

## **Exercise Socially Contagious (ESC) project: are we influenced by strangers' physical activity and sedentary behaviour? A randomized controlled trial**

Ricardo Gonçalves<sup>1,2</sup>, Rui Batalau<sup>1,2</sup>, Joana Cruz<sup>1</sup>, & António Labisa Palmeira<sup>2,3</sup>

<sup>1</sup>Centro de Investigação em Desporto e Educação Física (CIDEF) - Manuel Teixeira Gomes Institute – Portugal, <sup>2</sup>Faculty of Physical Education and Sport, Lusophone University – Portugal, <sup>3</sup>Interdisciplinary Centre for the Study of Human Performance (CIPER) – Faculty of Human Kinetics, University of Lisbon – Portugal

### **Abstract**

Research has found that people are more active when their significant others are, suggesting that this behaviour can be "contagious". However, social contagion through unfamiliar people is not well known. So, the aim of this randomized controlled trial was to analyze the association between social contagion through strangers and PA and SB bouts.

Data from the ESC project were used. In total, 142 adults were randomly allocated in four groups: a) control group, primed with videos about healthy nutrition; b) Brochure Group, primed with brochures about PA and SB; c) PA Group, primed with strangers (staff members) talking about PA, ten people doing PA (prepared actors) and videos about PA; d) SB Group, the same intervention as PA Group, but SB priming instead of PA. Participants PA and SB were measured by Actigraph (wGT3X) accelerometers for seven consecutive days, one week before, one week after, and three months after the intervention. The number and duration of SB bouts (<100 counts/minute) lasting 1-14, 15-29, and  $\geq 30$  consecutive minutes, and of Moderate-to-Vigorous PA (MVPA) bouts ( $\geq 1952$  counts/minute) lasting  $\geq 10$  consecutive minutes were calculated. Repeated measures multivariate ANCOVA, using gender as covariate, was used.

Results show that the PA brochure decreased 1-14 min SB bouts daily duration (less 12%) in the following week (all  $p < .001$ , large effect size). Nonetheless, this effect is overturned after three months (all  $p < .001$ , large effect size). Regarding  $\geq 10$  min MVPA bouts, both groups primed with PA decreased their daily duration in the following week ( $p = .011$ , medium effect size).

The use of brochures to promote PA may not be beneficial. Additionally, the interventions with strangers did not affect activity levels in this exploratory study. More studies are warranted to confirm these results.

**Keywords:** Strangers, priming, social contagion, moderate-to-vigorous physical activity bouts, sedentary behaviour bouts