – large vs. small values | We have indicated that the large values refer to both axes. | Page 8 |
| 1. Results - strategy analysis score | We have specified that low values indicate more reliance on hip strategy by generating greater shear forces | Page 8 |
| 1. Results – Lines 289-292 | We have related the symbols of the COG alignment with the red bars on the SOT and reliance on hip strategy as evidenced by the strategy scores. | Page 8 |
| 1. Figure 3 | We have included more information about the shaded area in the Figure caption | Page 9 |
| 1. Results – Medium and Large | Yes, medium and large relate to the (M) and (L) on the horizontal axis in Figure 3B | Page 9 |
| 1. Figure titles | We have specified the data are representative of one 66-year old participant with intermittent claudication in the captions for Figures 2 and 3 | Page 9 |
| 1. Discussion | Please see our response to comment 18 | No change |

Yours sincerely,

Dr Natalie Vanicek (on behalf of all authors)