



# Comparison against baseline in randomised control trials (again)

To the Editor:

I read with interest the article by DIAS-JÚNIOR *et al.* [1] describing a randomised controlled trial of a weight loss programme for obese asthmatics. I was, however, disappointed to see that the results were published as comparisons against baseline. This approach is biased and potentially misleading, as has been eloquently outlined by BLAND and ALTMAN [2]: their discussion includes the instructive example of a study that appeared to support the use of an over-the-counter anti-ageing cream [3] and thus created a good deal of misleading publicity. I strongly encourage the *European Respiratory Journal* to insist that randomised trials report differences between groups rather than within groups in future.



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Randomised trials should report differences between groups rather than within groups

<http://ow.ly/zVHbv>

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Conflict of interest: None declared.

## References

- 1 Dias-Júnior SA, Reis M, de Carvalho-Pinto RM, *et al.* Effects of weight loss on asthma control in obese patients with severe asthma. *Eur Respir J* 2014; 43: 1368–1377.
- 2 Bland JM, Altman DG. Comparisons against baseline within randomised groups are often used and can be highly misleading. *Trials* 2011; 12: 264.
- 3 Watson RE, Ogden S, Cotterell LF, *et al.* Effects of a cosmetic “anti-ageing” product improves photoaged skin. *Br J Dermatol* 2009; 161: 419–426.

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From the authors:

We thank J.D. Blakey for his interest in our article [1]. In the paper he cited, BLAND and ALTMAN [2] criticise randomised studies in which baseline is compared with a final measurement separately for each group through paired t-tests. By using simulations, they concluded that the use of paired tests against baseline separately for each group is conceptually wrong and statistically invalid. We agree that this is not a proper approach. However, this was not the approach adopted in our study. As explained in the Methods section, we applied a repeated-measures ANOVA that allows integration of the between- and within-group analyses into the same model. This methodology starts from the hypothesis of interaction between group and time; a significant p-value for this hypothesis indicates that groups behave differently across time, and, in this situation, the within-group comparisons should be performed directly in this model as contrasts. Therefore, the methodology adopted in our study was, indeed, different from the one criticised by BLAND and ALTMAN [2], and we assure you that we used a statistically valid method [3, 4].



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Repeated-measures ANOVA allows integration of between- and within-group analyses into the same model <http://ow.ly/zVCAu>

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