

Table S1A: Treatable traits associated with FEV₁ (litres) – multiple imputations – sensitivity analysis

Treatable traits	COPD			Non-COPD		
	Unadjusted	Model 1*	Model 2†	Unadjusted	Model 1‡	Model 2§
	<i>β</i> , 95%CI	<i>β</i> , 95%CI	<i>β</i> , 95%CI	<i>β</i> , 95%CI	<i>β</i> , 95%CI	<i>β</i> , 95%CI
Airflow limitation	3.046, 2.825 to 3.268	2.979, 2.769 to 3.190	2.991, 2.783 to 3.198‡‡	1.821, 1.645 to 1.997	2.041, 1.853 to 2.229	2.041, 1.853 to 2.229‡‡
Chronic bronchitis	-0.243, -0.387 to -0.100	-0.164, -0.259 to -0.068	-0.0178, -0.276 to -0.81‡‡	-0.257, -0.412 to -0.103	-0.109, -0.210 to -0.008	-0.109, -0.210 to -0.009**
Chronic sputum production	-0.031, -0.144 to 0.082	---	---	-0.047, -0.126 to 0.032	---	---
Breathlessness	-0.264, -0.373 to -0.154	-0.080, -0.147 to -0.014	-0.094, -0.161 to -0.027††	-0.353, -0.400 to -0.306	-0.095, -0.122 to -0.068	-0.095, -0.121 to -0.069‡‡
Frequent chest Infections	-0.043, -0.188 to 0.103	---	---	-0.063, -0.131 to 0.006	-0.047, -0.086 to -0.008	-0.047, -0.086 to -0.008**
Osteoporosis	-0.383, -0.540 to -0.226	-0.053, -0.168 to 0.061	---	-0.492, -0.571 to -0.413	-0.005, -0.062 to 0.052	---
Cardiovascular disease	-0.026, -0.128 to 0.077	---	---	-0.107, -0.150 to -0.064	0.002, -0.022 to 0.026	---
Arthritis	-0.072, -0.180 to 0.035	---	---	-0.247, -0.294 to -0.200	0.035, 0.007 to 0.062	0.035, 0.007 to 0.062**
Diabetes	-0.135, -0.306 to 0.036	---	---	-0.141, -0.228 to -0.053	-0.073, -0.126 to -0.021	-0.073, -0.126 to -0.021††
Cancer	0.062, -0.153 to 0.276	---	---	-0.165, -0.245 to -0.084	0.005, -0.048 to 0.039	---
Psychiatric problems	0.196, -0.028 to 0.420	-0.091, -0.254 to 0.073	---	0.102, -0.010 to 0.214	0.011, -0.044 to 0.065	---
Depression	-0.150, -0.263 to -0.036	0.013, -0.083 to 0.057	---	-0.231, -0.285 to -0.178	-0.000, -0.027 to 0.028	---
Underweight	-0.667, -0.944 to -0.389	-0.152, -0.331 to 0.026	-0.175, -0.341 to -0.008**	-0.171, -0.437 to 0.094	---	---
Obesity	-0.052, -0.163 to 0.059	---	---	-0.140, -0.190 to -0.091	-0.119, -0.151 to -0.087	-0.119, -0.150 to -0.087‡‡
Sarcopaenia	-0.400, -0.535 to -0.265	-0.134, -0.229 to -0.039	-0.160, -0.253 to -0.068††	-0.556, -0.634 to -0.478	-0.101, -0.144 to -0.057	-0.100, -0.144 to -0.057‡‡
Systemic inflammation	-0.088, -0.218 to 0.042	---	---	-0.268, -0.314 to -0.223	-0.071, -0.101 to -0.042	-0.071, -0.101 to -0.042‡‡
Anaemia	-0.003, -0.178 to 0.172	---	---	0.049, -0.034 to 0.133	---	---
Disability	-0.244, -0.344 to -0.143	-0.035, -0.095 to 0.026	---	-0.277, -0.318 to -0.235	-0.037, -0.060 to -0.014	-0.037, -0.060 to -0.014††
Current smoking	-0.092, -0.201 to 0.017	-0.227, -0.301 to -0.153	-0.237, -0.311 to -0.163‡‡	-0.213, -0.280 to -0.145	-0.186, -0.230 to -0.142	-0.186, -0.230 to -0.142‡‡
Physical inactivity	-0.273, -0.448 to -0.097	-0.074, -0.177 to 0.030	---	-0.344, -0.440 to -0.248	-0.086, -0.140 to -0.031	-0.086, -0.140 to -0.031††
Poor family and social support	0.078, -0.046 to 0.203	---	---	0.019, -0.042 to 0.079	---	---

