



## Answer to the Letter to the Editor concerning “The association of back muscle strength and sarcopenia-related parameters in the patients with spinal disorders” by Toyoda H, et al. (Eur Spine J; doi.org/10.1007/s00586-018-5858-8)

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Thank you very much for commenting on the methodology used in our recent study. We were surprised by the large number of comments regarding the accurate definition of sarcopenia and the gold standard methods for muscle mass evaluation [1–8]. As you said in your Letter to the Editor, researchers should minimize the variations in water distribution in the body when using bioelectrical impedance analysis (BIA) for muscle mass evaluation. We have data regarding the comorbidities of the included participants; however, we have no detailed data regarding the stomach contents and residual urine volume before BIA. All participants included in our study were ambulatory and had no severe comorbidities, dehydration and/or edema requiring medical treatment. Future, large-scale, prospective studies should include a comprehensive evaluation of the capacity of hydrated tissues throughout the body to help obtain more accurate results about the relationship between sarcopenia and spinal disorders.

The prevalence of sarcopenia depends substantially on the classification criteria and screening methods used. BIA is commonly used to estimate muscle mass as an indicator of sarcopenia, and the European Working Group on Sarcopenia in Older People (EWGSOP) and Asian Working Group for Sarcopenia (AWGS) recommend the use of BIA in community-based screening programs [9, 10]. We performed our cross-sectional observational study in strict accordance with these guidelines and consensus. We agree that it is important to pursue a more accurate measurement of muscle mass, but

we think that it is equally important to develop and apply safe and versatile methods for measuring muscle mass in community screening for sarcopenia. Thank you very much for your interest in our study.

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### Compliance with ethical standards

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

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