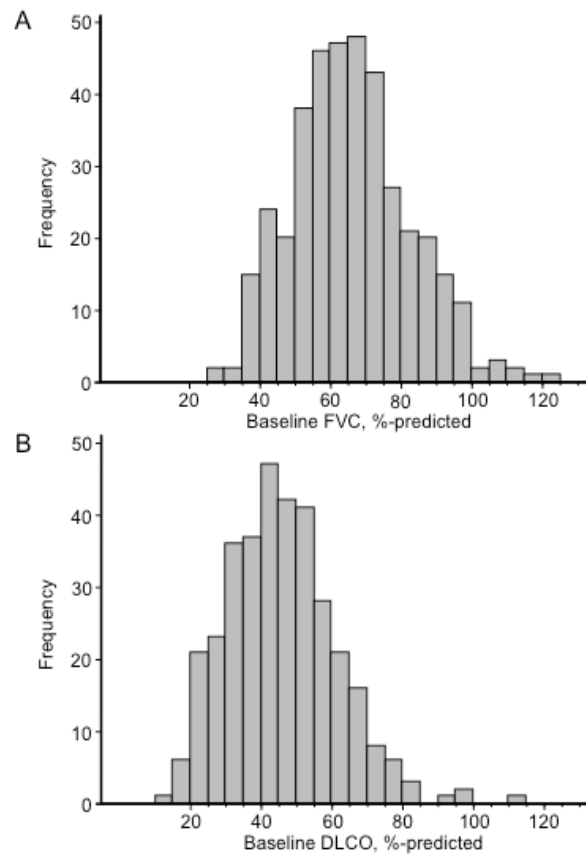


ONLINE SUPPLEMENTARY MATERIAL for:

**Relative versus absolute change in forced vital capacity
in idiopathic pulmonary fibrosis**

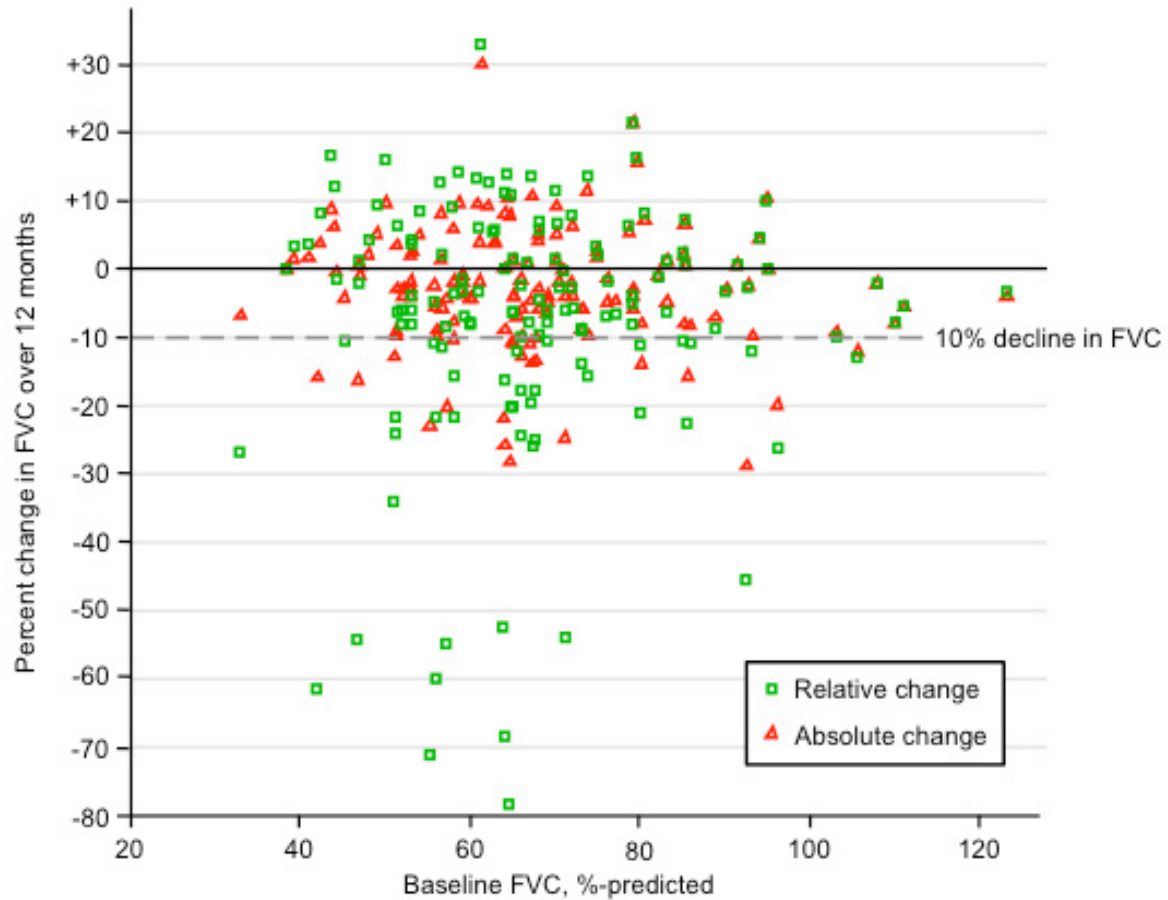
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SUPPLEMENTARY FIGURE LEGENDS**Supplementary Figure 1: Distribution of baseline FVC (panel A) and DLCO (panel B) values.**

