



# Impact of ActiGraph® cutoffs on time spent in moderate to vigorous physical activities in COPD.

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## Abstract

ActiGraphs® are often used to assess time in moderate to vigorous physical activities (MVPA) in people with COPD. Different cutoffs can be used to quantify MVPA. If they yield similar or different MVPA results is yet unknown. There are no cutoffs specifically developed, nor validated, for COPD, but Troiano and Freedson cutoffs are the most used. Recently, Santos-Lozano proposed a cutoff specific for older people, that has been used in COPD. This study aimed to explore MVPA results quantified with different cutoffs in COPD.

Participants wore the ActiGraph wGT3X for 7 days and data were included if they had used it for at least 8h (7am to 10pm) for 4 days (Choi algorithm for non-wear time). MVPA was estimated using the cutoffs from Troiano, Freedson and Santos-Lozano. Differences between cutoffs were explored with Friedman Test, followed by post-hoc comparisons.

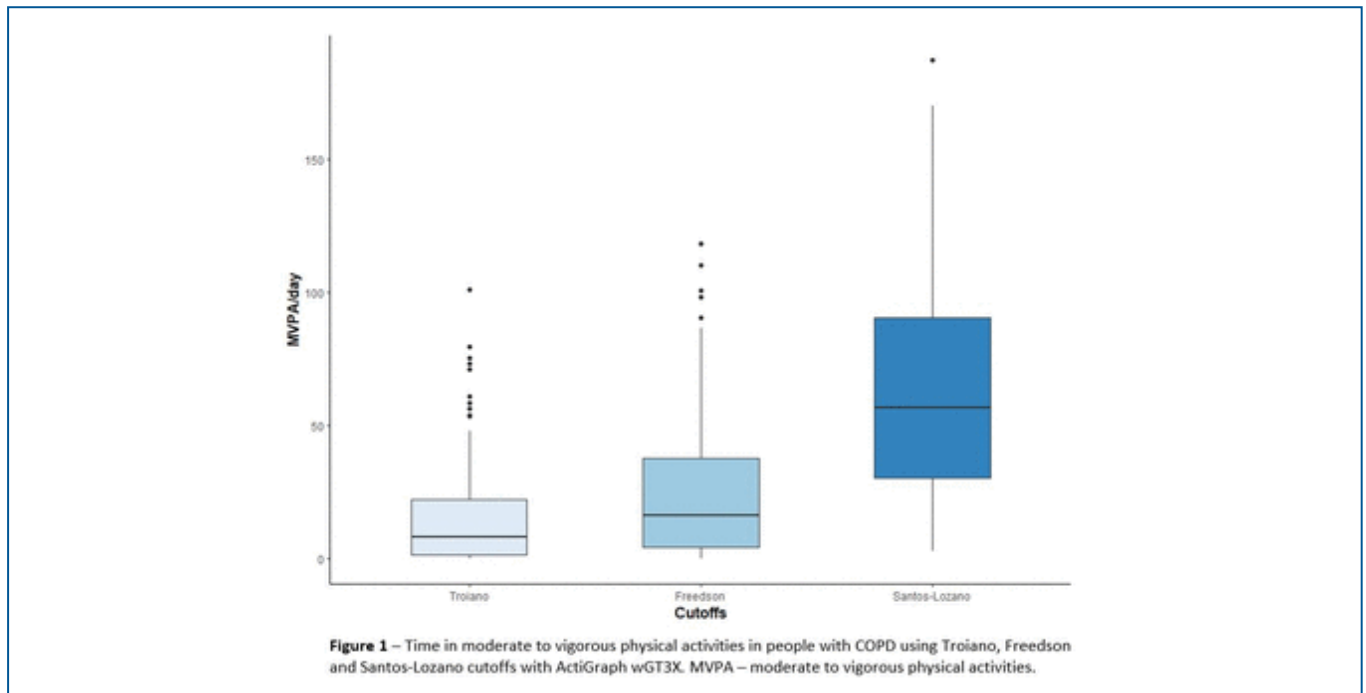
107 people with COPD (79%♂; 68±8y; FEV1pp 49±17) were included. MVPA was affected by cutoffs ( $\chi^2(2)=194.56$ ,  $p<0.001$ ). Santos-Lozano cutoff yielded the highest MVPA estimates, followed by Freedson and Troiano cutoffs (median [Interquartile Range] = 57[30-90] vs 16[4-38] vs 8[2-22] (Fig.1). All cutoffs differed significantly from each other ( $p<0.001$ ).

The cutoff selection affects MVPA estimates in people with COPD and may mislead the classification of these

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