



### Automated CT Scan Scores of Bronchiectasis and Air Trapping in Cystic Fibrosis

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#### RESULTS

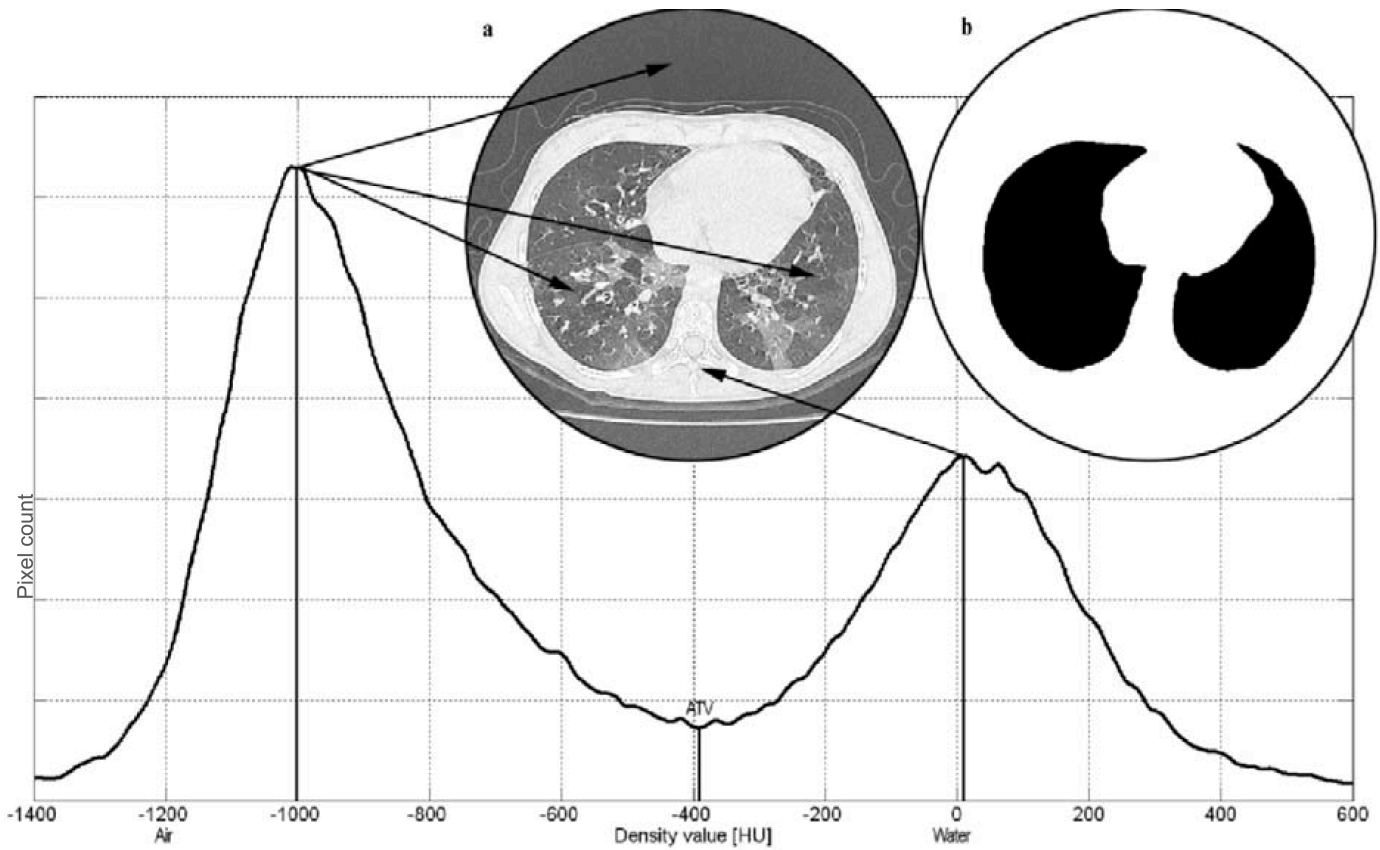
Bland Altman plots of interrater reliability are included in e-Figure 4.

