**Table 1.** Demographic and functional characteristics of study subjects.

| Variable | Smoking controls (n=65) | COPD (n=59) |
|---|---|---|
| Age (years) | 62 ± 7 | 63 ± 6 |
| Sex (% male) | 68 | 75 |
| BMI | 27.0 ± 3.8 | 26.9 ± 4.2 |
| Packyears | 35 ± 22 | 48 ± 22* |
| Current smokers (%) | 50 | 49 |
| Educational level (% high education) | 54 | 49 |
| Socio-economic status (% retired) | 62 | 66 |
| Season of assessment | | |
| Winter (%) | 30 | 31 |
| Spring (%) | 23 | 14 |
| Summer (%) | 16 | 17 |
| Autumn (%) | 31 | 38 |
| $FEV_1$ (L) | 3.04 ± 0.72 | 2.46 ± 0.65* |
| $FEV_1$ (% pred) | 104 ± 15 | 85 ± 17* |
| FVC (L) | 4.02 ± 0.88 | 4.03 ± 0.85 |
| FVC (% pred) | 110 ± 15 | 110 ± 15 |
| $FEV_1$/FVC (%) | 76 ± 4 | 61 ± 7* |
| GOLD stage I/II (n) | | 39/20 |
| Group A (%) | | 100 |
| $FRC/TLC_p$ (%) | 57 ± 10 | 69 ± 14* |
| RV/TLC (%) | 36 ± 7 | 43 ± 7* |
| IC/TLC (%) | 44 ± 7 | 38 ± 7* |
| $T_L$,co (% pred) | 87 ± 13 | 78 ± 17* |
| mMRC 0/mMRC 1 (n) | 36/27 | 28/30 |
| QF (% pred) | 92 ± 17 | 98 ± 21 |
| 6MWD (m) | 609 ± 67 | 588 ± 86 |
| 6MWD (% pred) | 92 ± 9 | 90 ± 11 |
| $VO_2$ peak ($mL*min^{-1}*kg^{-1}$) | 28.2 ± 7.2 | 25.4 ± 5.1* |
| $VO_2$ peak (% pred) | 117 ± 33 | 107 ± 28* |

BMI; Body Mass Index, $FEV_1$; forced expiratory volume in 1 second, FVC; forced vital capacity, Group A (revised GOLD classification); mMRC 0-1, GOLD 1-2 (former GOLD classification) and 0-1 exacerbations per year, FRC; functional residual capacity, $TLC_{(p)}$; (predicted) total lung capacity, RV; residual volume, $TL_{CO}$; diffusion capacity of the lung for carbon monoxide, mMRC; modified Medical Research Council (no subject reported mMRC>1), QF; quadriceps force, 6MWD; six-minute walking distance, $VO_2$ peak; peak oxygen uptake. *$p<0.05$ COPD versus smoking controls.

**Table 2.** Determinants of physical activity in subjects with COPD (n=59).

| Variable | Factor | SEM | Partial $R^2$ | $R^2$ | P |
|---|---|---|---|---|---|
| **STEPS** | | | | | |
| Intercept | -9040 | 3160 | | | |
| 6MWD | 23 | 6 | 0.24 | 0.24 | 0.0002 |
| gender | -3832 | 1149 | 0.11 | 0.35 | 0.0016 |
| $T_L$,co | 591 | 282 | 0.04 | 0.39 | 0.04 |
| Daylight time | 4 | 2 | 0.02 | 0.41 | 0.12 |
| **MVPA** | | | | | |
| Intercept | -177 | 56 | | | |
| 6MWD | 0.33 | 0.09 | 0.23 | 0.23 | 0.0006 |
| Daylight time | 0.10 | 0.04 | 0.07 | 0.30 | 0.02 |
| **PAL** | | | | | |
| Intercept | 0.70 | 0.19 | | | |
| 6MWD | 0.0008 | 0.0003 | 0.14 | 0.14 | 0.02 |
| gender | -0.17 | 0.07 | 0.07 | 0.21 | 0.02 |
| $T_L$,co | 0.04 | 0.02 | 0.04 | 0.25 | 0.03 |
| Daylight time | 0.0003 | 0.0001 | 0.05 | 0.30 | 0.05 |

6MWD is expressed in meters, gender (0=female, 1=male), $T_L$,co in $mmol*min^{-1}*kPa$ and daylight time as minutes of daylight between sunrise and sunset.

