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Title: Can pedometer step count predict severe physical inactivity in COPD?

Ms. Claire M. 4231 Nolan c.nolan@rbht.nhs.uk [1], Dr. Jane L. 4232 Canavan j.canavan@rbht.nhs.uk [1], Dr. Samantha S.C. 4233 Kon s.kon@rbht.nhs.uk MD [1], Ms. Sarah E. 4234 Jones s.jones5@rbht.nhs.uk [1], Prof. Dr Michael I. 4235 Polkey m.polkey@rbht.nhs.uk MD [1] and Dr. William D.-C. 4236 Man w.man@rbht.nhs.uk MD [1]. [1] NIHR Respiratory Biomedical Research Unit, Royal Brompton & Harefield Hospital NHS Foundation Trust and Imperial College, Harefield, Middlesex, United Kingdom, UB9 6JH .

Body: Introduction: Accelerometer measured physical inactivity predicts mortality in COPD (Waschki et al., 2011). Although pedometers may not precisely record step count in slow walking COPD patients, they are cheaper than accelerometers and may detect meaningful physical activity. Aim: To identify whether daily pedometer step count can identify severe physical inactivity in COPD. Method: 36 successive COPD patients consented to wear a pedometer (YamaxDigiwalker®CW700) and acclerometer (Sensewear®) concurrently for one week. Physical activity level (PAL) was calculated from accelerometers. The relationship between daily pedometer step count and PAL was assessed using Spearman's correlation. Receiver Operator Characteristic plots were used to identify if daily pedometer step count could predict PAL<1.4 (severe physical inactivity). Results: Baseline characteristics: 26M/10F; age 69±7.9 years; FEV_1 48.1±18%; incremental shuttle walk 227.8±138.7m; COPD Assessment Tool 21.5±7.0; daily pedometer step count 3129±2626; PAL 1.42±0.2. There was a significant correlation between daily pedometer step count and PAL (r=0.58, p<0.001). AUC was 0.88 (p<0.001). A step count <2767 had 90% sensitivity and 94% specificity in predicting PAL<1.4 with positive and negative predictive values of 94.4% and 93.8% respectively.

Conclusion: Pedometers are a simple way of identifying severe physical inactivity in COPD.