**e-Table 1.** Airway counts correlate with lung function and sputum inflammatory markers

	FVC %Pred		FEV <sub>1</sub> %Pred		FEF <sub>25-75</sub> %Pred		Neutrophil Elastase		MMP-9	
	r	95% CI	r	95% CI	r	95% CI	r	95% CI	r	95% CI
<b>Total Airways</b>	-0.58	-0.76, -0.30*	-0.41	-0.65, -0.09*	0.11	-0.23, 0.43	0.55	0.22, 0.77*	-0.05	-0.38, 0.3
<b>Central Airways</b>	-0.55	-0.75, -0.27*	-0.37	-0.62, -0.04*	0.15	-0.19, 0.46	0.54	0.21, 0.76*	-0.03	-0.37, 0.32
<b>Peripheral Airways</b>	-0.59	-0.77, -0.32*	-0.47	-0.69, -0.16*	0.01	-0.33, 0.34	0.51	0.16, 0.74*	-0.08	-0.42, 0.27

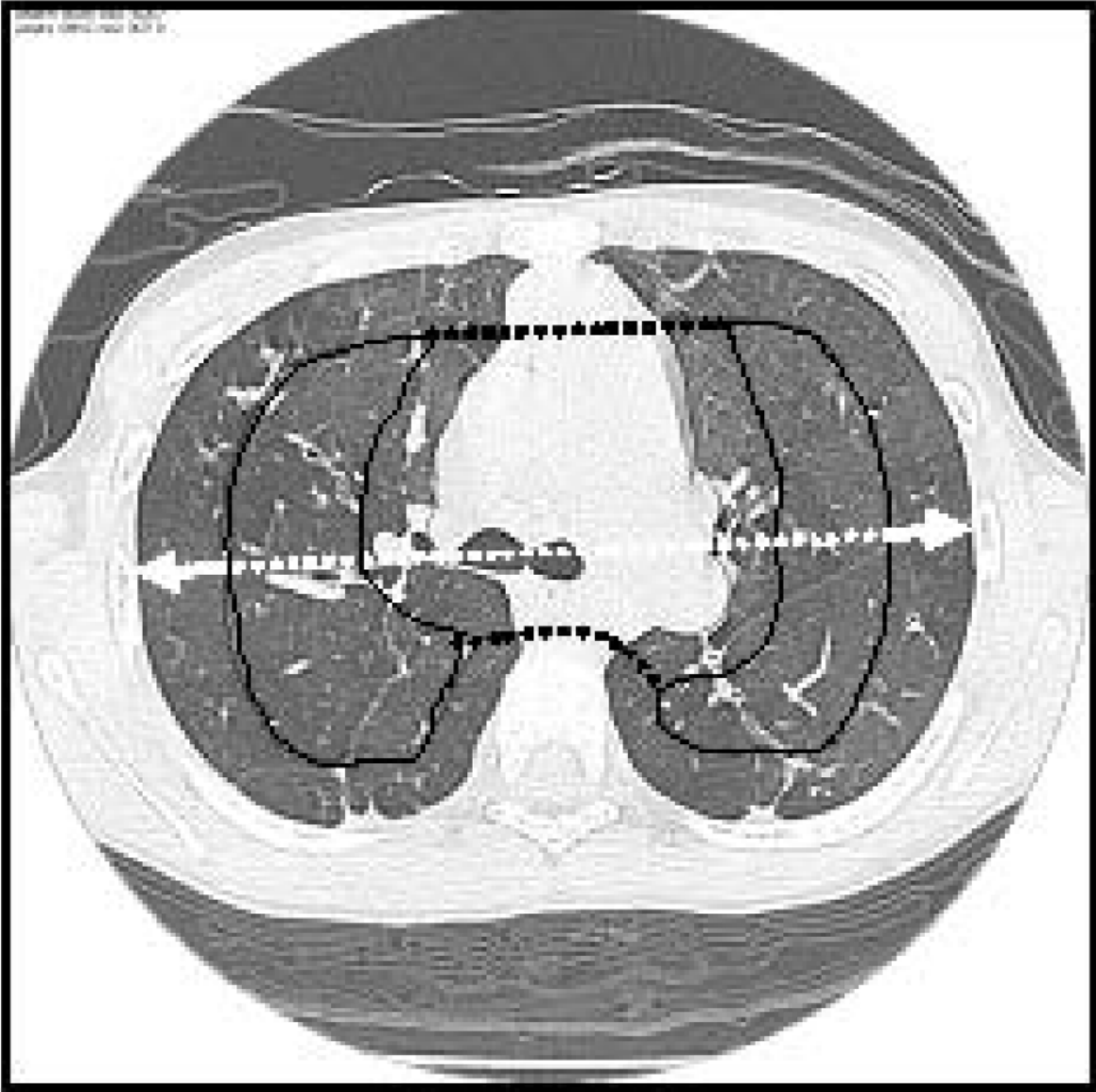
\* Confidence intervals do not include 0.0, p-value < 0.05

