

Response to Sabour

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To the Editor: We read the concerns of Mr Sabour (1) with some interest. In our study (2), we essentially analyzed the agreement of body-scanner measurements between three repetitive assessments by the same observer (intra-observer reliability) and between body-scanner measurements and corresponding measurements of classical anthropometry if available (validity).

All analyzed measurements are quantitative. Except intra/interclass correlation coefficients, all statistical measures proposed by Sabour are designed for binary/categorical variables and cannot be applied in our situation. Moreover, proposed measures like sensitivity, specificity, etc, have nothing to do with agreement.

Intra-class correlation coefficient cannot be used in our situation either, because our data are paired. We used concordance correlation coefficients (CCCs) to assess agreement in our study. This measure is maximal if there are no biases, no differences in the variances, and if there exist perfect correlations between two or more paired measurement series. The author also proposed interclass correlation as an alternative measure here, which, however, is less stringent than the CCC.

The concerns expressed by the author in paragraph 3 of his letter are obscure. There is no recognizable concept of “concordance and discordance cells” in our situation. Concordance is quantitatively assessed in our situation and not by tables. The author claims that $CCC < 0.5$ is like “Flipping a coin.” Again, it appears that the author mixed up concepts and we would like to refer to the literature (3–5) where the statistical properties of the CCC are explained in detail. A short explanation is given in our Methods section.

In the letter by Sabour, our research paper was cited as follows: “Based on their results, intra-observer reliability of both techniques is “excellent” ($OCCC \geq 0.9$). However, neck and thigh circumference a “good” ($CCC \geq 0.7$) and head circumference a “low” ($CCC < 0.5$; Flipping a coin!) degree of

concordance over the complete study population.” This does not correctly represent the content of our paper. The statements regarding neck, thigh, and head circumference are taken from our validity analysis—i.e., agreement of conventional with laser-based anthropometry—and not from the intra-observer reliability analysis as claimed by the author.

In summary, we are confident that we used appropriate statistics for our analyses and that conclusions thereon are correct.

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Fabian Glock¹, Markus Scholz², Andreas Kuehnafel² and Wieland Kiess¹

¹Hospital for Children and Adolescents—Centre for Pediatric Research, Leipzig University, Leipzig, Germany;

²Institute for Medical Informatics, Statistics and Epidemiology, Leipzig University, Leipzig, Germany.

Correspondence: Wieland Kiess
(Wieland.Kiess@medizin.uni-leipzig.de)

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