**Supplementary appendix to**

# **Effect of breathing oxygen-enriched air on exercise performance in patients with chronic obstructive pulmonary disease. Randomized, placebo-controlled, cross-over trial.**

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| Table S1. Linear regression analysis of change in maximal workload induced by oxygen-enriched air during incremental (ramp) exercise test |
| **Dependent variable = change in maximal workload, watt** | **Univariable analysis** | **Multivariable model** |
| **coefficient** | **95% CI** | **p-value** | **coefficient** | **95% CI** | **p-value** |
| Sex (female = 0, male = 1) | -8.79 | -10.1 to 8.4 | 0.844 |  |  |  |
| Age, years | -0.31 | -1.1 to 0.5 | 0.411 |  |  |  |
| Wmax (air), watt | 0.29 | 0.1 to 0.5 | 0.003 | 0.11 | 0.01 to 0.21 | 0.038 |
| 6MWT, m | 0.03 | -0.02 to 0.1 | 0.251 |  |  |  |
| Pack years smoked, n | 0.51 | -0.1 to 0.2 | 0.517 |  |  |  |
| FEV1, % predicted | 0.27 | 0.1 to 0.5 | 0.018 |  |  |  |
| DLCO, % predicted | 0.13 | -0.2 to 0.5 | 0.452 |  |  |  |
| Body mass index, kg/m2 | -0.36 | -1.5 to 0.8 | 0.521 |  |  |  |
| Test order | 10.7 | 3.2 to 18.2 | 0.008 |  |  |  |
| SpO2 at rest (air), % | 0.46 | -1.7 to 2.6 | 0.662 |  |  |  |
| SpO2 at end of 6MWT, % | 0.62 | -0.3 to 1.5 | 0.150 |  |  |  |
| PaO2, kPa | 2.46 | -1.8 to 6.7 | 0.239 |  |  |  |
| PaCO2, kPa | -2.65 | -10.8 to 5.5 | 0.500 |  |  |  |
| n = 20 patients with chronic obstructive pulmonary disease. Independent variables with p <0.05 in the univariable analysis were included into the multivariable stepwise model. Only maximal workload with ambient air remainded significant in the multivariable model (R2 0.631, p=0.003) as predictor for change in maximal workload with oxygen-enriched air.CI = confidence interval, DLCO = single breath carbon dioxide diffusion capacity, FEV1 = forced expiratory volume in 1 second, 6MWT = 6-minute walk test, SpO2 = oxygen saturation. Test order was defined as first test with air = 0 and oxygen = 1. Pack years smoked corresponds to smoking one pack of 20 cigarettes a day for one year. |

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| **Table S2. Linear regression analysis of change in exercise duration induced by oxygen-enriched air during constant work-rate exercise test** |
| **Dependent variable = change in exercise duration, sec** | **Univariable analysis** |
| **coefficient** | **95% CI** | **p-value** |
| Sex (female = 0, male = 1) | 135 | -183 to 452 | 0.385 |
| Age, years | 4.7 | -32.4 to 22.9 | 0.724 |
| Exercise duration (air), sec | 0.066 | -0.54 to 0.67 | 0.82 |
| 6MWT, m | -0.32 | -2.2 to 1.6 | 0.729 |
| Pack years smoked, n | -1.36 | -7.07 to 4.33 | 0.620 |
| FEV1, % predicted | 3.33 | -5.47 to 12.13 | 0.437 |
| DLCO, % predicted | -1.76 | -12.03 to 15.5 | 0.79 |
| Body mass index, kg/m2 | -19.6 | -59.3 to 20.2 | 0.315 |
| Test order | 248.8 | -49.6 to 547.1 | 0.097 |
| SpO2 at rest (air), % | 19.2 | -54.4 to 92.8 | 0.59 |
| SpO2 at end of 6MWT, % | 11.0 | -20.7 to 42.7 | 0.477 |
| PaO2, kPa | -38.8 | -190.7 to 113.1 | 0.596 |
| PaCO2, kPa | 9.39 | -275.4 to 294.1 | 0.945 |
| n = 20 patients with chronic obstructive pulmonary disease. CI = confidence interval, DLCO = single breath carbon dioxide diffusion capacity, FEV1 = forced expiratory volume in 1 second, 6MWT = 6-minute walk test, SpO2 = peripheral oxygen saturation. Test order was defined as first test with air = 0 and oxygen = 1. Pack years smoked corresponds to smoking one pack of 20 cigarettes a day for one year. |