Abbreviations: forced vital capacity (FVC); forced expiratory volume in 1 second (FEV<sub>1</sub>); mid-volume forced expiratory flow (FEF<sub>25-75</sub>); matrix metalloprotease (MMP)



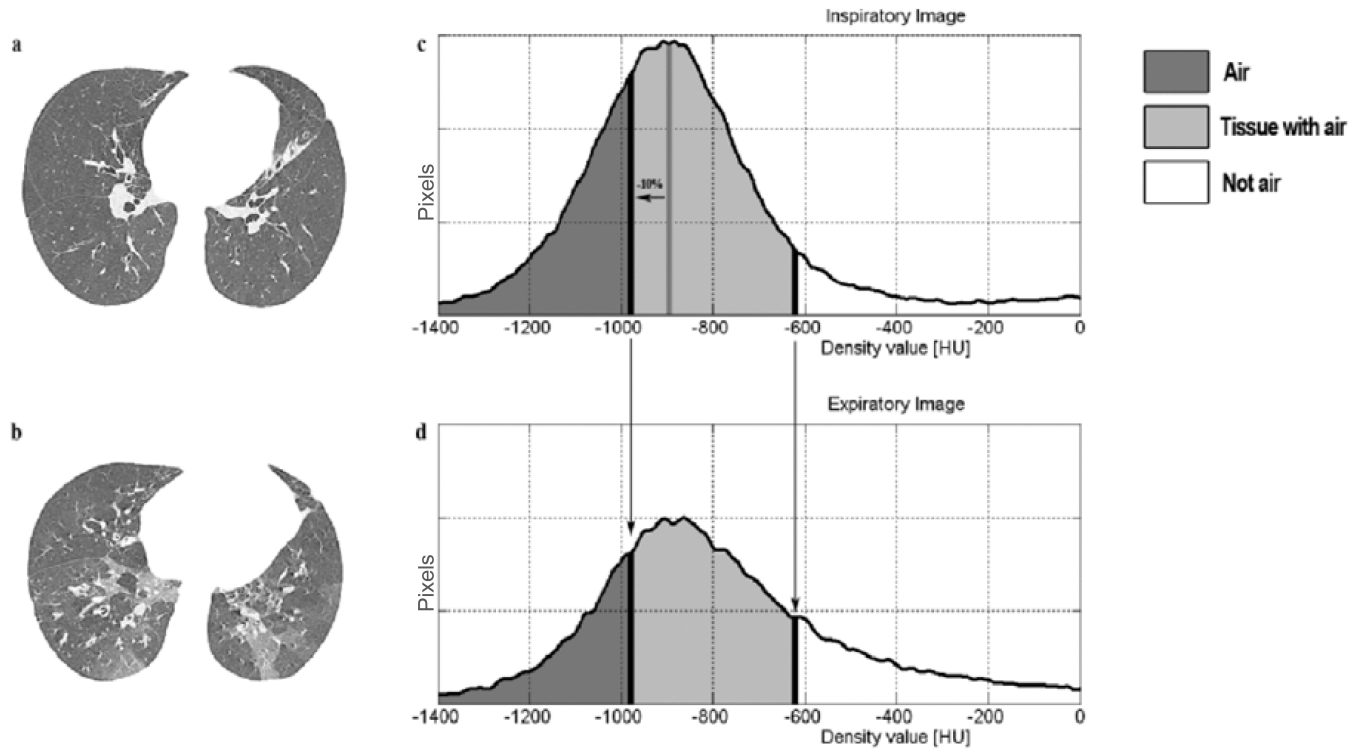
**e-Figure 1.** Histogram of all pixels in an axial CT slice. Peaks are seen at the dense maximum of body tissue and the less dense maximum of air-filled spaces seen in (a). All pixels below the minimum air threshold value (ATV) are used to create the lung segmentation (b).

