

**Appendix 1.** Comparison of pulmonary function test values if defined as Moderate by COPD-X to Severe as GOLD or GLI-2012.

|                                    | Moderate COPD-X<br>(n=96) | Severe GOLD<br>(n=97) | p-value | Severe GLI<br>(n=83) | p-value |
|------------------------------------|---------------------------|-----------------------|---------|----------------------|---------|
| FVC post-BD (L)                    | 2.3 (2.16, 2.43)          | 2.03 (1.92, 2.14)     | 0.002*  | 2.31 (2.16, 2.45)    | 0.940   |
| FVC post-BD (%)                    | 62.61 (60.67, 64.56)      | 55.8 (53.96, 57.65)   | <0.001* | 60 (57.39, 62.61)    | 0.106   |
| FVC post-BD (z)                    | -2.54 (-2.69, -2.38)      | -3.14 (-3.31, -2.98)  | <0.001* | -2.71 (-2.86, -2.56) | 0.113   |
| FEV <sub>1</sub> post-BD (L)       | 1.4 (1.31, 1.48)          | 1.15 (1.08, 1.21)     | <0.001* | 1.37 (1.28, 1.47)    | 0.703   |
| FEV <sub>1</sub> post-BD (%)       | 48.46 (47.39, 49.53)      | 39.99 (38.86, 41.12)  | <0.001* | 45.1 (43.13, 47.06)  | 0.002*  |
| FEV <sub>1</sub> post-BD (z)       | -3.32 (-3.42, -3.21)      | -3.87 (-3.98, -3.75)  | <0.001* | -3.49 (-3.56, -3.42) | 0.008*  |
| FEV <sub>1</sub> /FVC post-BD (AV) | 0.61 (0.59, 0.62)         | 0.57 (0.55, 0.59)     | 0.001*  | 0.59 (0.58, 0.61)    | 0.232   |
| FEV <sub>1</sub> /FVC post-BD (%)  | 76.91 (74.37, 79.44)      | 72.38 (70.21, 74.55)  | 0.008*  | 73.72 (70.41, 77.04) | 0.126   |
| FEV <sub>1</sub> /FVC post-BD (z)  | -2.68 (-2.85, -2.5)       | -3.13 (-3.32, -2.95)  | <0.001* | -2.88 (-3.05, -2.71) | 0.102   |

**Abbreviations:** **BD**, Bronchodilator; **COPD**, Chronic obstructive pulmonary disease; **COPD-X**, Concise tool for chronic obstructive pulmonary disease; **FEV<sub>1</sub>**, Forced expiratory volume in one second; **FVC**, Forced vital capacity; **GLI**, Global lung initiative; **GOLD**, global initiative for chronic obstructive lung disease; **Z**, z-score; \*, Statistically significant.

**Appendix 2.1.** Severity of COPD airflow limitation within severity category according to three guideline classifications.

| Severity classification | COPD-X (n=197) * | GOLD (n=197) | GLI-2012 (n=197) |
|-------------------------|------------------|--------------|------------------|
| Mild                    | 69 (35%)         | 17 (9%)      | 42 (21%)         |
| Moderate                | 90 (46%)         | 114 (58%)    | 66 (34%)         |
| Severe                  | 21 (11%)         | 65 (33%)     | 54 (27%)         |
| Very Severe             | -                | 1 (1%)       | 35 (18%)         |

\*17 participants had FEV<sub>1</sub> >80% and thus were unclassified according to COPD-X.  
**Abbreviations:** COPD, Chronic obstructive pulmonary disease; COPD-X, Concise tool for chronic obstructive pulmonary disease; GOLD, global initiative for chronic obstructive lung disease; GLI, Global lung initiative.