# FIGURE LEGENDS

**Figure 1.** Flow chart of the included study subjects, recruited from the Nelson trial.

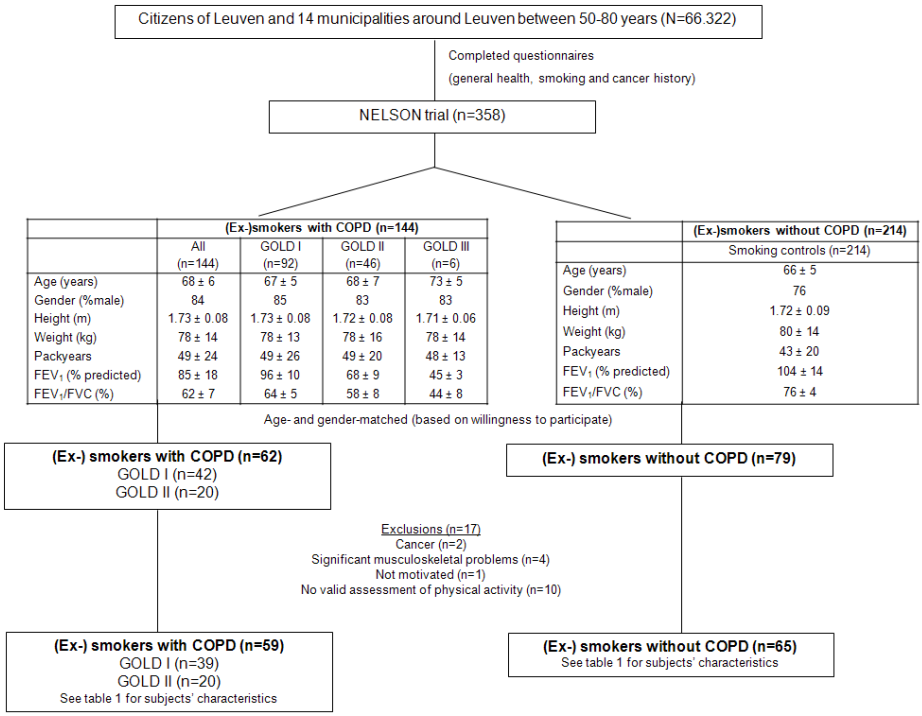

**Figure 2.** Daily physical activity in subjects with COPD and smoking controls with (mMRC1) and without (mMRC0) mild symptoms of dyspnea. *p<0.05 mMRC0 versus mMRC1.

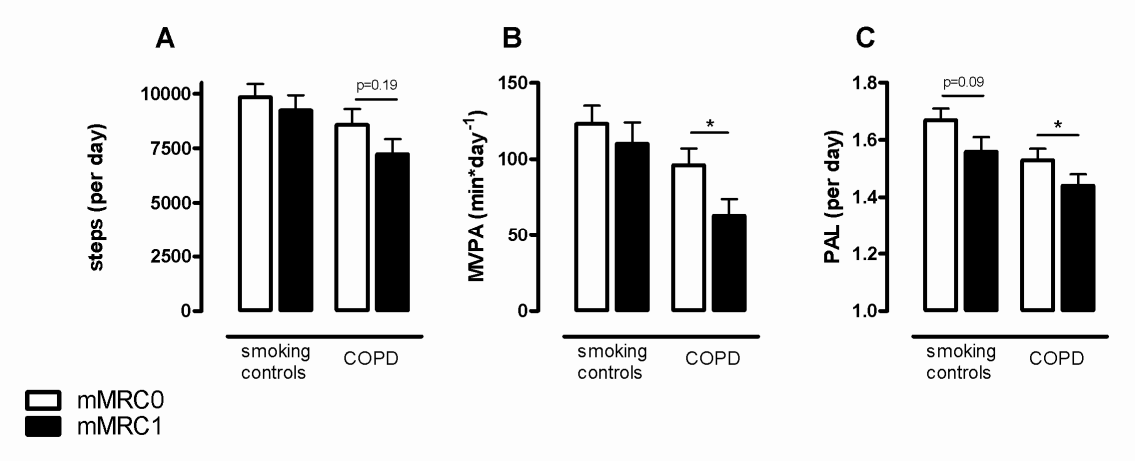


**Figure 3.** Daily physical activity levels (daily steps (A), daily time spent in moderate-to-vigorous intense physical activities (MVPA) (B) and daily physical activity level (PAL (C)) and a reduced diffusion capacity of the lung for carbon monoxide ($T_L$,co) in subjects with and without COPD. $T_L$,co below or equal to the median (7.7 mmol*min$^{-1}$*kPa or 88% predicted for smoking controls and 6.9 mmol*min$^{-1}$*kPa or 80% predicted for COPD) was defined as a reduced $T_L$,co. *p<0.05 $T_L$,co ≥ median versus $T_L$,co < median.

