Author's response to reviews

**Title:** Vestibular asymmetry predicts falls among elderly patients with multi-sensory dizziness

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**Author's response to reviews:** see over
Dear Editor

Our manuscript *Vestibular asymmetry predicts falls among elderly patients with multisensory dizziness*, has been resubmitted online. We thank the reviewers for their time and their effort to help us improve the manuscript. Please find our specific changes listed below.

Please consider this manuscript for publication in *BMC Geriatrics*

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Editors comments
Author’s contribution is added after competing interests.
We have made an effort to improve the English in the manuscript and the manuscript has been seen by an English, native speaking, colleague.
The structure of the manuscript is checked with the instructions on the web site and we now hope that we have been able to properly prepare the manuscript. We are sorry for the inconvenience.
We have not added any acknowledgments.
The legend to the figure is placed after the reference list and the figure is placed in a separate file.
The figure is cropped as closely as possible.

Reviewer Jorunn Helbostad.

1. We have added a paragraph in the discussion about not assessing vision.
2. Inclusion- and exclusion criteria are added in the method and the relevance of the diagnosis of multisensory dizziness is elucidated in the discussion. In the flow-chart, reasons for exclusion are given.
3. We have made a power calculation, showing that a sample size of 60 persons was necessary if the power was set to 80% and the level of significance at 0.05. The study includes 55 persons and gave statistical significant results. We therefore do not believe that the study is under-powered. We have added a sentence in discussion about the small sample size.
4. The background includes a sentence about dizziness being a risk factor for falls as well as a reference (3).
5. We have made a power calculation, showing that a sample size of 60 persons was necessary if the power was set to 80% and the level of significance at 0.05. The study includes 55 persons and gave statistical significant results. We therefore do not believe that the study is under-powered. We have added a sentence in discussion about the small sample size.

Background
“Consequently” is removed in background, line 4.
“age” is changed to “high age”, line 7 in the background.

Method
“Sensory status” is changed to “vibration sense” throughout the manuscript. Criteria for considering the test positive are added in the method.
More information about clinical balance measures are added, as requested.
More information about the OASIS system is now provided in the method.
Non-participants are described in the flow-chart. One person did not want to participate and 6 persons had other causes of dizziness than multi-sensory. If the editor finds the prescription to be insufficient, we will of course add more information in the text.

Discussion
A sentence about falls recall by means of telephone calls compared to falls calendar is now added to the discussion, with reference.
The sentence starting with “The epidemiology..” is removed.
Paragraph starting with “Dizziness can also”: Here, we wanted to specify that our study population is similar to others, which is important for the generalizability of the findings. We have therefore not changed the paragraph. However, if the editor finds it appropriate, we will of course remove the paragraph.
Thank You for making us aware of the inappropriateness of mentioning Dix-Hallpike in the discussion, the sentence is revised.
Conclusion
The conclusion is revised according to the reviewer’s remark, even if it was 6 patients who had fallen three times or more, not three.

Tables
Since age is displayed by median, we have added interquartile range for age in table 1 (as requested by reviewer Jasmine Menant).
Interquartile range is now displayed in table 2.

We agree with the reviewer that the article is about prediction of falls and thank here for making us aware of our inconsistency. We have changed the concept throughout the manuscript.

Reviewer Jasmine Menant
Methods
1. Inclusion- and exclusion criteria are now presented for the study population.
2. We have added a sentence about assessment with the Dix-Hallpike maneuver to exclude patients with BPPV.
3. Inter quartile range for age is now presented in the text and in the table.
4. We have added a paragraph in the discussion about our inability to measure vision.
5. “Sensory status” is replaced with “vibration sense” throughout the manuscript.
6. More information about figure of eight and walking heel to toe is added.
8. Falls are specified according to Lamb’s definition.
9. We had designed the study planning to use OR since the study also is a case-control study and the outcome binary. We, furthermore, also estimated that falls would be rather unusual, based on earlier research (Hansson EE, Mansson NO, Ringsberg KA, Hakansson A. Falls among dizzy patients in primary healthcare: an intervention study with control group. International journal of rehabilitation research Internationale Zeitschrift fur Rehabilitationsforschung. 2008 Mar;31(1):51-7. PubMed PMID: 18277204). Therof our choice of the pre-planned assessment with OR.

Tables
1. Interquartile range is now displayed for all the measures in table 1 and 2.
2. We now specify that it is “steps outside the line” that is measured in figure of eight and walking heel to toe.
3. In table 2, all measures that are mm/sec is now defined as “sway velocity”.
4. The double inclusion of mediolateral sway and anteriorposterior sway in table 2 is removed.