Histograms demonstrate a broad and normal (Gaussian) distribution of baseline FVC and DLCO %-predicted values with a mean (standard deviation) of 67.6% (16.1) and 48.5% (15.1), respectively (n = 142).

Abbreviations: FVC = forced vital capacity; DLCO = diffusion capacity for carbon monoxide.

Supplementary Figure 2: Association between baseline FVC and change in FVC for different methods of calculation.



The relationship between baseline FVC %-predicted (x axis) and change in FVC over 12 months (y axis) is demonstrated for each patient using both methods. Squares represent relative change in %-predicted and triangles represent absolute change in %-predicted. Change in FVC values are calculated as follow-up FVC minus baseline FVC (i.e. a negative value corresponds to a decline in FVC). The dashed horizontal line represents a 10% decline in FVC.

Abbreviations: FVC = forced vital capacity.

Supplementary Table 1: Relationship of $\geq 10\%$ decline in FVC in liters at 12-months with primary and secondary outcomes

	Death or Transplant*		Death [¶]	
	OR/HR	Adjusted OR/HR [‡]	OR/HR	Adjusted OR/HR*
Two-year	2.47 (1.10 to 5.53)	3.43 (1.14 to 10.31)	2.15 (0.96 to 5.24)	2.99 (0.92 to 9.68)
One-year	2.69 (1.06 to 6.81)	2.73 (0.86 to 8.64)	2.15 (0.78 to 5.93)	1.93 (0.54 to 6.94)
Time to event	2.59 (1.60 to 4.21)	3.54 (2.04 to 6.15)	1.94 (1.13 to 3.35)	2.78 (1.48 to 5.24)

*Data are shown as odds ratio (OR) and 95% confidence interval for death or transplant at two years, death at two years, death or transplant at one year, and death at one year.

[¶]Data are shown as hazard ratio (HR) and 95% confidence intervals for time to transplant or death and time to death.

[‡] Adjustment made for gender and baseline age, oxygen use, FVC, and DLCO.

Abbreviations: FVC = forced vital capacity.

Supplementary Table 2: Frequency of $\geq 5\%$, $\geq 10\%$ and $\geq 15\%$ decline in FVC at 12 months in high and low baseline FVC subgroups

	12-month change in FVC (n=142)								
Method of Calculation	$\geq 5\%$ decline			$\geq 10\%$ decline			$\geq 15\%$ decline		
	Below Median FVC% (n=71)	Above median FVC% (n=71)	p value	Below median FVC% (n=71)	Above median FVC% (n=71)	p value	Below median FVC% (n=71)	Above median FVC% (n=71)	p value
Relative change	33 (46.5%)	37 (52.1%)	0.50	22 (31.0%)	21 (29.6%)	0.86	18 (25.4%)	12 (16.9%)	0.22
Absolute change	21 (29.6%)	31 (43.7%)	0.08	12 (16.9%)	14 (19.7%)	0.66	7 (9.9%)	4 (5.6%)	0.53

Data presented as number of patients (percentage of patients) meeting the stated threshold.

Abbreviations: FVC% = forced vital capacity, % predicted.

