Author's response to reviews

Title: What is the ideal dose and power output of low-level laser therapy (810 nm) on muscle performance and post-exercise recovery? Study protocol for a double-blind randomized placebo-controlled trial

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Author's response to reviews: see over
Dear Editor in chief

Skeletal muscle fatigue and recovery is a novel area of research in phototherapy. Recent studies with low-level laser therapy (LLLT) and light emitting diode therapy (LEDT) have shown positive results delaying skeletal muscle fatigue in both animals and humans (Leal Junior et al. 2008, Leal Junior et al. 2009a, Leal Junior et al. 2009c, Leal Junior et al. 2010a, Leal Junior et al. 2010b, de Almeida et al. 2011, de Almeida et al. 2012, De Marchi et al. 2012) and improving the status of biochemical markers related to skeletal muscle recovery (Leal Junior et al. 2009b, Leal Junior et al. 2009c, Leal Junior et al. 2009d, Leal Junior et al. 2010a, Leal Junior et al. 2010b, de Almeida et al. 2011, De Marchi et al. 2012) when these therapies were applied before exercise.

In this novel area, our research group has taken a leading role. A few animal studies have appeared which largely confirm our findings (Xu et al. 2008, Sussai et al. 2010), but other research groups struggle to identify optimal doses and break the code of effectiveness in human studies (Gorgey et al. 2008).

With this perspective in mind phototherapy seems to be a non-invasive and promising option in improvement muscle performance, if it enables a delay in development of fatigue. Therefore, the aim of our study is to identify the best dose and the best power output of LLLT with 810 nm wavelength to enhance exercise performance and recovery.

I hope that our manuscript is suitable to be submitted to this very respectable journal.

Sincerely,

Ernesto Cesar Pinto Leal-Junior, Prof. Ph.D., PT and
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REFERENCES

decreases skeletal muscle damage and modulates mRNA expression of COX-1 and COX-2 in a dose-dependent manner. Photochem Photobiol 87: 1159-63.


