

# European Respiratory Society Annual Congress 2012

**Abstract Number:** 3419

**Publication Number:** P4449

**Abstract Group:** 4.1. Clinical physiology and Exercise

**Keyword 1:** Physical activity **Keyword 2:** Exercise **Keyword 3:** COPD - management

**Title:** Laboratory exercise tests are not representative of the real physical activity in more severe COPD patients

Dr. Francesco 17407 Costa francesco\_costa@hotmail.com MD <sup>1</sup>, Dr. Laura 17408 Malagrino lauramalagrino@yahoo.it MD <sup>1</sup>, Ms. Gianna 17409 Decusatis giannadecusatis@hotmail.it <sup>1</sup>, Ms. Sandra 17410 Antonelli francesco\_costa@hotmail.com <sup>1</sup>, Ms. Claudia 17411 De Simone francesco\_costa@hotmail.com <sup>1</sup>, Ms. Sabrina 17413 Santerini francesco\_costa@hotmail.com <sup>1</sup>, Dr. Barbara 17418 Vagaggini b.vagaggini@ao-pisa.toscana.it MD <sup>1</sup> and Prof. Pierluigi 17419 Paggiaro lpaggiaro@dcap.med.unipi.it MD <sup>1</sup>. <sup>1</sup> Cardiothoracic and Vascular Department, University of Pisa, Italy .

**Body:** Background: Cardiopulmonary exercise test (CPET) is the gold standard to evaluate the exercise tolerance. Incremental shuttle walking test (ISWT) has ventilatory and metabolic responses similar to those of CPET in moderate-severe COPD. Sensewear Armband is a new device to quantify the physical activity of daily life. AIM: to evaluate the correlations among CPET, ISWT and daily physical activity, measured by Armband, in patients with COPD of different severity. Subject and methods: in cross sectional study 45 COPD patients (FEV1%: 52.5±17, 36 male) evaluated: CPET, ISWT, pulmonary function test (PFT), dyspnea scale (MRC), steps/day and total energy expenditure (TEE) by Armband (as a mean of a 7-day monitoring period). The patients were divided according to FEV1 (>50 % or ≤ 50 %) and MRC (≤ 2 or > 2). Results: CPET and ISWT significantly correlated between them, better in patients with FEV1 <50% and in those with MRC > 2. In COPD patients with FEV1 >50%, steps/day (r=0.405, r=0.582) and TEE (r=0.494, r=0.615) significantly correlated with CPET and ISWT, respectively, while this did not occur in COPD patients with FEV1 <50%. Similarly, steps/day (r=0.423, r=0.575) and TEE (r=0.319, r=0.494) significantly correlated with CPET and ISWT in COPD patients with a MRC < 2, respectively, while this did not occur in COPD patients with MRC > 2. Conclusion: Exercise tolerance evaluated in laboratory by CPET and ISWT is representative of the real physical activity, as expressed by steps/day and TEE, in patients with moderate COPD but not in patients with severe COPD. In these patients, physical activity evaluation may offer complementary informations to the laboratory exercise assessment.