* Adjusted for sex, age, marital status, socioeconomic class and treatable traits (p <0.1) from the univariate analysis; † Adjusted for sex, age and treatable traits (p <0.1) from the multivariate analysis; ‡ Adjusted for sex, age, marital status, ethnicity, socioeconomic class and treatable traits (p <0.1) from the univariate analysis; § Adjusted for sex, age, marital status, ethnicity, socioeconomic class and treatable traits (p <0.1) from the multivariate analysis. ** = p<0.05; †† = p<0.01; ‡‡ = p<0.001

Table S1B: Treatable traits associated with FEV₁ (litres) – excluding patients with airflow limitation and chronic bronchitis – sensitivity analysis for the non-COPD/control group

Treatable traits	COPD			Non-COPD		
	Unadjusted	Model 1*	Model 2†	Unadjusted	Model 1‡	Model 2§
	<i>β, 95%CI</i>	<i>β, 95%CI</i>	<i>β, 95%CI</i>	<i>β, 95%CI</i>	<i>β, 95%CI</i>	<i>β, 95%CI</i>
Airflow limitation	3.046, 2.825 to 3.268	2.957, 2.736 to 3.178	2.976, 2.760 to 3.193 ‡‡	---	---	---
Chronic bronchitis	-0.243, -0.387 to -0.100	-0.172, -0.273 to -0.070	-0.186, -0.290 to -0.082 ‡‡	---	---	---
Chronic sputum production	-0.031, -0.144 to 0.082	---	---	-0.082, -0.165 to 0.001	-0.042, -0.096 to 0.011	---
Breathlessness	-0.304, -0.416 to -0.192	-0.076, -0.147 to -0.005	-0.093, -0.164 to -0.022 **	-0.434, -0.481 to -0.386	-0.088, -0.121 to -0.056	-0.093, -0.125 to -0.061 ‡‡
Frequent chest Infections	-0.043, -0.188 to 0.103	---	---	-0.060, -0.133 to 0.012	---	---
Osteoporosis	-0.383, -0.540 to -0.226	-0.056, -0.182 to 0.069	---	-0.511, -0.591 to -0.430	0.059, -0.018 to 0.137	---
Cardiovascular disease	-0.024, -0.129 to 0.080	---	---	-0.128, -0.174 to -0.083	0.014, -0.016 to 0.045	---
Arthritis	-0.072, -0.180 to 0.035	---	---	-0.262, -0.311 to -0.213	0.033, 0.001 to 0.065	0.029, 0.003 to 0.061
Diabetes	-0.135, -0.306 to 0.036	---	---	-0.142, -0.234 to -0.051	-0.081, -0.151 to -0.011	-0.081, -0.150 to -0.012 **
Cancer	0.062, -0.153 to 0.276	---	---	-0.170, -0.254 to -0.086	-0.032, -0.090 to 0.027	---
Psychiatric problems	0.196, -0.028 to 0.420	-0.066, -0.240 to 0.107	---	0.090, -0.034 to 0.215	---	---
Depression	-0.149, -0.263 to -0.036	0.007, -0.066 to 0.080	---	-0.253, -0.307 to -0.198	-0.027, -0.057 to 0.004	-0.024, -0.053 to 0.005
Underweight	-0.682, -0.947 to -0.417	-0.207, -0.370 to -0.043	-0.216, -0.373 to -0.058 ††	-0.295, -0.562 to 0.028	-0.047, -0.221 to 0.128	---
Obesity	-0.051, -0.162 to 0.060	---	---	-0.192, -0.244 to -0.141	-0.101, -0.135 to -0.066	-0.098, -0.131 to -0.066 ‡‡
Sarcopaenia	-0.402, -0.537 to -0.267	-0.137, -0.240 to -0.034	-0.162, -0.262 to -0.061 ††	-0.546, -0.626 to -0.465	-0.119, -0.173 to -0.064	-0.103, -0.153 to -0.052 ‡‡
Systemic inflammation	-0.061, -0.171 to 0.050	---	---	-0.287, -0.340 to -0.243	-0.080, -0.111 to -0.050	-0.082, -0.112 to -0.053 ‡‡
Anaemia	-0.001, -0.167 to 0.170	---	---	0.050, -0.043 to 0.144	---	---
Disability	-0.244, -0.344 to -0.143	-0.038, -0.100 to 0.024	---	-0.291, -0.334 to -0.248	-0.002, -0.028 to 0.025	---
Current smoking	-0.092, -0.201 to 0.017	-0.218, -0.294 to -0.142	-0.228, -0.304 to -0.153 ‡‡	-0.142, -0.218 to -0.067	-0.179, -0.238 to -0.119	-0.192, -0.247 to -0.136 ‡‡
Physical inactivity	-0.273, -0.448 to -0.097	-0.085, -0.197 to 0.026	---	-0.323, -0.427 to -0.219	-0.093, -0.169 to -0.018	-0.085, -0.154 to -0.015 **
Poor family and social support	0.093, -0.034 to 0.220	---	---	0.020, -0.044 to 0.084	---	---

