**Supplementary material - Frailty and mortality risk in COPD: a cohort study comparing the Fried Frailty Phenotype and Short Physical Performance Battery**

Table S1 Measures for cohort study independent variables

| **Domain** | **Measure** | **Description** | **Scale direction** | **MCIDs & normative values:** |
| --- | --- | --- | --- | --- |
| Lung Function | Percent-predicted forced expiratory volume in one second (FEV1% predicted) | The volume of air exhaled in the first second of forced expiration after maximal inspiration, expressed as a percentage of the predicted volume based on population norms. | Higher values indicate better lung function. | MCID in COPD = 4%[1]  Classification of COPD severity uses the following thresholds[2]:   * ≥80% mild * <80% moderate * <50% severe * <30% very severe |
| Breathlessness | Medical Research Council (MRC) Dyspnoea[3] | This single item measure scores the self-reported impact of breathlessness from 1 (only breathless on exertion) to 5 (housebound due to breathlessness). | Higher scores indicate more severe breathlessness. | - |
| Prognostic index | Updated Age, Dyspnoea, Obstruction (ADO) Index[4] | This index assigns points depending on:   * FEV1% predicted (≥81% =0, 65% to 80%=1, 51% to 64%=2, 36% to 50%=3, ≤35% =4) * MRC dyspnoea (0=0, 1 to 2=1, 3=2, 4=3)\* * Age in years (40 to 49=0, 50 to 59=2, 60 to 69=4, 70 to 79=5, ≥80 =7).   These are summed to create a create a total score from 0-14. | Higher scores indicate greater mortality risk. | - |
| Body Mass Index | Body Mass Index (BMI) | This index is calculated using weight in kilograms, divided by a person’s height in metres squared. | Higher scores can indicate higher body fatness. | The National Health Service defines[5] BMI scores as:   * >18.5 underweight * 18.5 to 24.9 healthy * 25 to 29.9 overweight * 30 to 39.9 obese. |
| Comorbidities | Age-adjusted Charlson comorbidity index[6] | This index assigns scores (1,2,3 or 6) to specific comorbidities based on mortality risk[7]. For example, 1 point for diabetes, 2 points for any tumour, 3 points for moderate or severe liver disease, and 6 points for metastatic solid tumours. Additional points are then added for each decade aged over 40 years. | Higher scores indicate greater burden of comorbidities and mortality risk. | - |
| Exercise Capacity | Incremental Shuttle Walk Test (ISWT)[8] | In this physical test the participant walks around two cones set 9 metres apart, in time to auditory beeps. The beeps increase in speed as the test progresses. The result is the distance in metres the participant can walk before becoming too breathlessness, or unable to keep up with the beeps. | Higher scores indicate higher exercise capacity. | MCID in COPD: 48 metres[9] |
| Anxiety and Depression symptoms | Hospital Anxiety and Depression Questionnaire (HADS)[10] | This is a 14-item self-report questionnaire measuring anxiety (7 items) and depression (7 items) over the past week. Items are scored on a scale of 0 to 3. Items are summed to create a maximum score of 21 on each subscale. | Higher scores indicate more symptoms of anxiety or depression. | MCID in COPD: 1.5 points[11]  Scores can be classified as follows[12]:   * 0-7: Non-case * 8-10: Mild * 11-14: Moderate * 15-51: Severe |
| Health-related quality of life | Chronic Respiratory Questionnaire (CRQ)[13] | This self-report scale contains 20 items measuring the impact of chronic respiratory disease over the past 2 weeks. Each item is scored from 1-7, and the total score for the following four domains are calculated: Dyspnoea (range 5-35), Emotion (range 7-49), Fatigue (range 4-28) and Mastery (range 4-28). | Higher scores indicate better health status. | MCIDs in COPD:[14]  Dyspnoea: 2.5 points  Emotion: 3.5 points  Fatigue: 2 points  Mastery: 2 points |
| Independence in activities of daily living | Katz Index of Independence in Activities of Daily Living[15] | On this scale, participants score one point for each of 6 basic activities of daily living that they self-report they are able to undertake, resulting in a total score from 0-6. In this study, scores were dichotomised as some dependence (scores 1-5) and independent (score 6). | Higher scores indicate higher independence. |  |
|  |  |  |  |  |

COPD=Chronic Obstructive Pulmonary Disease, MCID=Minimal Clinically Important Difference; \*MRC Dyspnoea scores of 5 were scored the same as MRC 4 (3 points) when constructing the ADO index

**References**

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