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Introduction

Numerous training programs have been developed to promote health in the general population. A field test that could be applied to individuals of various training level and wide variety of age might be of particular interest to assess the efficacy of any program aiming to enhance fitness. Fitness level (*i.e.* $\dot{V}O_{2max}$) may be estimated from the time to perform the one-mile track walk test (1 mile-WT; Kline *et al.*, 1987) taking into account factors known to be predictive of fitness such as gender, age, body size etc. At the opposite, non-exercise based-equation models (NE-BEM; Jurca *et al.*, 2005) have been proposed for estimating fitness. The NE-BEM take into account above-mentioned factors and self-reported (SR) habitual physical activity levels.

Objective

The objective of this study was to compare values of $\dot{V}O_{2max}$ estimated from results of a 1 mile-WT to those obtained from SR activity in a large group of healthy individuals.

Materials and Methods

Prior to testing, all 84 participants (men, 28; women, 55; age: 38.0±12.3 years) completed an informed consent form. In order to obtain data necessary for $\dot{V}O_{2max}$ prediction by the two models, they completed a questionnaire. Each subject was weighed and prepared for heart rate (HR) monitoring (Polar®). The 1 mile-WT was performed on an athletics track. Subjects were instructed to walk as fast as possible and HR was recorded every 400 m (Fig. 1).

Six statistical methods, with different assumptions, were used to estimate the level of agreement between values of $\dot{V}O_{2max}$ estimated from results of a 1 mile-WT to those obtained from SR activity. Bland Altman plots were also constructed.



Figure 1: participants walking one-mile as fast as possible on a athletic track

Results

On average, the 1 mile-WT required 12.9±1.3 minutes to be performed. The mean $\dot{V}O_{2max}$ was 41.8±7.5 versus 32.7±7.5 mL.kg⁻¹.min⁻¹ as estimated by with the 1 mile-WT and the NE-BEM, respectively. There was no agreement between the different tests (Fig. 2).

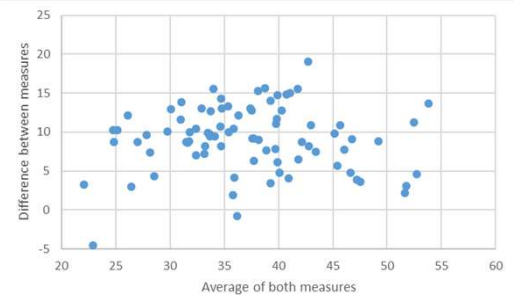


Figure 2: plot of differences between values estimated by Jurca *et al.*, 2005 and Kline *et al.*, 1987 equations versus the mean of both values

Conclusion

The 1 mile-WT is a simple test that can be performed by any kind of healthy individuals (from young and lean to aged and obese subjects) and that requires little or no specialized equipment. A previous study indicated that its value to estimate $\dot{V}O_{2max}$ in a group of people not linked by fitness level and/ or age is doubtful but its usefulness to follow improvement of individuals following training programs remains to be tested.

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