maintaining the BMI level, there was a fat free mass turnover, which may indicate a hidden muscle catabolism. Therefore, early management to prevent muscle mass loss would improve patient's daily physical activity and quality of health.

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P38 IS IT POSSIBLE TO PREDICT AMBULATORY OXYGEN (AO) REQUIREMENTS?

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Aim To determine whether AO flow rate requirements can be predicted in patients with chronic lung diseases.

Background The process for AO assessment as per current UK guidance can be extremely time consuming, necessitating multiple walking tests with significant rest periods between walks. We set out to explore whether a model could accurately predict the AO flow rate required to abolish/minimise desaturation, thus simplifying the process.

Method Retrospective data were analysed for all patients who attended AO clinic from April 2009 to January 2013. AO needs were assessed as per current UK guidance. For those who met the criteria for AO (n = 100), resting SpO₂, desaturation on the endurance shuttle walk test (ESWT) and AO flow rate required to minimise this desaturation were recorded, along with age and diagnosis.

Results Multiple regression analysis was undertaken to test how well the variables included in the data could predict the likely level of AO required. A range of models were constructed and tested against the actual AO flow rate that had been required. The model which accounted for the greatest proportion of the variance (r = 0.671, F = 79.40, p < 0.05) included only one variable, the level of oxygen desaturation on room air post ESWT. Adding additional variable to the model, such as age and resting SpO₂ did not add significantly to the predictive power of the model.

Conclusion Using this model, 91% of patients were predicted correctly with an error of +/- 1L of the actual flow rate. It would therefore, 9 times out of 10, give a flow rate that was either correct (+/- 1L). Use of this model will reduce the number of walking tests required when performing AO assessment, saving both time and valuable healthcare resources.

P39 A COMPARISON OF THE REPEATABILITY AND RESPONSIVENESS OF FIELD AND LABORATORY INCREMENTAL EXERCISE TESTS BETWEEN COPD AND CHRONIC HEART FAILURE

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Aim To describe and compare the repeatability and responsiveness of the Incremental Shuttle Walk Test (ISWT) and incremental cardiopulmonary exercise test between COPD and Chronic Heart Failure (CHF).

Hypothesis The null hypothesis, no difference in the measurement properties of ISWT and ICE between two chronic diseases.

Methods Patients with symptomatic COPD and CHF (MRC 2 or NYHA II and above, respectively) were recruited. All patients underwent seven weeks of PR (1). At baseline, participants performed a familiarisation ISWT, two ISWTs and two incremental,

Abstract P39 Figure 1 repeatability of the ISWT distance and ICF VO₂pk in COPD and CHF

symptom-limited, cardiopulmonary exercise tests on a cycle ergometer (ICE) within two weeks, on separate days. Both tests were repeated after seven weeks of PR.

Results 55 patients with COPD (70% male, mean [SD] age 73 [9] yr, FEV₁ %predicted 43 [15], FEV₁/FVC 50 [9]) and 44 patients with CHF (66% male, age 71 [11] yr, LVEF 33 [10]%) were recruited.

There was a significant increase mean [SE] of 20 [4] m between the familiarisation ISWT and ISWT1 (p < 0.001). There was no difference between either, ISWT1 and ISWT2, 2 (4) m (p = 0.10), or peak oxygen uptake (VO₂pk) for ICE1 and ICE2, 20 [10] ml·min⁻¹ (p = 0.16). There was no effect of disease, p = 0.11 and p = 0.47, respectively. Figure 1 shows the repeatability for the ISWT and ICE VO₂pk in both conditions.

Mean [95%CI] change in ISWT after PR was 68 [50–95] m, effect size (ES) 0.58 (p < 0.001) and 62 [35–89] m, effect size