

16th International Conference and Exhibition on

OBESITY & WEIGHT MANAGEMENT

&

17TH WORLD FITNESS EXPO

 November 13-15, 2017 | Atlanta, USA

The reliability and validity of DISQ® equipment on ventilatory parameters and caloric cost at treadmill test in healthy subjects

Alexandre Evangelista and Danilo Bocalini
Universidade Nove de Julho, Brazil

Introduction & Aim: Recent studies have shown that traditional exercise training may not be considered the faithful strategy to maximize caloric expenditure or enhance cardiorespiratory adaptations in several modalities of physical activities, especially running. Thus, different equipment has been built as alternative strategies, such as DISQ® equipment. However, there is a lack of physiological responses information about this equipment. In order to clarify it, the purpose of this study is to compare physiologic responses in a cardiorespiratory exercise test with DISQ® equipment.

Methodology & Theoretical Orientation: Fifteen (15) healthy subjects were voluntarily randomized and submitted to two maximal treadmill incremental cardiopulmonary exercise test with (Disq case) and without (control case) DISQ® equipment. The following parameters were evaluated by heart rate (HR), anaerobic threshold (An), respiratory compensation point (RCP) and exercise peak (EP): Ox (oxygen consumption: VO_2 (L.min) and VO_2 (ml.kg.min^{-1})) and CE (CHO, fat and total caloric expenditure-TCE).

Findings: No differences ($p>0.05$) were found on An, PCR and EP respectively to HR. In the Ox, no differences were found on An and PCR of Disq-case in comparison to control-case. However, the EP was different in the Ox. Finally, there was no difference between the two conditions in CE from CHO, fat and total caloric expenditure.

Conclusions: The maximal heart rate and oxygen consumption did not differ with the equipment. Some rational explanation for this can be addressed to higher peripheral fatigability induced by the equipment.

Biography

Alexandre Evangelista is graduated in Physical Education and completed his PhD in Science. He has expertise in Sports Training and Exercise Physiology and teaches Physical Education and disciplines of Bodybuilding and Personalized Training at Universidade Nove de Julho in Brazil. He is a Member of the study group on Physical Activity and Health Promotion and Biodynamics of the exercise applied to sport, health and human performance, both at Universidade São Judas Tadeu, Brazil. He is the author of six books about functional training and street racing. He also lectures throughout Brazil and other South American countries on Load Control Training, Weight Loss and Health.

contato@alexandrelevangelista.com.br

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