## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (http://bmjopen.bmj.com/site/about/resources/checklist.pdf) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

## ARTICLE DETAILS

| TITLE (PROVISIONAL) | Bi-modal stimulation in the treatment of tinnitus: a study protocol for<br>an exploratory trial to optimise stimulation parameters and patient |
|---------------------|--|
| AUTHORS             | subtyping<br>D'Arcy, Shona; Hamilton, Caroline; Hughes, Stephen; Hall, Deborah;<br>Vanneste, Sven; Langguth, Berthold; Conlon, Brendan         |

# **VERSION 1 – REVIEW**

| REVIEWER        | Richter Kneginja                                   |
|-----------------|--|
|                 | University Clinic for Psychiatry and Psychotherapy |
|                 | Paracelsus Medical University Nureberg Germany     |
| REVIEW RETURNED | 28-Jul-2017  |

| GENERAL COMMENTS | Your paper is very innovative, original and important.<br>Yet, I have few minor remarks:   |
|------------------|--|
|                  | <ol> <li>Exclusion criteria-please include suicidality and psychomotor<br/>Agitation.</li> <li>Is it an personalized Approach in the Treatment of Tinnitus?If yes-<br/>please include it in the Discussion.</li> </ol> |
|                  | 3. Can You make a short describtion of other Neuromodulation<br>Methods<br>as rTMS and Neurofeedback in the Introduction?  |

| REVIEWER        | Prof YL Lo                      |
|-----------------|---------------------------------|
|                 | National Neuroscience Institute |
|                 | Singapore                       |
|                 | Nil                             |
| REVIEW RETURNED | 01-Aug-2017                     |

| GENERAL COMMENTS | A generally well written protocol on a novel medical device  |
|------------------|--|
|                  | Suggest:   |
|                  | <ol> <li>More background information with regards to the rationale of<br/>using the device</li> <li>A chart diagram on the protocol</li> </ol> |

# **VERSION 1 – AUTHOR RESPONSE**

In response to Review 1:

1.Exclusion criteria-please include suicidality and psycho-motor Agitation.

A.1 In many cases, patients that exhibit psycho-motor agitation symptoms would be excluded under the criteria: "neurological conditions that may lead to loss of consciousness (e.g. epilepsy), current prescription of any drug for a central nervous system". Patients exhibiting psycho-motor agitation symptoms who were not excluded under this criteria, would otherwise be excluded at the PI's discretion under the criteria: "The Principal Investigator does not deem the candidate to be suitable for the study for other reasons not listed above."

In most cases, patients exhibiting suicidality would be excluded on the basis of having a very high THI and / or STAI score. Patients exhibiting suicidality who were not excluded due to high THI or STAI scores, would otherwise be excluded at the PI's discretion under the criteria: "The Principal Investigator does not deem the candidate to be suitable for the study for other reasons not listed above."

2. Is it an personalized Approach in the Treatment of Tinnitus? If yes-please include it in the Discussion.

A.2 The auditory stimulation is already personalised as per page 8 line 1. As outlined in the discussion further 'personalisation' of the treatment will be informed by the outcomes of this study, that is to say if a specific patient subtype demonstrates enhances responsiveness to a certain set of stimulation parameters, further targeting based on patient subtyping may be possible. That being said, the Reviewer does highlight a potential ambiguity in our discussion and we have changed 'personalised' to 'targeted', we hope this sufficiently addresses this.

3. Can You make a short describtion of other Neuromodulation Methods as rTMS and Neurofeedback in the Introduction?

A.3 a short paragraph has been added to the third paragraph of page 1 and references 8-11 added to bibliography.

In response to Review 2:

1. More background information with regards to the rationale of using the device

A.1 The rationale for using this device is that this is a follow on from the pilot study by Hamilton et al. The pilot study and CE marking have demonstrated safety and feasibility of this device. The study described in the manuscript is the first step to evaluating the efficacy of this treatment/device as described in the Hypothesis and Aims section.

### 2. A chart diagram on the protocol

A.2 Figure 1 is the flow diagram of the protocol, this diagram is in the CONSORT format as the protocol is described in accordance to the CONSORT protocol guidelines. Combined with the Schedule of Assessments (Table 2) we feel an additional diagram would be repetition of the information contained in these 2 figures.

Again we would like to sincerely thank the reviewers for taking the time to review our manuscript and hope that our responses satisfy both the reviewers and editors.

### VERSION 2 – REVIEW

| REVIEWER        | Richter Kneginja                                   |
|-----------------|--|
|                 | University Clinic for Psychiatry and Psychotherapy |
|                 | Paracelsus Medical University Nuremberg, Germany   |
| REVIEW RETURNED | 15-Aug-2017  |

| GENERAL COMMENTS | Thank You for the Revision of the Manuscript. |
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