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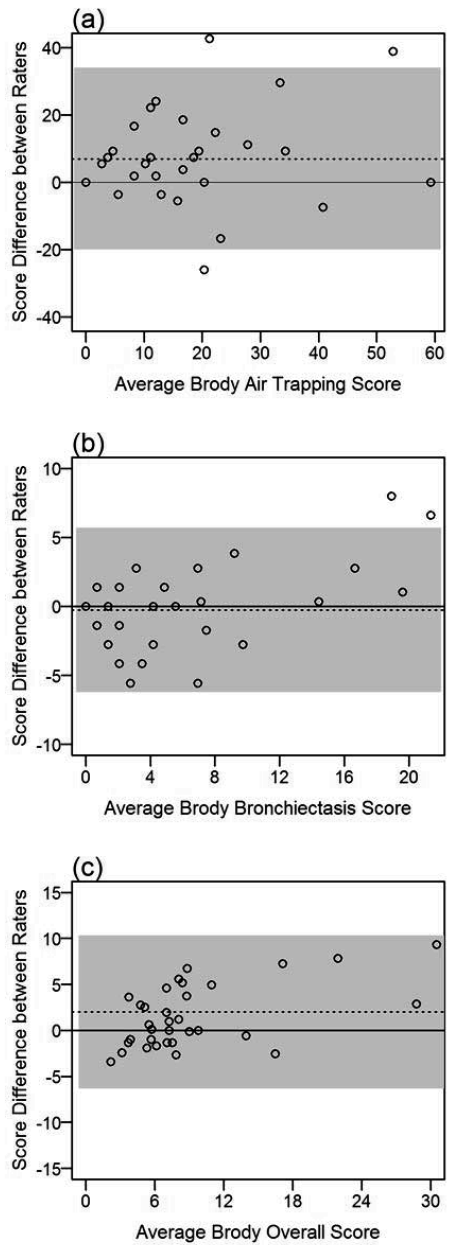
**e-Figure 2.** Inspiratory CT slice with lung separation into central and peripheral regions shown by black solid lines. The white dotted line represents the maximum width of both segmented lungs through the carina. The left and right central regions of center slices are connected as shown by the black dotted line.

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**e-Figure 3.** (a) Inspiratory CT slice. (b) Expiratory CT slice. (c) Inspiratory histogram showing the subject-specific air trapping threshold at 10% below the peak. (d) Expiratory histogram.

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**e-Figure 4.** Bland Altman plots of differences between rater 1 and rater 2 versus average for (a) Brody air trapping, (b) bronchiectasis, and (c) overall scores. Solid line = 0, dashed line= bias, gray region represents 95% limits of agreement.

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