



## Fwd: Your Abstract Submission-ID: [2041] (Cardiorespiratory fi...)

Rui Batalau <ruibatalau@gmail.com>

26 de fevereiro de 2015 às 00:40

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### EUROPEAN COLLEGE OF SPORT SCIENCE

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20th ECSS Congress 24-27 June 2015 Malmö/SWE

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#### B. Paper Submission

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Abstract-ID.....: 2041

Title.....: Cardiorespiratory fitness and physical activity on a multidisciplinary school-based intervention in children <Project PANK>: a randomized controlled trial.

Authors.....: Batalau, R. 1,2, Cabrita, P.2, Cruz, J.1, Gonçalves, P.1, Guerreiro, T.1, Santos, M.1, Gonçalves, R.1, Leal, J.3 & Palmeira, A.2,4. 1. ISMAT, 2. ULHT, 3. IP Beja, 4. CIPER-Un. Lisbon (Portugal)

Institution.....: Lusófona University

Department.....: Faculty of Physical Education and Sports

Country.....: Portugal

Topic.....: Health and Fitness

Keyword I.....: Physical Activity

Keyword II.....: Cardiorespiratory Fitness

Keyword III.....: Children

Format(\*).....: Oral

YIA.....: No

(\*) The Scientific Committee reserves the right to change your presentation format if appropriate.

#### Introduction

Most European children do not meet physical activity (PA) recommendations (Verloigne et al., 2012). So, obesity programmes focusing on PA have been suggested (WHO, 2009). This study is a part of Project PANK, a 6 months school-based multidisciplinary intervention to improve variables associated with cardiovascular and metabolic risk factors (CMRF). The main purpose is to analyse the impact of the intervention on PA and cardiorespiratory fitness (CRF) among Portuguese children.

#### Methods

Overweight and obese children (n=77, 7-10 y, both genders) were recruited. Intervention group (IG=40) had a PA intervention with 3 meetings for children and parents, an additional PA class (1h) and 6 educational sessions related to PA. At the same time, IG had a nutrition intervention with 3 meetings for children and parents and 6 educational sessions. Control group had no intervention. In IG, the CRF was assessed at baseline, after 3 and 6 months (20m shuttle run test). VO2max was estimated by Fernhall et al. (1998) (Fer) and Matsuzaka et al. (2004) (Mat) models. PA was assessed 6 times by accelerometers (GT3X) during 7 days. Evenson et al. (2008) cut-points were used. In CG, CRF and PA were assessed at baseline and after the program.

#### Results

The IG performed a higher amount of moderate PA (p=,014). Similar results were found in vigorous PA (p=,003). IG presented a higher number of moderate-to-vigorous PA bouts of 1-5 minutes when compared to CG (p=,008). No differences were found between groups in sedentary behaviours breaks. The IG shows higher levels of CRF when compared with CG (Fer Model: p<,001; Mat Model: p<,001). Partial correlation shows a positive association between the variance in vigorous PA since baseline to the end of intervention performed by IG and the variance of the CRF (Fer: p=,021; Mat: r=,42, p=,010).

#### Discussion

The PANK was effective in improving PA. Our results corroborate that it is possible to achieve improvements in CRF by increasing PA. The results in PA confirm that to achieve health benefits, the PA should be of at least a moderate intensity, but vigorous intensity activities may provide even greater benefit for children (Janssen and Leblanc, 2010). Considering the suggested independent impact of PA on metabolic syndrome and insulin resistance, alternatively or simultaneously mediated by the CRF and adiposity of youth (Guinhouya, et al., 2011), we will explore the possible influence of these results in the several CMRF studied.

Evenson, R., et al. (2008). Calibration of two objective measures of PA for children.

Guinhouya, C., et al. (2011). Evidence of the influence of PA on the metabolic syndrome and/or on insulin resistance.

Janssen, I. et al. (2010). Systematic review of the health benefits of PA and fitness.

Matsuzaka, A., et al. (2004). Validity of the multistage 20-m shuttle-run test.

Verloigne, M., et al. (2012). Levels of PA and sedentary time among 10- to 12-year-old boys and girls.

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