Author’s response to reviews

Title: The effects of hypoxia on muscle deoxygenation and recruitment in the flexor digitorum superficialis during submaximal intermittent handgrip exercise

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To the Editor and the Reviewers

POINT-BY-POINT RESPONSE

SSMR-D-19-00070R1 - The effects of hypoxia on muscle deoxygenation and recruitment in the flexor digitorum superficialis during submaximal intermittent handgrip exercise

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BMC Sports Science, Medicine and Rehabilitation
EDITOR COMMENTS:

Include the authors’ approval of the manuscript on authors contributions –

Response: was addressed for Jan 2020 submission; authors were again asked to confirm the most recent changes and all agreed.

State the role of the funding body on the study

Response: The funding body (Ontario Physiotherapy Association: Central Toronto District) provided a student research grant to aid in covering some of the costs associated with the study, which covered some supplies and poster presentation costs. The funders had no role in the design of the study, collection analysis or interpretation of the data or in writing the manuscript.

Move Abbreviations after Conclusions section

Response:– completed as requested

Provide figure legends after the reference section

Response:– completed as requested

Remove duplicate figures embedded on the manuscript

Response: – All figures been removed from the manuscript and are included as JPEG or TIFF

REVIEWER REPORTS:

Tadej Debevec (Reviewer 1): The authors have thoroughly and successfully addressed all my queries. Well done and congrats on a nice contribution to the field.

Response: Thank-you very much. Your thoughtful review facilitating improvements in the presentation and interpretation of the paper.
Stéphane Perrey, PhD (Reviewer 2): The revised manuscript took into account all suggested comments highlighted in the first review, except one that deserves discussion.

Although FIO2 had no significant effect on endurance time and NIRS patterns based on modified beer lambert law, only SmO2 (TOI) in hypoxia differed from normoxia since the beginning of the task. This means that hypoxia has an influence on muscle oxygenation in resting only; exercise induced thereafter the same "stress" (=dynamics) in both FIO2 conditions. Altogether, these findings are not so new, except the muscle mass investigated here.

Authors should comment on all and especially on the only variable (index assessed with spatial resolved spectroscopy) that was modulated significantly in resting conditions since exercise produced a similar time course for NIRS variables.

Response: This is more explicitly stated in the first and last paragraphs of the Discussion. Although some of these data paralleled findings in other studies, theses other studies were not cited because of differences in protocols.

Minor suggestions to address:
-Conclusion: anaerobiosis to correct page 16
Response: corrected;

same comment page 15 (Line 40) -References and text: Perrey not Perry to correct
Response: corrected in text and in the reference list.

Methods: what was the value of DPF used for some NIRS variables (unit of uM)?
Response: Please see Near-infrared spectroscopy section in the Methods. The DPF was set at 4.

Declarations
Ethics approval and consent to participate
Response: completed in 4Jan2020 submission

Consent to publish
Response: completed in 4Jan2020 submission

Availability of data and materials
Response: completed in 4Jan2020 submission

Competing interests
Response: completed in 4Jan2020 submission

Funding
Response: completed in 4Jan2020 submission

Authors' Contributions
Response: completed in 4Jan2020 submission

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Response: completed in 4Jan2020 submission

Please let me know if your require anything else to complete this manuscript submission.

Best regards,
W. Darlene Reid, PT, PhD
Professor