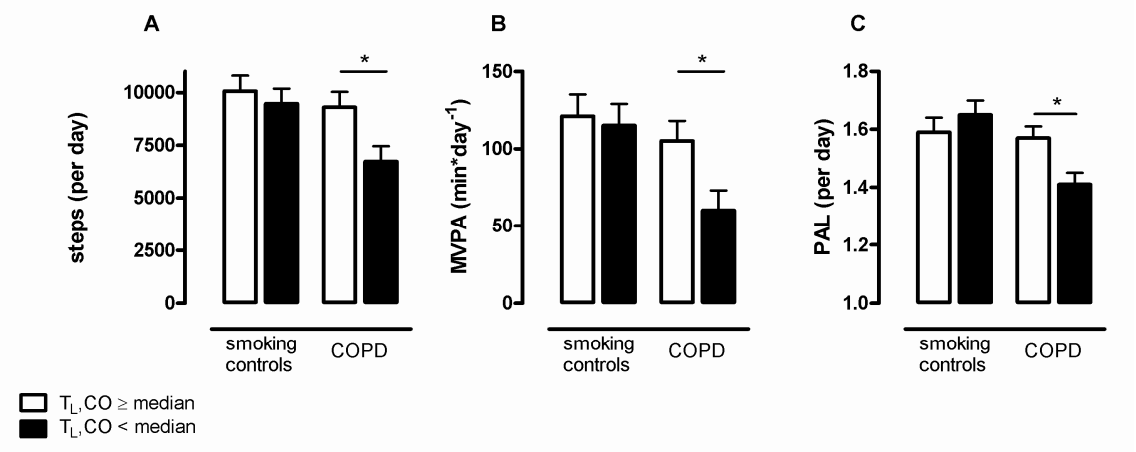

**Figure 4.** Daily physical activity levels (daily steps (A), daily time spent in moderate-to-vigorous intense physical activities (MVPA) (B) and daily physical activity level (PAL (C)) and a reduced six minute walking distance (6MWD) in subjects with and without COPD. 6MWD below or equal to the median (623 m or 93% predicted for smoking controls and 592 m or 90% predicted for COPD) was defined as a reduced 6MWD. *p<0.05 6MWD ≥ median versus 6MWD < median.

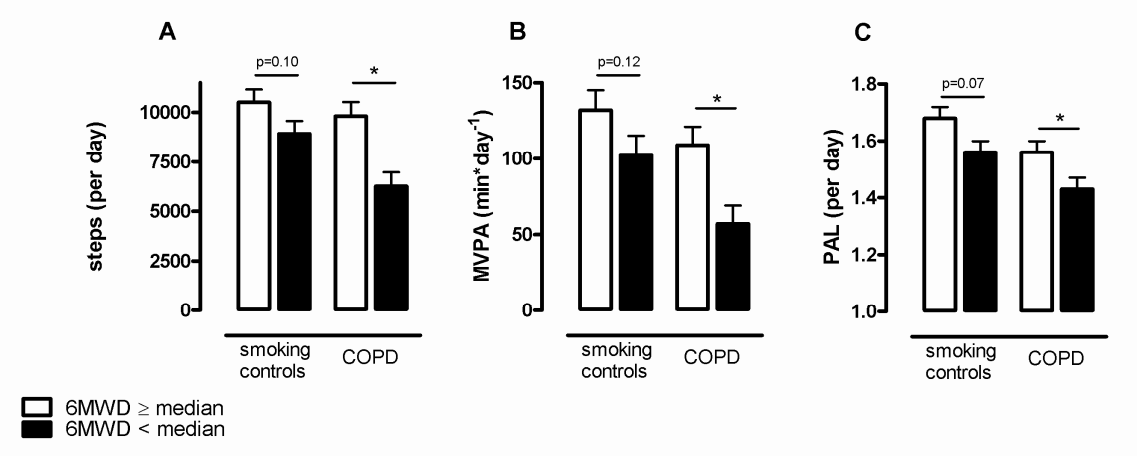

**Figure 5.** Daily physical activity levels (daily steps (A), daily time spent in moderate-to-vigorous intense physical activities (MVPA) (B) and daily physical activity level (PAL (C)) and a reduced peak oxygen consumption ( peak $VO_2$) in subjects with and without COPD. Peak $VO_2$ below or equal to the median (2.23 $L*min^{-1}$ or 116% predicted for smoking controls and 2.00 $L*min^{-1}$ or 102% predicted for COPD) was defined as a reduced peak $VO_2$. *p<0.05 peak $VO_2$ ≥ median versus peak $VO_2$ < median.