

**Supplemental information:**

Supplemental Table 1. Pulmonary function in subjects with mild asymptomatic airway obstruction, patients with mild chronic obstructive pulmonary disease (COPD), and healthy controls expressed as a percentage of the predicted value.

	Asymptomatic airway obstruction (n=20)	COPD (n=20)	Healthy controls (n=20)
Post-BD FEV <sub>1</sub> , % predicted	84.4 ± 3.2 <sup>#</sup>	84.7 ± 3.9 <sup>#</sup>	104.7 ± 4.8
Post-BD FEV <sub>1</sub> /FVC, %	61.4 ± 4.1 <sup>#</sup>	59.3 ± 4.9 <sup>#</sup>	76.9 ± 4.0
Pre-BD pulmonary function			
FEV <sub>1</sub> , % predicted	80.9 ± 3.3 <sup>#</sup>	80.2 ± 3.4 <sup>#</sup>	103.6 ± 4.5
FVC, % predicted	103.5 ± 5.6	104.5 ± 6.1	107.2 ± 5.4
FRC, % predicted	109.5 ± 15.4	118.9 ± 24.5	109.9 ± 21.3
IC, % predicted	115.0 ± 20.1	111.8 ± 27.8	125.8 ± 20.0
FEF <sub>25-75</sub> , % predicted	35.3 ± 7.6 <sup>#</sup>	33.9 ± 8.5 <sup>#</sup>	73.1 ± 15.9
RV, % predicted	100.8 ± 21.3 <sup>*</sup>	123.7 ± 32.4 <sup>#</sup>	101.7 ± 25.3
TLC, % predicted	105.2 ± 8.6	109.3 ± 9.8	108.9 ± 14.6
TLCO, % predicted	81.1 ± 15.9 <sup>#</sup>	81.9 ± 24.3 <sup>#</sup>	96.9 ± 17.1
KCO, % predicted	88.7 ± 13.1 <sup>#</sup>	88.7 ± 21.5 <sup>#</sup>	103.6 ± 14.1

*Definition of abbreviations:* COPD = chronic obstructive pulmonary disease; BD = bronchodilator; FEV<sub>1</sub>= forced expiratory volume in 1 second; FVC = forced vital capacity; FRC = functional residual capacity; IC = inspiratory capacity; FEF<sub>25-75</sub> = maximal mid-expiratory flows; RV = residual volume; TLC = total lung capacity; TLCO = lung transfer for carbon monoxide; KCO = carbon monoxide transfer coefficient. Values are means ± SD.

\*: p < 0.05 vs. COPD; #: p < 0.05 vs. controls

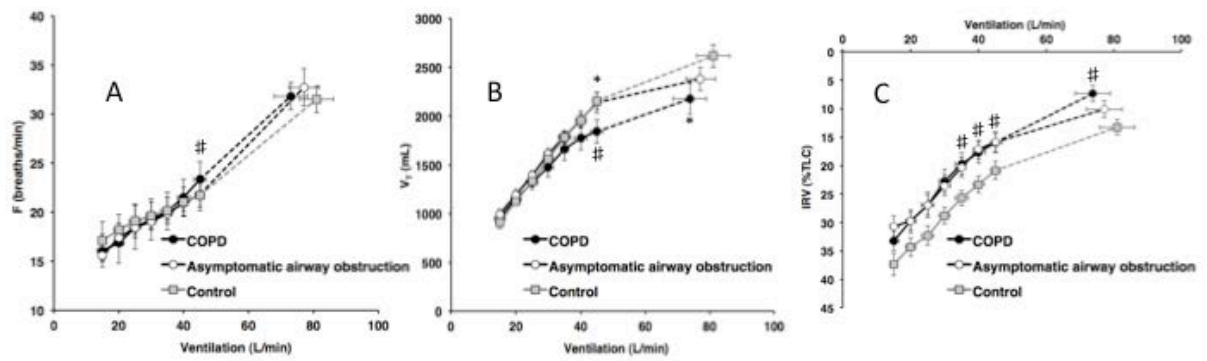
Supplemental Table 2. Measurements at ventilatory threshold

	Asymptomatic airway obstruction (n=20)	COPD (n=20)	Healthy controls (n=20)
Work rate, W	99 ± 28	96 ± 40	107 ± 41
HR, beat/min	125 ± 13	120 ± 14	125 ± 13
V'O <sub>2</sub> , L/min	1.39 ± 0.38	1.35 ± 0.48	1.56 ± 0.42
O <sub>2</sub> pulse, mL O <sub>2</sub> /beat	11.1 ± 2.6	11.2 ± 3.4	12.5 ± 3.2
V'E, L/min (% estimated MVV)	44.6 ± 12.4 (45 ± 12)	42.2 ± 12.8 (44 ± 13)	46.1 ± 11.0 (39 ± 8)
f, breaths/min	20.2 ± 4.7	22.2 ± 7.7	21.0 ± 3.8
VT, L	2.21 ± 0.48	1.90 ± 0.53	2.20 ± 0.49
V'E/V'CO <sub>2</sub>	31.8 ± 4.2	33.6 ± 8.4	30.3 ± 3.5
Dyspnoea, Borg scale	3.8 ± 1.1	4.6 ± 1.3 <sup>#</sup>	2.3 ± 1.7
Leg discomfort, Borg scale	4.2 ± 2.1	4.7 ± 2.1	3.0 ± 0.8

*Definition of abbreviations:* COPD = chronic obstructive pulmonary disease; HR = heart rate; V'O<sub>2</sub> = oxygen uptake; V'E = minute ventilation; MVV = maximal voluntary ventilation; f = respiratory rate; VT = tidal volume; V'E/V'CO<sub>2</sub> = ventilatory equivalents for carbon dioxide.

Values are means ± SD. <sup>#</sup>: p < 0.05 vs. controls

**Supplemental Figure 1.** Tidal volume (VT; panel A), breathing frequency (F; panel B) and inspiratory reserve volume (IRV, expressed as a percentage of total lung capacity [TLC]; panel C) are plotted in relation to minute ventilation. Values are means  $\pm$  SEM. #:  $p < 0.05$  vs. healthy controls ; \*:  $p < 0.05$  vs. COPD patients at a given minute ventilation (Scheffe's tests).



Supplemental Figure 1