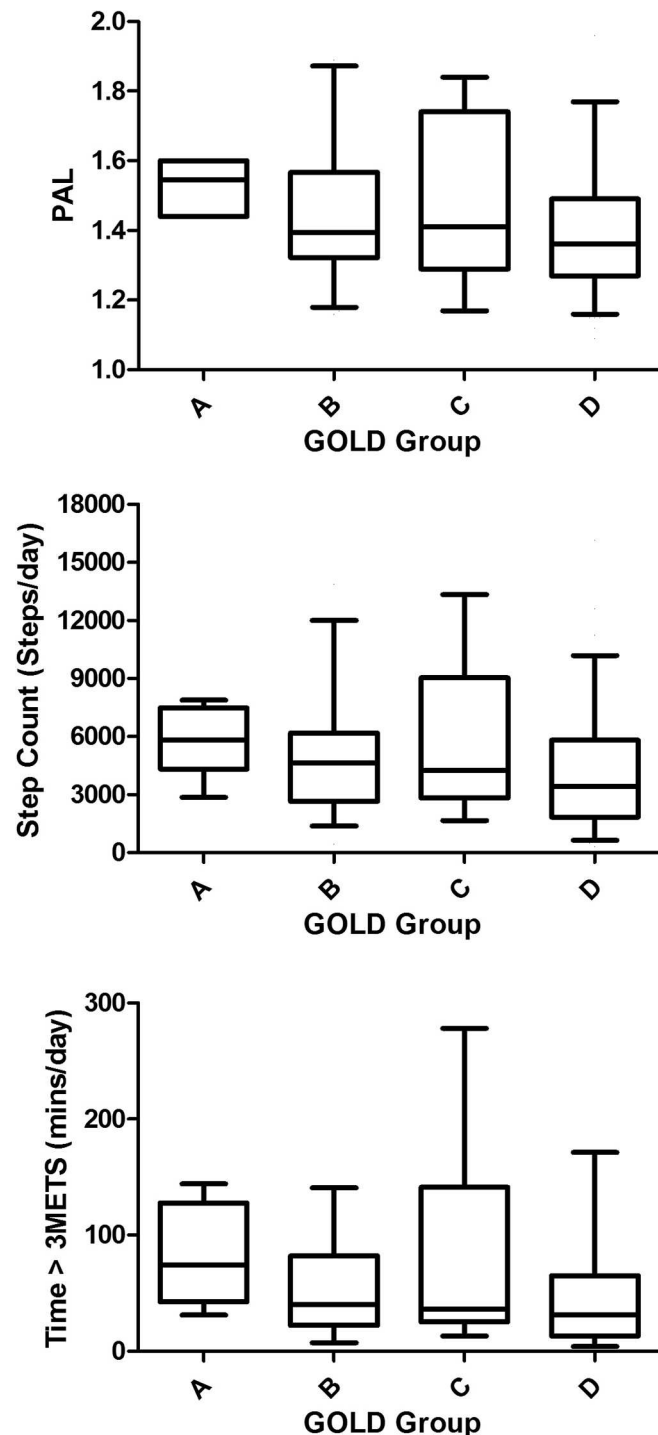


**P36 PHYSICAL ACTIVITY LEVELS ACCORDING TO GOLD GROUPING IN PATIENTS WITH COPD**

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10.1136/thoraxjnl-2013-204457.186

**Background** The updated Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines recognise the limitations of using grading systems based on spirometry alone. Understanding the impact of COPD on an individual patient should combine symptomatic assessment (using MRC Dyspnoea scale or COPD Assessment Test), spirometric classification and/or risk of



Abstract P36 Figure 1.

exacerbations. GOLD recommends classifying patients into four groups: A (Low Risk, Less Symptoms), B (Low Risk, More Symptoms), C (High Risk, Less Symptoms) and D (High Risk, More Symptoms). Physical inactivity level is an important predictor for hospital admissions and mortality in patients with COPD. The aim of the study was to document objective physical activity parameters according to GOLD grouping. We hypothesised that physical activity levels would be highest in Group A and lowest in Group D.

**Methods** 220 patients with COPD (mean age 69 years, 81F:139M, mean FEV1 51%predicted) were classified into GOLD groups A-D. Physical activity (PA) was measured for seven days using an accelerometer (Sensewear®) as previously described (Watz *et al.*, 2009). Physical activity parameters were analysed by researcher blinded to GOLD grouping, and included physical activity level (PAL: Total energy expenditure / resting energy expenditure), step count (steps per day) and time spent in at least moderate activity, defined as greater than 3 METS. Kruskal-Wallis was used to compare physical activity parameters across groups and Dunn's multiple comparison post-hoc test to compare between individual groups.

**Results** Parameters of physical activity according to GOLD group are shown in Figure 1. Although multiple group comparison showed significant differences in physical activity (PAL:  $p = 0.04$ , Step Count:  $p = 0.005$ , 3METS:  $p = 0.02$ ), post-hoc tests revealed no significant differences in PAL or 3METS between individual groups. For step count, there was a significant difference in rank sum between groups B and D ( $p < 0.05$ ), but not between any other individual group comparisons.

**Conclusions** There are complex and multifactorial determinants of physical activity levels in patients with COPD which cannot be distinguished by new GOLD grouping.

**P37 CHANGES IN DAILY PHYSICAL ACTIVITY IN COPD**

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10.1136/thoraxjnl-2013-204457.187

**Background** COPD is associated with extrapulmonary manifestations that worsen patient's daily physical activity (DPA)(1). However, changes in DPA over time and contributing factors in this population have not been established. We hypothesise that patients with COPD would have lower DPA after one year.

**Method** As part of a longitudinal study in COPD (ARCADE), DPA was recorded as the number of steps using a multisensor armband (SenseWear Pro armband) in 28 patients with stable COPD for 7 days and repeated after one year for a further 7 days. Spirometry, body composition, handgrip strength (HGS), six-minute walk distance (6MWD), the COPD assessment test (CAT) were also recorded.

**Results** Patients mean (SD) age was 69 (7) years, BMI 27.2 (4.7) Kg/m<sup>2</sup> and FEV<sub>1</sub>% predicted 52 (15). After one year, there was a reduction in the number of daily steps by 498 (218) steps and fat free mass (FFM) 1.10 (1.75) kg, with an increase in fat mass (FM) 1.06 (2.24) kg and FFM/FM 0.11 (01), all  $p < 0.01$ . No changes were observed in FEV<sub>1</sub>%, BMI, HGS or 6MWD. The rate of decline in the number of steps was 12.3% per year which related to baseline FFM,  $r = -0.51$  and HGS,  $r = -0.53$ , all  $p < 0.01$ . Linear regression analysis showed that FFM and HGS can predict 23% and 26% respectively of the variability in the reduction in the number of steps.

**Conclusion** There was a significant reduction in daily physical activity after one year, which related to baseline FFM and HGS, but was not associated with lung function and 6MWD. Despite