*Adjusted for sex, age, marital status, socioeconomic class and treatable traits (p <0.1) from the univariate analyses; †Adjusted for sex, age and treatable traits (p <0.1) from the multivariate analyses; ‡Adjusted for sex, age, marital status, ethnicity, socioeconomic class and treatable traits (p <0.1) from the univariate analyses; §Adjusted for sex, age, marital status, ethnicity, socioeconomic class and treatable traits (p <0.1) from the multivariate analyses. ** = p<0.05; †† = p<0.01; ‡‡ = p<0.001

Table S2A: Treatable traits associated with FEV₁% predicted – Complete case analysis

Treatable traits	COPD			Non-COPD		
	Unadjusted	Model 1*	Model 2†	Unadjusted	Model 1‡	Model 2§
	β , 95%CI	β , 95%CI	β , 95%CI	β , 95%CI	β , 95%CI	β , 95%CI
Airflow limitation	114.17, 107.80 to 120.55	110.38, 103.59 to 117.18	110.88, 104.44 to 117.31‡‡	70.02, 64.58– 75.46	74.39, 67.40 to 81.39	73.23, 66.33 to 80.14‡‡
Chronic bronchitis	-12.69, -17.02 to -8.37	-6.40, -9.95 to -2.85	-6.73, -10.09 to -3.36‡‡	-10.58, -14.80 to -6.36	-4.63, -8.48 to -0.79	-4.25, -8.01 to -0.50**
Chronic sputum production	-4.24, -7.79 to -0.69	-2.22, -4.78 to 0.34	-1.83, -4.35 to 0.69	-1.34, -3.40 to 0.72	---	---
Breathlessness	-4.37, -7.81 to -0.92	-1.63, -4.15 to 0.89	---	-4.82, -6.01 to -3.64	-4.23, -5.48 to -2.98	-4.40, -5.59 to -3.20‡‡
Frequent chest infections	-2.51, -6.96 to 1.95	---	---	-2.34, -4.16 to -0.52	-0.83, -2.65 to 0.99	---
Osteoporosis	-5.20, -10.83 to 0.44	-1.90, -6.73 to 2.93	---	-2.28, -4.83 to 0.27	1.11, -1.85 to 4.06	---
Cardiovascular disease	-0.80, -4.13 to 2.53	---	---	-1.23, -2.29 to -0.16	0.32, -0.79 to 1.44	---
Arthritis	1.88, -1.47 to 5.23	---	---	0.08, -1.06 to 1.23	---	---
Diabetes	-4.58, -9.66 to 0.51	-5.72, -9.89 to -1.56	-5.84, -9.89 to -1.80††	-5.17, -7.25 to -3.09	-3.30, -5.35 to -1.25	-3.38, -5.36 to -1.39††
Cancer	2.77, -3.90 to 9.44	---	---	-2.31, -4.51 to -0.12	0.44, -1.92 to 2.79	---
Psychiatric problems	4.44, -2.86 to 11.74	---	---	1.09, -1.48 to 3.67	---	---
Depression	-1.38, -5.05 to 2.29	---	---	-2.80, -4.12 to -1.49	-1.11, -2.40 to 0.18	-1.10, -2.35 to 0.15
Underweight	-25.25, -35.33 to -15.18	-5.92, -12.43 to 0.59	-6.87, -12.72 to -1.01**	3.71, -5.96 to 13.37	---	---
Obesity	-0.20, -3.76 to 3.36	---	---	-2.89, -4.10 to -1.68	-2.13, -3.44 to -0.82	-2.14, -3.44 to -0.85††
Sarcopaenia	-7.30, -11.82 to -2.78	-4.84, -8.63 to -1.06	-5.98, -9.63 to -2.34††	-5.65, -8.14 to -3.16	-2.93, -5.38 to -0.48	-2.96, -5.30 to -0.62**
Systemic inflammation	-2.24, -5.82 to 1.34	---	---	-5.67, -6.99 to -4.35	-2.98, -4.20 to -1.76	-3.24, -4.40 to -2.08‡‡
Anaemia	-2.41, -7.48 to 2.66	---	---	-1.85, -3.88 to 0.17	-1.52, -3.28 to 0.25	-1.40, -3.12 to 0.33
Disability	-4.69, -7.93 to -1.46	-1.20, -3.48 to 1.09	---	-3.05, -4.12 to -1.99	-0.60, -1.67 to 0.48	---
Current smoking	-8.76, -12.05 to -5.46	-7.77, -10.27 to -5.27	-7.94, -10.41 to -5.46‡‡	-10.82, -12.49 to -9.15	-6.94, -8.75 to -5.12	-7.35, -9.07 to -5.62‡‡
Physical inactivity	-7.80, -13.36 to -2.25	-3.08, -7.33 to 1.18	-4.60, -9.94 to 0.74	-7.64, -10.43 to -4.86	-2.95, -5.78 to 0.12	-2.78, -5.47 to -0.08**
Poor family and social support	3.03, -1.22 to 7.28	---	---	-0.39, -1.76 to 0.98	---	---

