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Title: Differences on the time spent in moderate intense physical activities when analyzed by different classifications in patients with COPD

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Body: Background: The American College of Sports and Medicine (ACSM) recommends that 30 minutes of moderate intense physical activities (MIPA) on at least 5 days per week are needed to yield health benefits. Different targets have been proposed to classify MIPA. It is not clear whether the time spent in MIPA is different when using different classifications in patients with COPD. Therefore, we aimed to investigate the impact on MIPA when using different PA targets. Methods: 113 patients with COPD (Age 62 ± 5y FEV1 65 ± 27%pred) wore an activity monitor (Sensewear Armband®) during 7 days and performed a maximal exercise test. MIPA was estimated by pre-defined METs cut-points according to commonly-used PA targets: (i) >3 METs for all ages (ACSM); (ii) >3 METs (≤65y) and 50% VO2 reserve [(VO2rest + 0,5(VO2max – VO2rest)] equivalent of METs (>65y) (ACSM for older adults, ACSMO), (iii) age-specific cut-point of >4.5 METs (≤65y) and >3.6 METs (>65y) (as proposed by Haskell and Pollock, HP; and (iv) 50% VO2 reserve equivalent of METs. Results: Time in MIPA varied largely between all four classifications: (i) ACSM 49[26-99] min/day; (ii) ACSMO 68[36-135] min/day; (iii) HP 12[4-33] min/day and (iv) 50% VO2 reserve 122[51-202] min/day. There was statistical difference between all the pairs (Kruskal-Wallis test $p<0.001$) except between ACSM and ACSMO. Conclusion: Time spent in MIPA varies up to 10 fold depending on the selected physical activity target. This has important implications when providing PA guidance to patients.