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## Classifying functional ambulation (letter)

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meaningful criteria for discharging patients from treatment (eg, success with the more challenging items of the instrument; see Kornetti<sup>4</sup>). This better understanding of the BBS at the item level and improvements in its scaling properties would be particularly relevant when BBS scores are used to measure balance progress in rehabilitation of PD patients.

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#### The authors respond

We appreciate Drs Franchignoni and Velozo's thoughtful remarks, observations, and analyses. While our clinical evaluation team continues to feel comfortable with the validity of the traditional Berg Balance Scale, there are obviously modifications that can be made. We look forward to incorporating their recommendations regarding Rasch analysis in our research.

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#### Classifying Functional Ambulation

Recently, Viosca et al<sup>1</sup> published a study proposing a new scale for classifying functional ambulation. After reading the article, we had concerns about its research methodology and the content of the scale.

From a methodologic viewpoint, Viosca did not specify any criteria why other scales do not fulfill professional needs or provide criteria for the properties of the new scale. Thus we are unsure whether the new scale actually performs better than the existing scales.

An attempt is made to validate the new scale against walking velocity and number of steps by performing a linear regression analysis. A point of concern is that the new scale is an ordinal data scale. Level 0 indicates poorer performance than level 1 and level 1 indicates poorer performance than level 2, and so forth. However, the difference between level 0 and 1 is very unlikely to be identical to the difference between level 1 and 2, and so forth. Thus an ordinal regression analysis would be the appropriate. It is unclear why in figures 1 and 2 a level 6 of functional ambulation is introduced outside the original scale range.

In table 2,<sup>1(p1235)</sup> a linear correlation is claimed in the table title, but in fact the table presents an ordinal correlation (Spearman  $\rho$ ).

Viosca proposes a scale that is self-explanatory, is meaningful, and meets clinical needs. A scale used in everyday practice should be very clear in its classifications of each ambulation level. According to Viosca, a clear classification into levels 3 (in and around house) and 4 (walking with aesthetic anomalies) is problematic. Level 3 assesses the environment of walking while level 4 assesses the appearance of walking. Basically, the levels assess different domains of walking ability and classification problems are to be expected. This problem has been discussed elsewhere.<sup>2,3</sup>

We suggest introducing the walking distance of the subjects into the classification so to overcome the problem of indoor and outdoor walking (level 3) and to skip the aesthetic anomalies domain (level 4) or to develop a separate classification for the appearance of walking. For lower-limb amputees, such a scale has proven to be clear and reliable.<sup>4</sup> Level 5 can be clarified with a minimum walking distance of 500m.<sup>5</sup> This distance is the minimum distance needed to allow someone to function independently in his/her own surroundings.

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