

Supplementary material

A first look at the reliability, validity and responsiveness of L-PF-35 Dyspnea domain scores in
fibrotic hypersensitivity pneumonitis

Hypotheses tested for the L-35 Dyspnea domain scores

The UCSD, SGRQ Activity domain, FVC% and DLCO% were anchors for L-PF-35 Dyspnea domain analyses. For certain analyses, we focused on 26 and 52 weeks, because those are the durations most often employed in fILD trials.

- 1) Internal consistency at baseline > 0.8 and test-retest reliability at 26 weeks > 0.75 (excellent). 0.7 is the acceptability criterion for both.
- 2) Pairwise correlations between the L-PF-35 Dyspnea domain and anchor variables ≥ 0.3 at baseline. We expected positive correlations for the UCSD and SGRQ Activity domain and negative correlations for FVC% and DLCO%.
- 3) At baseline, L-PF-35 Dyspnea domain scores will be significantly associated with the anchors, and subjects in the most severely impaired anchor subgroup would have significantly worse (higher and by at least 1 standard deviation) L-PF-35 Dyspnea scores than subjects in the least severely impaired anchor subgroup.
- 4) Pairwise correlations between L-PF-35 Dyspnea change and anchor change will be ≥ 0.3 at 26 and 52 weeks.
- 5) Longitudinal models will show statistically significant associations between L-PF-35 Dyspnea change and anchor change over time.
- 6) According to eCDF plots, for 6 point worsening in L-PF-35 Dyspnea score at 26, there would be a greater proportion of subjects in the “worse” anchor group compared with the “not worse” anchor group. We used 6 points based on the previously published estimate for the L-PF-44 Dyspnea domain score MWPC.

Table S1. Internal consistency and test-retest coefficients for L-PF scores

Score	<u>Week</u>					Definition of Stability from Baseline to 26 Weeks for each Anchor	ICC (2,1) 26 Weeks
	Base	13	26	39	52		
L-PF Dyspnea domain	0.85	0.85	0.91	0.91	0.91	-5 < Δ UCSD < 5 (N=16) -5 < Δ SGRQ Activity < 5 (N=7) -2 $\leq \Delta$ FVC% $\leq$ 2 (N=15) -5 < Δ DLCO% < 5 (N=11)	0.86 (0.65, 0.95) 0.86 (0.48, 0.98) 0.81 (0.53, 0.93) 0.88 (0.61, 0.97)

L-PF = Living with Pulmonary Fibrosis; UCSD = University of California San Diego Shortness of Breath Questionnaire; SGRQ = St. George's Respiratory Questionnaire; FVC% = percent predicted forced vital capacity; DLCO% = percent predicted diffusing capacity of the lung for carbon monoxide; ICC (2,1) = intra-class correlation coefficient (two-way mixed-effects model for absolute agreement) for test-retest reliability of L-PF-35 Dyspnea domain scores from baseline to 26 weeks.

Table S2. Pairwise correlations among change scores for L-PF, UCSD, SGRQ, FVC% and DLCO%

	Week	FVC% Δ	DLCO% Δ	UCSDΔ	SGRQact Δ
LPF Dyspnea Δ	13	-0.38, 0.02	-	0.55, 0.0003	0.27, 0.09
	26	-0.53, 0.001	-0.46, 0.006	0.34, 0.03	0.55, 0.0003
	39	-0.57, 0.001	-	0.53, 0.0008	0.42, 0.01
	52	-0.21, 0.24	-0.46, 0.006	0.49, 0.004	0.37, 0.03

Values = correlation coefficient, p value; FVC% Δ = change in percentage of the predicted forced vital capacity; DLCO% Δ = change in percentage of the predicted diffusing capacity of the lung for carbon monoxide; UCSD Δ = change in University of California San Diego Shortness of Breath Questionnaire; SGRQact Δ = change in SGRQ Activity score

Table S3. Responsiveness of L-PF-35 scores as demonstrated by outcomes of longitudinal models of change in L-PF-35 scores using change in anchor as lone predictor

L-PF-35 score	Anchor	Coefficient $\pm$ Standard Error, p value
Dyspnea domain	UCSD	0.63 $\pm$ 0.07, <00001
	SGRQact	0.57 $\pm$ 0.10, <0.0001
	FVC%	-1.43 $\pm$ 0.26, <0.0001
	DLCO%	-1.14 $\pm$ 0.18, <0.0001

FVC% = percentage of the predicted forced vital capacity; DLCO% = percentage of the predicted diffusing capacity of the lung for carbon monoxide; L-PF = Living with Pulmonary Fibrosis Questionnaire; SGRQ = St. George's Respiratory Questionnaire Activity domain score; UCSD = University of California San Diego Shortness of Breath Questionnaire; models show the relationship between baseline-to-weeks 13/26/39/52 changes in L-PF-35 Dyspnea domain scores and baseline-to-weeks 13/26/39/52 changes in anchor values