

Review of Methods for the Evaluation of Human Body Balance

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The aim of this review paper is to thoroughly present all main tests used today in the field of body balance/equilibrium assessment and evaluation. After the introduction of some basic biomechanical and movement regulation concepts, a short revision of the metric characteristics that each test should contain is discussed. The latter encompasses validity, objectivity, repeatability, sensitivity, and some other elements that are of crucial importance for the practical use of every assessment. The major part of text is dedicated to the critical research based review of the body balance tests of different levels of technical and other complexity. Pros and cons of the presented assessment methods are discussed. First, the field motor tests and simple clinical tests are presented. Their primary use in school physical education, sports medicine, and rehabilitation is pointed out. Second, laboratory tests for the static balance assessment are described in details, including all the measured parameters, their informational value and limitations. And third, laboratory tests for the evaluation of dynamic balance are presented in an analogue way. In the discussion, we compare different tests through the scope of usefulness, economy, metric characteristics and informational value. The paper closes with a summary of the state-of-the-art on the field of balance and proposals for future research work.

Keywords: human body balance, static balance, dynamic balance, body balance tests