**Appendix 2.2.** Mean lung function parameters by severity category according to three guideline classifications with arbitrary inflation of lung function parameters by 15%.

| <b>Mild</b>  | <b>COPD-X (n=69)</b> | <b>GOLD (n=17)</b>      | <b>GLI-2012 (n=42)</b> | <b>p-value</b> |
|--|----------------------|-------------------------|------------------------|----------------|
| FVC post-BD (L)  | 3.13 (2.95, 3.3)     | 3.9 (3.36, 4.44)        | 3.54 (3.23, 3.85)      | 0.010*         |
| FVC post-BD (%)  | 87.69 (85.4, 89.99)  | 112.38 (104.58, 120.17) | 100 (96.32, 103.69)    | <0.001*        |
| FVC post-BD (z)  | -0.93 (-1.1, -0.75)  | 0.91 (0.32, 1.49)       | 0.02 (-0.27, 0.3)      | <0.001*        |
| FEV <sub>1</sub> post-BD (L)   | 1.96 (1.85, 2.08)    | 2.56 (2.18, 2.95)       | 2.32 (2.1, 2.54)       | <0.002*        |
| FEV <sub>1</sub> post-BD (%)   | 68.61 (67.17, 70.04) | 92.27 (85.87, 98.67)    | 81.32 (78.31, 84.33)   | <0.001*        |
| FEV <sub>1</sub> post-BD (z)   | -2.16 (-2.28, -2.05) | -0.51 (-0.96, -0.07)    | -1.27 (-1.48, -1.06)   | <0.001*        |
| FEV <sub>1</sub> /FVC post-BD (AV)   | 0.63 (0.62, 0.64)    | 0.65 (0.64, 0.67)       | 0.65 (0.64, 0.67)      | 0.010*         |
| FEV <sub>1</sub> /FVC post-BD (%)  | 78.47 (76.88, 80.06) | 81.96 (80.05, 83.87)    | 81.17 (79.88, 82.47)   | 0.010*         |
| FEV <sub>1</sub> /FVC post-BD (z)  | -2.45 (-2.61, -2.29) | -2.07 (-2.29, -1.85)    | -2.19 (-2.31, -2.07)   | 0.011*         |
| <b>Moderate</b>  | <b>COPD-X (n=90)</b> | <b>GOLD (n=114)</b>     | <b>GLI-2012 (n=66)</b> |                |
| FVC post-BD (L)  | 2.41 (2.29, 2.53)    | 2.91 (2.78, 3.04)       | 2.93 (2.75, 3.12)      | <0.001*        |
| FVC post-BD (%)  | 68.92 (67.07, 70.77) | 82.31 (80.32, 84.29)    | 81.9 (79.59, 84.2)     | <0.001*        |
| FVC post-BD (z)  | -2.38 (-2.53, -2.22) | -1.33 (-1.48, -1.17)    | -1.35 (-1.52, -1.18)   | <0.001*        |
| FEV <sub>1</sub> post-BD (L)   | 1.39 (1.33, 1.46)    | 1.8 (1.71, 1.88)        | 1.78 (1.66, 1.9)       | <0.001*        |
| FEV <sub>1</sub> post-BD (%)   | 49.76 (48.41, 51.1)  | 63.42 (61.91, 64.93)    | 61.96 (60.63, 63.3)    | <0.001*        |
| FEV <sub>1</sub> post-BD (z)   | -3.38 (-3.49, -3.26) | -2.47 (-2.58, -2.37)    | -2.55 (-2.63, -2.48)   | <0.001*        |
| FEV <sub>1</sub> /FVC post-BD (AV)   | 0.58 (0.57, 0.6)     | 0.62 (0.61, 0.63)       | 0.61 (0.59, 0.62)      | 0.003*         |
| FEV <sub>1</sub> /FVC post-BD (%)  | 72.49 (70.81, 74.17) | 77.18 (75.91, 78.45)    | 75.91 (74.3, 77.53)    | 0.001*         |
| FEV <sub>1</sub> /FVC post-BD (z)  | -3.03 (-3.19, -2.87) | -2.57 (-2.69, -2.44)    | -2.68 (-2.82, -2.54)   | 0.001*         |
| <b>Severe</b>  | <b>COPD-X (n=21)</b> | <b>GOLD (n=65)</b>      | <b>GLI-2012 (n=54)</b> |                |
| FVC post-BD (L)  | 2.02 (1.83, 2.21)    | 2.18 (2.05, 2.3)        | 2.35 (2.19, 2.5)       | 0.010*         |
