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One Health

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Posters

58. Prediction of maximal oxygen consumption using simple field tests in healthy adults

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Numerous training programs aim to promote health in the general population. A field test that could be applied to individuals of various training levels and age might be of particular interest to assess efficacy of fitness programs. Fitness level may be estimated from the one-mile track walk test (1 mile-WT) but also from non-exercise based-equation models (NE-BEM). The NE-BEM take into account factors known to be predictive of fitness (*e.g.* gender, age, body size etc.) and self-reported physical activity levels. This study compares values of $\dot{V}O_{2max}$ estimated from a 1 mile-WT vs NE-BEM in a large group of healthy individuals.

All 84 participants completed a questionnaire to obtain data necessary for $\dot{V}O_{2max}$ prediction by the two models. The 1 mile-WT was performed on an athletics track. Subjects were instructed to walk as fast as possible and heart rate was recorded every 400 m. Six statistical methods, with different assumptions, were used to estimate the level of agreement between values of $\dot{V}O_{2max}$ estimated from the two tests.

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 vs 32.7 ± 7.5 mL.kg⁻¹.min⁻¹ as estimated with the 1 mile-WT and the NE-BEM, respectively. There was no agreement between the different tests.

The 1 mile-WT is a simple test that can be performed by any kind of healthy subject and that requires 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.