

**Analysis of airway pathology in COPD using a combination of computed
tomography, micro-computed tomography, and histology**

Online supplementary data

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Supplementary Table E1. List of antibodies for immunohistochemistry

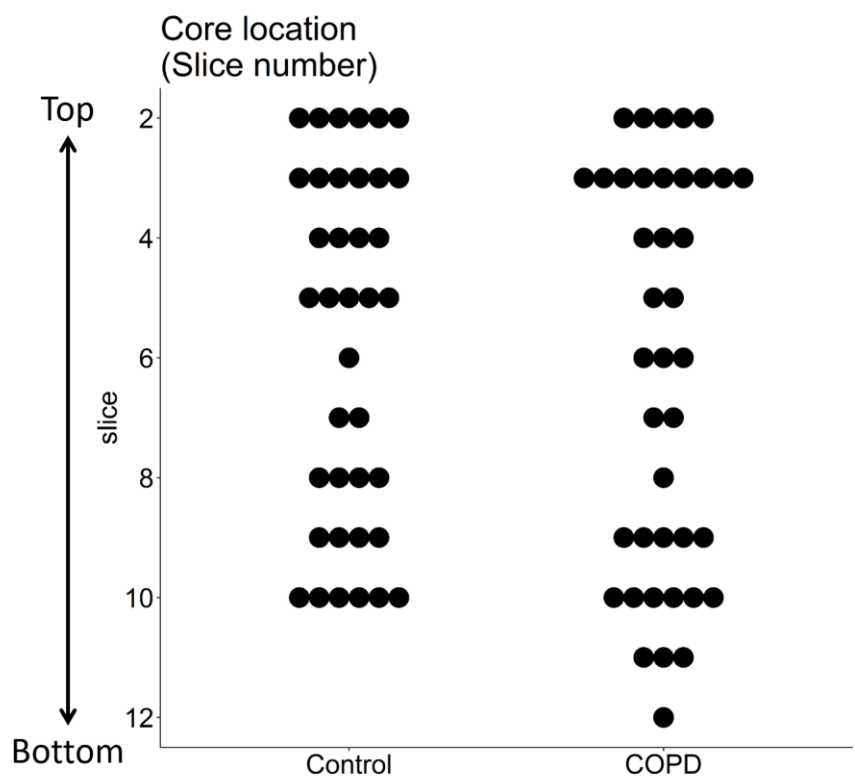
Target	Antibody name	Supplier	Product ID	Dilution
CD8 cell	CD8	Dako	M7103	1:400
CD4 cell	CD4	Dako	M7310	1:200
Neutrophil	Neutrophil Elastase	Dako	M0752	1:400
B cell	CD79 α	Dako	M7050	1:200
Macrophage	CD68	Dako	M0876	1:200

Supplementary Table E2. Relationships between volume fraction of B cell infiltration on histology and structural abnormality on microCT

	TB (n=18)		TB-1 and TB-2 (n=28)	
	r	p value	r	p value
No. alveolar attachments	0.12	0.63	-0.39	0.04
No. alveolar attachments /outer perimeter	-0.04	0.87	-0.45	0.02
Wall thickness	-0.13	0.60	0.31	0.11
Luminal area	0.09	0.72	-0.03	0.88

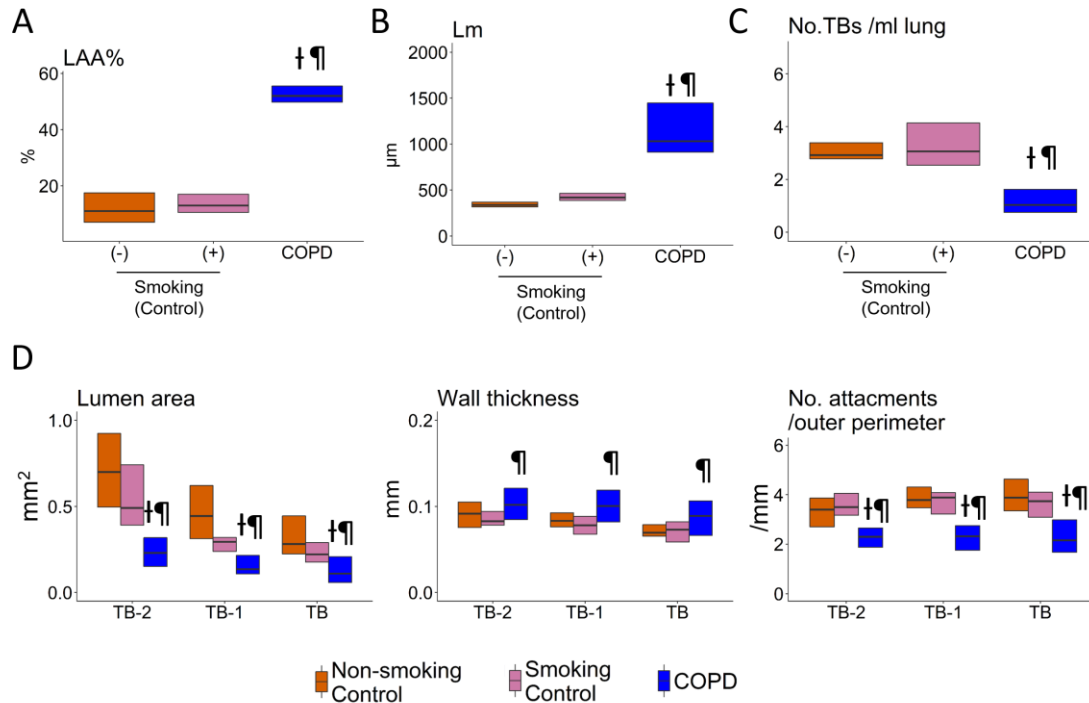
The Pearson correlation tests were performed after log-transformation of volume fractions of B cells for the terminal bronchioles (TB) as well as the preterminal (TB-1) and pre-preterminal (TB-2) bronchioles.

Supplementary Figure E1. Distribution of positions of sample cores from the top to bottom of lungs



Explanted frozen whole lungs were cut into 2cm-thick transverse slices from apex to base, which were incrementally numbered from 1. The distribution of the positions of sample cores within the lungs was not different between control and COPD.

Supplementary Figure E2. MDCT and MicroCT analysis of airways in COPD and controls with and without a smoking history



(A) and (B) show emphysema severity assessed as attenuation values below -950 HU (LAA%) on MDCT and mean linear intercept (Lm) on microCT was greater in COPD than controls with and without a smoking history, and did not differ between controls with and without a smoking history. (D) shows that lumen area and the number of alveolar attachments per mm of outer perimeter were decreased and wall thickness was increased in COPD compared to both control groups. ¶ $p < 0.05$ vs control with a smoking history and † $p < 0.05$ vs control without a smoking history.