

Misperception: No evidence to dismiss RPE as regulator of moderate intensity exercise

Shaykevich et al. (7) demonstrate the efficacy of auditory feedback anchored at 75% of age predicted maximal heart rate (HRmax) to regulate intensity (claimed as 'moderate') during several 20-min bouts of cycling. Their technical approach is novel, but 76% HRmax is the upper limit of moderate intensity, so given the large error in age-predicted HRmax, it is unlikely that their exercise bandwidth was 'moderate' for all participants. This is not our major concern, but it reveals one among other inaccuracies: The most serious include training, interpretation and inferences relating to the rating of perceived exertion (RPE).

Their rationale discusses the use of RPE (which they describe as 'rate') to control intensity. They rely heavily on a single study to support their conclusion that this method is effective only at intensities above 80% HRmax. However, in that study (8) the slopes and intercepts of individual regression lines of speed generated from several 5-min RPE production trials and RPEs estimated from a prior progressive exercise trial (T1) were identical (Fig. 1, ref 8). The differences in HR at the lower RPEs between T1 and the randomized RPE production trials were most likely attributable to a combination of protocol (progressive T1 versus randomised RPE production) and differences in gait (walking versus running) which were not controlled.

Studies normally include some training in RPE prior to use, which typically involves memory recall and/or experiential anchoring. In the present study, there was no such training. Participants' first exposure to RPE was on completion of the initial testing session, when a pre-recorded message '*invited subjects to complete an RPE response*'. Instructions on the RPE scale are not provided. Also, the cited 6-20 RPE scale is a momentary scale, validated for use during exercise. The timing of the perceptual response (i.e., post versus during) affects the value reported (4).

Despite the rationale described, an RPE-regulated paradigm was not applied in their study. It is therefore disconcerting that the authors should dismiss the efficacy of RPE to regulate moderate intensity exercise on the basis of their data, when no such evidence is presented! Many studies show that RPE is a valid means of reproducing a range of intensities (by physiological variables, power or speed) below and above 80% HRmax in healthy (2,8); disabled (3) and clinical populations (1), including short (e.g., 3-5 min, 5,8) and longer duration exercise (e.g., 20-30 min, 1,3,6), to name a few.

In our view, the similar RPEs between trials do not suggest that '*...RPE alone may not be a sufficiently effective cue to ensure repeatability of effort intensity*'. On the contrary, and given the issues raised, their results suggest that RPE is actually quite reliable as it most likely reflected RPE during the last moments of exercise when HR was 'in zone'.

In summary, Shaykevich et al. (7) did not train participants in the use of RPE and did not use RPE to regulate intensity. They therefore provide no evidence to support their assertion that RPE '*cannot be used to regulate moderate intensity exercise.*'

References

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