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Letter to the Editor

How to well use the predictive equations for resting energy expenditure

Dear Editor,

We have read the recent work by Jeon et al. [1] available online the December 8th 2018 (In press version) issue of *Clinical Nutrition*, with grand interest. In this study, the authors developed a new equation for predicting resting energy expenditure (REE) in burn patients. By comparing a number of predictive equations, including published and new ones, with IC measurement, the authors found the highest concordance correlation coefficient and the lowest bias from their novel equation, as well as an overestimation of published equation. While this is an excellent work, some methodological issues should be highlighted.

According to the authors, the predictive equations of HB, Thumb, Ireton-Jones and others were used in their original form to predict REE, and then their accuracy and agreement were compared with indirect calorimetry (IC) measurement. The authors claimed that these previously published equations significantly overestimated REE compared with the values measured using IC. However, this overestimation could be due to non-optimal coefficient parameters in these equations [2,3], because they were developed from various different training data, rather than the authors' one. It is thus not surprising and even expected that these equations would provide poor estimation and low accuracy.

Assessing predictive performance is very important in practice, because it enables to guide the model selection [3] when some direct measurements are not available or not applicable. The recommended way is to re-adjust parameters of those equations by using the original covariates and the authors' sample, just like the way to develop the new Hanguang equation, and then estimate the REE and evaluate the accuracy for the comparison.

In conclusion, we really appreciate the work of Joen et al. for addressing this highly relevant topic, and also hope that the mentioned methodological issue could be considered.

Conflict of interest

The author declares that there is no conflict of interest.

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