

# The Modified Borg Dyspnea Scale

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The scale that is often called “the modified Borg Dyspnea Scale” is usually a modification of an older version of the Borg CR scale® (CR10) (see enclosed ref. from 1982). Unfortunately, the ATS Guidelines for the six minute walk test presents this scale in Table. 2. There are some severe problems with the modification:

- 1) words have been changed: slight instead of weak and severe instead of strong. These words are not equivalent in "interpretation" (meaning and numerical position) and "preciseness" (interindividual variance). The word “severe” is particularly problematic because it has both the meaning of a “strong” intensity as well as the meaning of something being “serious”. Thus, if a patient has a “severe” feeling of dyspnea – does this mean that it is just a strong feeling or is it also potentially harmful? The verbal anchors on the Borg CR scale are carefully chosen and placed at their numerical positions to give ratio data that corresponds to what is obtained with a psychophysical scaling method called magnitude estimation (that on group level has been shown to give ratio data).
- 2) The Borg CR10 scale is also a general intensity scale. This means that there is no need to modify the scale in order to adapt it for specific symptoms (with one scale for exertion, another for pain, one for breathlessness, dyspnea, etc.), but the same scale can be used for any symptom that has an intensity variation. So, with a correct administration and instruction, the Borg CR10 scale, can be used for perceived exertion, pain and dyspnea, and also for motivation, depression, anxiety, or loudness, taste, smell, etc. And the values can be compared intra-individually and even inter-individually. If I rate my perceived exertion as 8, my pain as 4 and my dyspnea as 2, my feeling of exertion is twice as strong as my pain and 4 times as strong as my dyspnea. So only the correct Borg CR scale® (CR10) is needed.
- 3) the upper dot “•” has been taken away from the scale. This reduces variability at the top of the scale and might introduce a ceiling effect resulting in truncation of data at the upper part of the scale. This will threaten the data quality in that the scale value intervals at the top of the scale will no longer be equal. This is a general problem with many scales. Let’s illustrate the problem with a simple rating scale with the scale values 1(minimal), 2, 3, 4, 5(maximal). Typically, participants will first tend to avoid using the endpoints (1 and 5) and “save them” for extreme situations. This means that there will be a larger “perceptual difference” between 4 and 5 than between 3 and 4 etc. The next problem occurs when the participant finally decides to use “5” because “this must be maximal” and the next level is perceived as even stronger/more intense... Then the participant will be forced to use 5 again.
- 4) Another problem (but not as serious) comes from to what extent the scale encourages the usage of fractions (decimal values). Perceived exertion and dyspnea are continuous variables (like body length and weight for example) and this should be reflected in the scale. Therefore, decimal values - not only 0,5 - are supposed to be allowed on the scale (also on the old one from 1982). However, the new version makes this clearer.

## References:

- ATS statement: guidelines for the six-minute walk test. ATS Committee on Proficiency Standards for Clinical Pulmonary Function Laboratories. Am J Respir Crit Care Med 2002;166(1):111–117.
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- Borg, G., and Lindblad, I (1976). The determination of subjective intensities in verbal descriptions of symptoms. Report from the Institute of Applied Psychology, the University of Stockholm, No. 75, 22 pp.
- Erratum: ATS Statement: Guidelines for the Six-Minute Walk Test. Am J Respir Crit Care Med. 2016 May 15;193(10):1185. doi: 10.1164/rccm.19310erratum. Erratum for: Am J Respir Crit Care Med. 2002 Jul 1;166(1):111-7. PMID: 27174486.