

Letter to the Editor concerning “Video raster stereography back shape reconstruction: a reliability study for sagittal, frontal, and transversal plane parameters” by Schroeder J, Reer R, Braumann KM (2015) Eur Spine J 24(2):262–269

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To the Editor,

In the last years, several articles investigated the reliability and validity of raster stereography [1, 2, 5] raising several points about them [4]. Recently, we read an article on a “reliability study for sagittal, frontal, and transversal plane parameters” based on test–retest assessment [5]. We think that this article promotes an approach surely simple but even worthy of further scientific evaluation. Several points listed in this letter point out what is yet necessary to verify to evaluate properly the effectiveness of the treatment. Particularly, the methodological approach shows several flaws, which lead to unclear results interpretation. Therefore, this letter aims to help reader better understand the treated matter. Considering that “The aim of this study was to assess the variability and reliability of the raster stereography with the Formetric tool” [5], all the points concern this tool.

- Two years ago, the “intra- and inter-day reliability” of the Formetric 4D was investigated by Guidetti et al. [2].

Yet, Schroeder et al. [5] did not cite such an original investigation about the same device object of their study.

- The authors did not disclose the Formetric version (1 ÷ 4 series) making thus further research on the same device troubled [3].
- The sample size is very low ($n = 20$) even to investigate the device’s performance with one limited 1.74 ± 0.09 -m body height range [CV = 5 %; Table 1’s Height (m) column is affected by a systematic format error, e.g., 1.74 ± 9.0 , i.e., $1.74 \text{ m} \pm 9.0 \text{ m}??$ [5]]. By the way, adult human height varies from “under 60 cm” up to “over 260 cm” (http://en.wikipedia.org/wiki/Human_height, +433 %). This point is very crucial for the reliability of an image processing procedure focused on the search of similar pixels when not considering the spatial limits of a real-life investigation.
- The “between-instant” test and retest were done within 5 min, which we fatigue to consider a “between-instant” time interval.
- Table 3 reports Tr-Inc (mm) at the four levels, but SD is dramatically high with respect to mean (i.e., SD always higher than mean, CV >100 % with reported 98.2 % CV value doubtful [5]).
- To prove a good “intra-device” reliability is not enough for ensuring patients’ reliable exam results without a comparison with the acknowledged gold standard, i.e., X-ray imaging.
- At present, we think that—especially for objective patients evaluation—it remains unsolved the crucial question, i.e., does raster stereography (a non-invasive method) provide a reliable/valid (i.e., effective) exam in comparison with X-ray imaging (an invasive method)?

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We think this question can only be answered after direct comparison of raster stereography with X-ray imaging (or 3D motion analysis).

Conflict of interest None of the authors has any potential conflict of interest.

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