

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 2966

**Publication Number:** 1476

**Abstract Group:** 9.2. Physiotherapists

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

**Title:** Development and validation of a non-bouts moderate-to-vigorous intense physical activity (MVPA) target in healthy subjects and COPD

Mr. Hans 13968 Van Remoortel [hans.vanremoortel@faber.kuleuven.be](mailto:hans.vanremoortel@faber.kuleuven.be)<sup>1,2</sup>, Mr. Carlos Augusto 13969 Camillo [carlos.camillo@faber.kuleuven.be](mailto:carlos.camillo@faber.kuleuven.be)<sup>1,2</sup>, Dr. Daniel 13970 Langer [daniel.langer@faber.kuleuven.be](mailto:daniel.langer@faber.kuleuven.be)<sup>1,2</sup>, Ms. Miek 13971 Hornikx [miek.hornikx@faber.kuleuven.be](mailto:miek.hornikx@faber.kuleuven.be)<sup>1,2</sup>, Ms. Heleen 13972 Demeyer [heleen.demeyer@faber.kuleuven.be](mailto:heleen.demeyer@faber.kuleuven.be)<sup>1,2</sup>, Dr. Chris 16826 Burtin [chris.burtin@faber.kuleuven.be](mailto:chris.burtin@faber.kuleuven.be)<sup>1,2</sup>, Prof. Dr Marc 13974 Decramer [marc.decramer@med.kuleuven.be](mailto:marc.decramer@med.kuleuven.be) MD<sup>2</sup>, Prof. Dr Rik 13976 Gosselink [rik.gosselink@faber.kuleuven.be](mailto:rik.gosselink@faber.kuleuven.be)<sup>1,2</sup>, Prof. Dr Wim 13979 Janssens [wim.janssens@faber.kuleuven.be](mailto:wim.janssens@faber.kuleuven.be) MD<sup>2</sup> and Prof. Dr Thierry 13982 Troosters [thierry.troosters@faber.kuleuven.be](mailto:thierry.troosters@faber.kuleuven.be)<sup>1,2</sup>. <sup>1</sup> Rehabilitation Sciences, Katholieke Universiteit Leuven, Leuven, Belgium and <sup>2</sup> Respiratory Division, University Hospital Leuven, Leuven, Belgium .

**Body:** Thirty minutes of MVPA in bouts of at least 10 minutes is a commonly-used target to distinguish active from inactive subjects. Since MVPA data are frequently analyzed without bouts, we aimed to propose a MVPA non-bout target equivalent to 30 min. (bouts) and to validate this target in subjects with and without COPD. Hundred-thirteen subjects with ( $62\pm 6$  yrs,  $FEV_1$   $65\pm 27\%$ ) and 110 without COPD ( $62\pm 5$  yrs,  $FEV_1$   $111\pm 18\%$ ) wore an activity monitor for 7 days. MVPA was defined as the time spent  $>3$  METs. We randomly divided our healthy population into a calibration sample (CS,  $n=73$ ) and a cross-validation sample (CV-S,  $n=37$ ). Receiver operating characteristic (ROC) curve analyses were used to determine a MVPA non-bout target (CS) and to (cross-)validate this target by comparing sensitivity and specificity in subjects with and without (CV-S) COPD. Using the criterion of 30 minutes MVPA per day (bouts), a daily target of 80 min. MVPA provided the best combination of sensitivity (83(58 to 96)%) and specificity (85(73 to 93)%) with an area under the ROC curve of 0.89 (0.81 to 0.98). This target revealed a high balance of sensitivity and specificity in both the healthy CV-S sample ( $n=37$ ) and patients with COPD ( $n=113$ ).

Accelerometry measured MVPA (non-bouts) of 80 min. per day corresponds to 30 min. of MVPA per day in bouts and is valid to discriminate active from inactive subjects.