Supplementary Table 3: Relationship of ≥5% decline in FVC at 12-months with primary and secondary outcomes

	Death or Transplant		Death	
	OR/HR	Adjusted OR/HR*	OR/HR	Adjusted OR/HR*
Two-year				
Relative change	2.09 (0.96 to 4.55)	2.76 (0.98 to 7.80)	1.85 (0.82 to 4.17)	2.37 (0.78 to 7.20)
Absolute change	2.04 (0.93 to 4.48)	5.21 (1.64 to 16.60)	1.89 (0.83 to 4.32)	4.76 (1.39 to 16.26)
One-year				
Relative change	2.45 (0.93 to 6.46)	2.56 (0.80 to 8.23)	1.80 (0.65 to 4.96)	1.52 (0.45 to 5.19)
Absolute change	2.34 (0.93 to 5.88)	2.97 (0.92 to 9.55)	1.95 (0.72 to 5.30)	2.21 (0.62 to 7.84)

Time to event				
Relative change	1.57 (0.98 to 2.49)	1.91 (1.12 to 3.26)	1.31 (0.78 to 2.19)	1.61 (0.89 to 2.92)
Absolute change	1.76 (1.10 to 2.81)	3.24 (1.84 to 5.69)	1.49 (0.88 to 2.53)	2.89 (1.53 to 5.46)

Data are shown as odds ratio (OR) and 95% confidence interval for death or transplant at two years, death at two years, death or transplant at one year, and death at one year. Data are shown as hazard ratio (HR) and 95% confidence intervals for time to transplant or death and time to death.

*Adjustment made for gender and baseline age, oxygen use, FVC, and DLCO.

Abbreviations: FVC = forced vital capacity.

Supplementary Table 4: Relationship of $\geq 10\%$ decline in FVC at 12-months with primary and secondary outcomes

	Death or Transplant		Death	
	OR/HR	Adjusted OR/HR*	OR/HR	Adjusted OR/HR*
Two-year				
Relative change	2.47 (1.10 to 5.53)	3.39 (1.14 to 10.07)	1.85 (0.82 to 4.17)	2.84 (0.89 to 9.06)
Absolute change	3.10 (1.22 to 7.89)	4.52 (1.27 to 16.12)	1.89 (0.83 to 4.32)	4.70 (1.21 to 18.27)
One-year				
Relative change	2.69 (1.06 to 6.81)	2.81 (0.89 to 8.87)	1.80 (0.65 to 4.96)	1.91 (0.54 to 6.81)
Absolute change	4.11 (1.52 to 11.10)	3.65 (1.02 to 12.99)	3.78 (1.29 to 11.11)	3.41 (0.84 to 13.76)

Time to event				
Relative change	2.46 (1.52 to 4.00)	3.38 (1.93 to 5.90)	1.95 (1.13 to 3.37)	2.75 (1.46 to 5.17)
Absolute change	2.51 (1.46 to 4.32)	3.27 (1.77 to 6.05)	1.87 (0.99 to 3.56)	2.41 (1.15 to 5.05)

Data are shown as odds ratio (OR) and 95% confidence interval for death or transplant at two years, death at two years, death or transplant at one year, and death at one year. Data are shown as hazard ratio (HR) and 95% confidence intervals for time to transplant or death and time to death.

*Adjustment made for gender and baseline age, oxygen use, FVC, and DLCO.

Abbreviations: FVC = forced vital capacity.

Supplementary Table 5: Relationship of $\geq 15\%$ decline in FVC at 12-months with primary and secondary outcomes

	Death or Transplant		Death	
	OR/HR	Adjusted OR/HR*	OR/HR	Adjusted OR/HR*
Two-year				
Relative change	3.55 (1.45 to 8.71)	4.31 (1.30 to 14.29)	3.45 (1.36 to 8.86)	4.56 (1.28 to 16.28)
Absolute change	3.00 (0.85 to 10.53)	1.75 (0.33 to 9.40)	2.86 (0.77 to 10.61)	1.98 (0.34 to 11.41)
One-year				
Relative change	4.08 (1.55 to 10.74)	3.08 (0.94 to 10.11)	3.92 (1.38 to 11.17)	2.89 (0.78 to 10.62)
Absolute change	5.49 (1.51 to 19.98)	3.36 (0.60 to 18.73)	5.33 (1.34 to 21.24)	4.39 (0.68 to 28.52)

Time to event				
Relative change	2.97 (1.78 to 4.96)	3.50 (1.94 to 6.31)	2.43 (1.35 to 4.37)	3.18 (1.62 to 6.26)
Absolute change	2.55 (1.27 to 5.15)	2.44 (1.12 to 5.32)	2.43 (1.10 to 5.36)	2.49 (1.02 to 6.06)

Data are shown as odds ratio (OR) and 95% confidence interval for death or transplant at two years, death at two years, death or transplant at one year, and death at one year. Data are shown as hazard ratio (HR) and 95% confidence intervals for time to transplant or death and time to death.

*Adjustment made for gender and baseline age, oxygen use, FVC, and DLCO.

Abbreviations: FVC = forced vital capacity.