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Pitfalls in the Use of Allometry in Accounting for Differences in Body Mass in Relation to Maximal Oxygen Uptake in Trained Athletes

Reply from authors:

Dear Editor,

We thank the author of the letter to the editor for his interest in our study.¹

We are enlightened and thank the author for his comments.

The aim of the study was to compare the use of allometric scaling versus ratio-scaling in accounting for differences in body mass in relation to VO_{2max} in male and female athletes.

It was suggested that the mass exponent generated for female athletes is the suspect. The authors revisited and re-computed the data set for the female athletes and confirm the following outcomes:

- For the female athletes, the correlation between VO_{2max} and body mass (BM) was $r = 0.30$ ($P > 0.05$), affirming that in there was no relationship between VO_{2max} and body mass.
- We acknowledge that consequently, the correlation between the ratio-scaled VO_{2max} in mL/kg BM/min, and body mass, i.e. $r = 0.71$ ($P < 0.05$) is possibly a statistical artefact.²
- The body mass exponent for the female athletes should read as $b = 0.24$, 95% CI, -0.10 to 0.56)

We agree that there are pitfalls in the use of allometry³ and we thank the author for bringing this point to the fore.

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