

VIGOROUS EXERCISE IN CLINICAL PRACTICE: BALANCING RISKS AND BENEFITS

Dear Editor-in-Chief:

The effects of different exercise intensities on health have been investigated in several studies in recent years, in which some authors showed greater benefits for vigorous exercise (6) while others did not find any differences (8). An important issue regarding these conflicting results could be the fact that only a few of the studies controlled the effects of different exercise intensities for the overall volume of physical activity, making the evaluation of the available data difficult.

To address this gap in the literature, Pavey et al. (5) conducted a population-based study among middle-age women to examine whether vigorous physical activity could promote additional health benefits beyond those provided by moderate activity, with the total volume of physical activity being controlled. The results suggested no significant effects of intensity on a 12-yr risk of hypertension and depression, except with the highest volumes of physical activity ($>2000 \text{ MET} \cdot \text{min} \cdot \text{wk}^{-1}$), wherein vigorous activity demonstrated greater benefits. However, maintaining much physical activity during long periods is not feasible, which limits the applicability of this finding. Thus, the results obtained by Pavey et al. (5) reinforce the necessity to appraise the risks and benefits of prescribing vigorous exercise in clinical practice, especially when considering three different aspects: acute cardiovascular risk, musculoskeletal injury, and adherence to the exercise.

First, in spite of the widely recognized benefits of physical activity, each exercise session is associated with a transiently increased risk of acute cardiovascular events and sudden death (7), which is directly related to the exercise intensity. This was demonstrated by Albert et al. (1), who found that the risk of sudden death was almost 17 times greater for vigorous activities in comparison with lighter activities or no exertion. Second, the risk of musculoskeletal injury increases concomitantly with increased exercise intensity (3). Although walking and other moderate-intensity activities have shown a very low risk of musculoskeletal injuries, high-intensity activities are associated with elevated levels of injuries, the risk being greater than 50% for those high-intensity activities such as jogging, running, and competitive sports (4). Third, there is evidence suggesting that adherence to vigorous exercise programs is low. In a recent systematic review, Ekkekakis et al. (2) concluded that there is an inverse relation between exercise intensity and affective responses, in which high intensity is associated with a lower

pleasure in performing physical activities, thus, decreasing the adherence to the exercise.

In conclusion, when prescribing exercise intensity for health, several aspects must be considered in order not only to maximize the benefits but also to reduce the risks and improve long-term adherence. Because the additional benefits of vigorous exercise are controversial and their risks are well established, moderate exercise emerges as the best intensity for promoting health benefits and must be encouraged on a larger scale in clinical practice. Vigorous exercise should be recommended only for those previously trained individuals who like and want to perform high-intensity activities, a group of persons in which the benefits of vigorous exercise could outweigh the risks.

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