Author’s response to reviews

Title: EFFECTS OF WHOLE-BODY ELECTROMYOSTIMULATION ON HEALTH AND PERFORMANCE: SYSTEMATIC REVIEW

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Author’s response to reviews:

As required, all the reviewers' concerns regarding this systematic review, have been addressed. The cover letter presented includes the amendments made after each of the queries with a reference to the lines in the updated manuscript.

Note from the authors:
Modifications suggested by the reviewers: changes underlined in yellow color in the manuscript.
Update of the review: changes underlined in blue color in the manuscript.

Reviewer’s reports:

FATEMEH Heydarpour (Reviewer 1):

Just one minor comment:
In line 411:
If this (22.42±12.79) is mean ±SD, why do you write percent (12.79%)?
Like above in line 419, line 420, 421, and 422.

After the reviewer’s comments, a research of the data was made in the original resources and its veracity was checked. They were corrected when necessary.

The mentioned data in line 411 (22.42±12.79) belongs to Filipovic et al. 2016 (27), and it appears in section “Effects on strength and performance”, page 645. The authors reported the mean percentage change of the group with its SD. The data seems correct. In the updated manuscript this data is located in line 426.
The mentioned data in line 419 (+10±7% and +15±11%) was extracted from Kemmler et al. 2012 (25), and it appears in section “3.2 Training and Electromyostimulation (TEST-II) Study: Effect of WB-EMS in Untrained Elderly Male with the Metabolic Syndrome”, page 4. The authors reported the mean percentage change of the group with its SD. The data seems correct. In the updated manuscript this is located in line 434-35.

The mentioned data in line 420 (+3±4% and -0.5±6%), was extracted from Kemmler et al. 2012 (25), and it appears in section “3.2 Training and Electromyostimulation (TEST-II) Study: Effect of WB-EMS in Untrained Elderly Male with the Metabolic Syndrome”, page 4. The authors reported the mean percentage change of the group with its SD. The data seems correct. In the updated manuscript this is located in line 436.

The mentioned data in line 421 (+9.1±11.2%) and line 422 (+1.0±8.1%), was extracted from Kemmler et al. 2013 (16), and it appears in section “Experimental endpoints”, page 1360. The authors reported the mean percentage change of the group with its SD. The data seem correct. In the updated manuscript this is located in line 426 and 437 respectively.

SAKINEH Shab-Bidar (Reviewer 2):

This systematic review has been conducted to determine the effects produced by WB-EMS. Authors reported that the scarce amount of scientific evidence found does not allow definitive conclusions about its effects. The major issue is that when there are no enough studies, so conducting systematic review is meaningless. The other major issue is that it is not clear that which study design has been included and the studied population is not exactly defined.

- Full search strategy with details (MeSh terms and Text words) in a Table should be provided

Full search strategy details are shown in a table below:

Keywords and Boolean terms
{EMS OR whole body electromyostimulation OR global body electrical stimulation} AND {Fitness OR Hormonal OR Power OR Bone mineral density OR Body composition OR Endurance OR Strength OR Obesity}.

Mesh terms (with URL of the results)
- EMS: https://www.ncbi.nlm.nih.gov/mesh/?term=EMS 9 results (none matched with the aim of the review)
- Whole body electromyostimulation: https://www.ncbi.nlm.nih.gov/mesh/?term=whole+body+electromyostimulation 5 results (none matched with the aim of the review)
- Global body electromyostimulation https://www.ncbi.nlm.nih.gov/mesh/?term=global+body+electromyostimulation No items found
- Global body electrical stimulation: https://www.ncbi.nlm.nih.gov/mesh/?term=global+body+electrical+stimulation No items found
- Global body electrical myostimulation https://www.ncbi.nlm.nih.gov/mesh/?term=global+body+electrical+myostimulation No items found
“The acronym “EMS”, and the words “whole body electromyostimulation” and “global body electrical stimulation” were used in order to find appropriate MESH terms, but none of the results were related with the aim of the study (see table above)”. This sentence has been added in order to improve the Search strategy and data sources section’s comprehension (line 116-118).

- Specify which type of study design was considered in this study

Lines 132-135 have been rewritten in order to clarify the type of study design considered in this study

- clarify PICOS in the text or in a Box

A box at the end of inclusion/exclusion criteria section has been added as suggested (line 137). The Tables numeration has also been corrected.

- Indicate if a review protocol exists for this meta-analysis

A review protocol of this systematic review, registered in PROSPERO database or similar, does not exist but, as noted in line 107, the PRISMA statement was followed in order to proceed with the study. The checklist with detailed items of the statement was sent via e-mail as requested by the editors.

- Please explain why authors did not perform meta-analysis.

The heterogeneity of the data (different dependent variables measured and groups of populations studied) allows to make a systematic review but does not allow to perform a meta-analysis.

As the authors try to explain in the background section, this systematic review could be appropriate in order to clarify the level of evidence around the effectiveness of this training method that is achieving more and more popularity among the fitness centers, sports facilities and even beauty centers that apply this technology.

- Manuscript needs serious English editing

Please, find attached a certificate of the English revision of this paper performed by a professional department of American Journal Experts (www.aje.com).

Thank you for your review, I trust the changes made will meet your expectations. Please, do not hesitate to contact me if you have any questions or queries.

Regards,

The authors