

Adapted Physical Activity

Effects of a 12-week workplace physical activity intervention on the physical fitness of an academic community.

Chiara Tuccella

chiaratuccella00@gmail.com

---

## **EFFECTS OF A 12-WEEK WORKPLACE PHYSICAL ACTIVITY INTERVENTION ON THE PHYSICAL FITNESS OF AN ACADEMIC COMMUNITY.**

### **EFFECTS OF A 12-WEEK WORKPLACE PHYSICAL ACTIVITY INTERVENTION ON THE PHYSICAL FITNESS OF AN ACADEMIC COMMUNITY.**

*C. Tuccella<sup>1,2</sup>, E. D'Angelo<sup>1</sup>, L. Pugliese<sup>1</sup>, G. Maisto<sup>1</sup>, V. Bonavolontà<sup>1</sup>, M. G. Vinciguerra<sup>1</sup>*

<sup>1</sup>*Department of Applied Clinical and Biotechnological Sciences – University of L'Aquila,*

<sup>2</sup>*Department of Neurosciences, Biomedicine and Movement Sciences - University of Verona,*

**Purpose:** Numerous studies have emphasized the importance of physical activity (PA) in the workplace as a pivotal strategy to reduce sedentary behaviors. A recent meta-analysis examining studies involving 12 weeks of circuit training (CT), characterized by high-intensity exercise bouts interspersed with short rest periods, demonstrated significant benefits in body composition, metabolic profile and cardiorespiratory fitness (CRF) among employees. “Ateneo in Movimento” is a project of the University of L'Aquila that aims to promote the psycho-physical well-being of employees through on-site physical exercise classes. Therefore, the objective of this study was to evaluate the effects of the first 12 weeks of a 24-week CT protocol on physical fitness (PF) in the adult academic community of UnivAQ.

**Methods:** Sixty-one participants were divided into an intervention group (IG, n=32; age= 46.5±15.3 yrs) and a control group (CG, n=29; age= 42.1±14.9 yrs). The IG group performed a CT consisting of 8 stations twice a week for 12 weeks, with a work-rest ratio of 1:1 (30 seconds) for 3 rounds. The CG continued to engage in their usual daily activities during the study period. The following variables were evaluated before (T0) and after 12 weeks (T1): Fat Free Mass (FFM%) and Fat Mass (FM%) for body composition, balance with one leg stand test, upper mobility with shoulder neck mobility, upper limbs strength with handgrip, lower limbs strength with jump and reach, core strength with dynamic sit-up, CRF with 2-min step test. In addition, IPAQ was administered for the assessment of daily METs.

**Results:** One-way ANCOVA, with pre-test values as covariate, showed a difference for the 2-min step test in IG compared to CG (p=0.007). A paired t-test was used to evaluate Pre-Post effects within the group: differences were

found in the IG for FFM% ( $p=0.041$ ), daily METs ( $p=0.05$ ), dynamic sit-up ( $p=0.002$ ) and 2-min step test ( $p<0.001$ ). In CG differences for handgrip and jump and reach were found ( $p<0.001$ ,  $p=0.003$ ).

**Conclusions:** The pairwise comparison between groups suggests that the CT proposed during the intervention was effective in improving CRF for IG. Moreover, the intervention on the workplace seemed to produce an improvement of the FFM%, abdominal strength and daily METs. As the study spans a total duration of 24 weeks and only the initial 12-week period (T0-T1) was evaluated, additional results are expected upon completion of the protocol at the T2 evaluation.