| FVC post-BD (%)  | 55.88 (51.67, 60.09) | 61.61 (59.42, 63.81)    | 67.93 (65.6, 70.26)    | <0.001*        |
| FVC post-BD (z)  | -3.56 (-3.95, -3.18) | -3.02 (-3.21, -2.83)    | -2.46 (-2.63, -2.28)   | <0.001*        |
| FEV <sub>1</sub> post-BD (L)   | 1.03 (0.94, 1.13)    | 1.19 (1.12, 1.26)       | 1.35 (1.26, 1.44)      | <0.001*        |
| FEV <sub>1</sub> post-BD (%)   | 35.18 (33.17, 37.2)  | 41.52 (40.33, 42.71)    | 48.38 (46.79, 49.98)   | <0.001*        |
| FEV <sub>1</sub> post-BD (z)   | -4.49 (-4.68, -4.3)  | -4 (-4.11, -3.89)       | -3.5 (-3.58, -3.43)    | <0.001*        |
| FEV <sub>1</sub> /FVC post-BD (AV)   | 0.52 (0.49, 0.55)    | 0.55 (0.53, 0.57)       | 0.58 (0.56, 0.6)       | 0.001*         |
| FEV <sub>1</sub> /FVC post-BD (%)  | 63.64 (59.92, 67.36) | 68.01 (65.88, 70.14)    | 71.64 (69.29, 73.99)   | <0.001*        |
| FEV <sub>1</sub> /FVC post-BD (z)  | -3.94 (-4.26, -3.62) | -3.49 (-3.69, -3.3)     | -3.14 (-3.34, -2.93)   | <0.001*        |
| <b>Very Severe</b>   | <b>COPD-X</b>        | <b>GOLD (n=1)</b>       | <b>GLI-2012 (n=35)</b> |                |
| FVC post-BD (L)  |                      |                         | 2.14 (1.97, 2.31)      | -              |
| FVC post-BD (%)  |                      |                         | 57.33 (54.3, 60.37)    | -              |
| FVC post-BD (z)  |                      |                         | -3.54 (-3.81, -3.28)   | -              |
| FEV <sub>1</sub> post-BD (L)   |                      |                         | 1.18 (1.08, 1.28)      | -              |
| FEV <sub>1</sub> post-BD (%)   |                      |                         | 38.42 (36.53, 40.32)   | -              |
| FEV <sub>1</sub> post-BD (z)   |                      |                         | -4.41 (-4.53, -4.29)   | -              |
| FEV <sub>1</sub> /FVC post-BD (AV)   |                      |                         | 0.55 (0.53, 0.58)      | -              |
| FEV <sub>1</sub> /FVC post-BD (%)  |                      |                         | 67.62 (64.25, 70.99)   | -              |
| FEV <sub>1</sub> /FVC post-BD (z)  |                      |                         | -3.62 (-3.92, -3.32)   | -              |
| * Significant difference lung function parameters by guideline categorisation (p<0.05)   |                      |                         |                        |                |
| <b>Abbreviations:</b> <b>BD</b> , Bronchodilator; <b>COPD</b> , Chronic obstructive pulmonary disease; <b>COPD-X</b> , Concise tool for chronic obstructive pulmonary disease; <b>FEV<sub>1</sub></b> , Forced expiratory volume in one second; <b>FVC</b> , Forced vital capacity; <b>GLI</b> , Global lung initiative; <b>GOLD</b> , global initiative for chronic obstructive lung disease; <b>Z</b> , z-score; *, Statistically significant. |                      |                         |                        |                |

