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**Title:** Pulmonary rehabilitation (PR) exercise tolerance improvement: Differences between interstitial lung disease (ILD) and chronic obstructive pulmonary disease (COPD)

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**Body:** Background: There is evidence to suggest that PR is beneficial for patients with chronic lung diseases other than COPD (ATS/ERS Statement on Pulmonary Rehabilitation 2006, National Institute for Health and Clinical Excellence Interstitial Lung Disease consultation document 2013). However, there is little evidence regarding the magnitude of improvement in patients with ILD relative to those with COPD. Aim: To determine whether exercise tolerance improvement following PR differs significantly between ILD and COPD patients who participate in the same PR programmes. Method: Retrospective exercise tolerance test (Endurance Shuttle Walk Test (ESWT)) data for all patients completing our 3 site PR programme from February 2005 to December 2012 were analysed. Practice walks were performed. Results were compared between the ILD and COPD patients using independent sample two-tailed t-tests on data for pre-PR ESWT, post-PR ESWT and ESWT change. Results: Of 495 patients with complete data, 55 had ILD and 440 COPD. Both groups had large improvements, with no significant differences between group ESWT pre PR ( $t = -0.049$ ,  $p = 0.961$ ), post PR ( $t = -0.227$ ,  $p = 0.820$ ) or change in ESWT ( $t = -0.228$ ,  $p = 0.820$ ).

ESWT results

|      | No. | Mean(SD) Pre PR (m) | Mean(SD) Post PR (m) | Mean(SD) Change (m) |
|------|-----|---------------------|----------------------|---------------------|
| COPD | 440 | 365 (339)           | 804 (605)            | 440 (530)           |
| ILD  | 55  | 363 (309)           | 785 (502)            | 422 (443)           |

**Conclusions:** These data suggest that patients with ILD gain equal benefit in exercise tolerance from PR to patients with COPD. ILD patients with a reduced exercise tolerance should be included and referred for PR.