

March 29, 2019

Re: Submission of Method Article for Consideration for Publication in the Journal of Visualized Experiments

Dear Editor,

Please accept the enclosed manuscript entitled "Experimental Methods to Study Human Postural Control" for consideration for publication in the Journal of Visualized Experiments. All authors made significant contributions to the manuscript, and have read and concur with the content of the final submitted manuscript. The material within has not and will not be submitted for publication elsewhere.

In this article, we provided the experimental methods for the study of human postural control. The introduction deals with the complexity of the postural control and the many sub-systems involved in the task, demonstrating the need to perform systematic experimental and analytical methods to study the human postural control. We then explained the requirements of an experimental apparatus to perform perturbed standing experiments using mechanical and/or visual perturbations. Subsequently, we provide a step-by-step procedure to prepare the human subjects for the standing experiments; this includes the preparation for measurement of electromyography, kinematic, and kinetics during standing and performing appropriate experiments. The next part deals with the design of appropriate mechanical and visual perturbations. Finally, a brief overview of the identification methods for the postural control is given, followed by two examples: 1- Non-parametric identification of the postural control in response to visual perturbations; 2- Parametric identification of ankle intrinsic stiffness in standing using mechanical perturbations. Finally, the representative results for these two examples are shown to demonstrate the utility of the experimental and analytical approach.

We thank you in advance for your consideration of our manuscript, and look forward to your response.

Yours Sincerely,



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