**Corrigendum to Cognitive fatigue effects on physical performance: a systematic review and meta-analysis**

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Following publication of the article entitled “Cognitive fatigue effects on physical performance: a systematic review and meta-analysis” [1], it came to our attention that when calculating variance in effect sizes, we had inadvertently used a formula designed for independent samples while our study only examined within subject designs. Consequently we have re-analysed the data using an equation for paired samples [2], Vd = [1/n + (d2/2n)]\*[2(1-r)], where Vd is variance in the effect size as measured by Cohen’s d, n is the number of pairs and r is the estimated correlation between pairs. We estimated r as being 0.85 based on literature examining the test re-test reliability coefficients between performances on tests similar to those used in the studies examined [3-6]. The pooled effect size as measured by Hedges’ g and the 95% confidence intervals (CI) of g (g = -0.25, SE = 0.06, CI -0.37 to -0.13, p < .001) only differ marginally from those presented in the article (g = -0.27, SE = 0.12, CI -0.- 0.49 to -0.04, p < .05) The re-analysed measures of heterogeneity (Q(10) = 10.45, p > .10, T2 <.01, I2 = .04) also do not differ much from those presented in the article (Q(10) = 2.78, p > .10. T2 < .01, I2 < .01).

 The authors apologize for this mistake but the re-analysis does not affect the scientific discussion and conclusions of the article in any way.

References

1. T. McMorris, M. Barwood, B.J. Hale, M. Dicks, J. Corbett. Cognitive fatigue effects on physical performance: a systematic review and meta-analysis. Physiol. Behav. 188 (2018) 103-107.

2. M. Borenstein, L.V. Hedges, J.P.T. Higgins, H.R. Rothstein. Introduction to meta-analysis. John Wiley and Sons: Chichester; 2009.

3. A.F. [Alghannam,](https://www.ncbi.nlm.nih.gov/pubmed/?term=Alghannam%20AF%5BAuthor%5D&cauthor=true&cauthor_uid=26669250) D. [Jedrzejewski,](https://www.ncbi.nlm.nih.gov/pubmed/?term=Jedrzejewski%20D%5BAuthor%5D&cauthor=true&cauthor_uid=26669250) M. [Tweddle,](https://www.ncbi.nlm.nih.gov/pubmed/?term=Tweddle%20M%5BAuthor%5D&cauthor=true&cauthor_uid=26669250) H. [Gribble,](https://www.ncbi.nlm.nih.gov/pubmed/?term=Gribble%20H%5BAuthor%5D&cauthor=true&cauthor_uid=26669250)  J.L. [Bilzon, J.A.](https://www.ncbi.nlm.nih.gov/pubmed/?term=Bilzon%20JL%5BAuthor%5D&cauthor=true&cauthor_uid=26669250) [Betts.](https://www.ncbi.nlm.nih.gov/pubmed/?term=Betts%20JA%5BAuthor%5D&cauthor=true&cauthor_uid=26669250) Reliability of time to exhaustion treadmill running as a measure of human endurance capacity. [Int. J. Sports Med.](https://www.ncbi.nlm.nih.gov/pubmed?term=((Alghannam%20AF%5BAuthor%5D)%20AND%20reliability)%20AND%20running) 37 (2016) 219-223.

4. J. Fisher, T. Clark, K. Newman-Judd, J. Arnold, J. Steele.Intra-subject variability of 5 km time trial performance completed by competitive trained runners. J. Hum. Kinet. 57 (2017) 139-146.

5. V. Mathiowetz, K. Weber, G. Volland, N. Kashman, Reliability and validity of grip and pinch strength evaluations. J. Hand Surg. 9A (1984) 222-226,

6. V.P. Costa, D. G. Matos, L.C. Pertence, J.A.N. Martins, J.R.P. Lima. Reproducibility of cycling time to exhaustion at VO2 Max in competitive cyclists. J.E.P.online. 14 (2011) 28-34.