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**Title:** Endurance time is the most sensitive exercise measurement for evaluating pulmonary rehabilitation efficacy in patients with idiopathic pulmonary fibrosis

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**Body:** Study objective: Pulmonary rehabilitation (PR) has been reported useful for improving exercise capacity and HRQoL in patients with idiopathic pulmonary fibrosis (IPF). It is unknown which exercise measurements are more suitable for evaluating PR efficacy in IPF patients. The purpose of the present study was to compare the characteristics of five exercise measurements in evaluating the efficacy of PR in IPF patients. Methods: We performed a case-control study in which 53 IPF patients were divided into the PR group and the control group (C group). The PR group underwent the 10-weeks PR program involving exercise training and muscle training. The C group was no intervention for 10-weeks. Five exercise measurements (endurance time by constant load ergometry test, peak work rate and peak VO<sub>2</sub> by incremental load ergometry test, the distance of 6 minutes walking test (6MWD) and incremental shuttle walking test (ISWD)) were evaluated at baseline and following 10-weeks after. Results: In each group, 24 patients were completed five exercise measurements at baseline and following 10-weeks after. Lung function data and exercise capacity in baseline were no difference between two groups. In the PR group, endurance time, peak work rate, 6MWD and ISWD were improved significantly after 10-weeks (p<0.01), whereas peak VO<sub>2</sub> was not improved. In the control group, all five measurements remained unchanged. In the PR group, endurance time was the most sensitive for improvement rate among five measurements. Conclusions: PR improves exercise capacity and endurance time is the most sensitive exercise measurement for evaluating PR efficacy in IPF patients.