



## Letter to the Editor concerning “Relationship between sagittal spinal curves geometry and isokinetic trunk muscle strength in adults” by Elsayed W, Farrag A, Muaidi Q, Almulhim N (Eur Spine J [2018] 27:2014–2022)

Luca Russo<sup>1</sup> · Johnny Padulo<sup>2,3</sup>

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To the Editor,

Recently, we read in the *European Spine Journal* the above-mentioned interesting paper. The paper aim is pretty clear by the title; at the same time, the description of the instrumentation used to assess the spine curves is not so clear or correct at all [1].

This letter aims to clarify two aspects:

1. The device troubles (Formetric 4D);
2. The terms used to describe the device.

About the troubles with the instrumentation, we have to underline that in the past some letters were published showing how the papers on Formetric 4D system (DIERS International GmbH, Germany) are not so accurate and the measuring error of the instrument is currently unknown [2–6, 8].

About the second point, in the “Method” section, for the explanation of the spine curvature examination there is written: “Spinal angles were evaluated using the Formetric 4D system (DIERS international GmbH, Germany). It is a non-invasive method for quantifying postural angles using surface topography scanning method. It has a strong correlation with X-ray in measuring spinal curves.” The cited reference is a paper [9] that found a correlation between two angles that are not representative of spinal anatomical curves but are representative of a specific spinal condition, e.g., scoliosis misalignment. In our opinion it is not correct,

from a scientific point of view, to declare that the Formetric 4D system (DIERS international GmbH, Germany) is able “in measuring spinal curves,” because the cited reference only found a correlation between a specific measurement of the instrument (scoliosis angle) and a measurement (Cobb angle) that is not representative of an anatomical curve. As suggested in the standard procedure, to validate a new device (concurrent device) it needs to know the error and the precision of this new device to avoid any possible noise [7] so that it cannot be concluded that the Formetric 4D system (DIERS international GmbH, Germany) is able to measure “spinal curves.”

More scientific exactness is required, especially to make the subject of this article more appealing for researchers outside the circle of radiologists and orthopedists. Further rigorous research will need to attend these points to advance the evidence on this topic.

### Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

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✉ Luca Russo  
info@dottlucarusso.com

<sup>1</sup> Department of Applied Clinical Sciences and Biotechnologies, University of L’Aquila, L’Aquila, Italy

<sup>2</sup> University eCampus, Novedrate, Italy

<sup>3</sup> Faculty of Kinesiology, University of Split, Split, Croatia

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