*Adjusted for marital status and treatable traits (p <0.1) from the univariate analyses; †Adjusted for treatable traits (p <0.1) from the multivariate analyses; ‡Adjusted for age, marital status, ethnicity, socioeconomic class and treatable traits (p <0.1) from the univariate analyses; §Adjusted for marital status, ethnicity, age and treatable traits (p <0.1) from the multivariate analyses. ** = p<0.05; †† = p<0.01; ‡‡ = p<0.001

Table S2B: Treatable traits associated with FEV₁% predicted – multiple imputations – sensitivity analysis

Treatable traits	COPD			Non-COPD		
	Unadjusted	Model 1*	Model 2†	Unadjusted	Model 1‡	Model 2§
	β , 95%CI	β , 95%CI	β , 95%CI	β , 95%CI	β , 95%CI	β , 95%CI
Airflow limitation	114.17, 107.80 to 120.55	110.87, 104.35 to 117.39	111.24, 104.86 to 117.62‡‡	70.02, 64.58 to 75.46	74.31, -68.49 to 80.12	74.15, 68.34 to 79.97‡‡
Chronic bronchitis	-12.69, -17.02 to -8.37	-6.09, -9.43 to -2.76	-7.32, -10.64 to -3.99‡‡	-10.58, -14.80 to -6.36	-5.69, -9.15 to -2.22	-5.82, -9.29 to -2.35††
Chronic sputum production	-4.23, -7.78 to -0.68	-1.55, -4.06 to 0.95	---	-1.38, -3.46 to 0.70	---	---
Breathlessness	-3.66, -7.04 to -0.27	-1.89, -4.32 to 0.53	---	-4.82, -6.03 to -3.62	-3.60, -4.61 to -2.59	-3.66, -4.66 to -2.66‡‡
Frequent chest infections	-2.51, -6.96 to 1.95	---	---	-2.34, -4.16 to -0.52	-1.57, -3.01 to -0.13	-1.67, -3.11 to 0.23**
Osteoporosis	-5.20, -10.83 to 0.44	-1.78, -6.41 to 2.84	---	-2.28, -4.83 to 0.27	-1.01, -3.27 to 1.24	---
Cardiovascular disease	-0.68, -3.89 to 2.53	---	---	-1.16, -2.20 to -0.13	-0.15, -1.04 to 0.73	---
Arthritis	1.88, -1.47 to 5.23	---	---	0.09, -1.04 to 1.24	---	---
Diabetes	-4.58, -9.66 to 0.51	-5.46, -9.49 to -1.42	-5.69, -9.67 to -1.70 ††	-5.17, -7.25 to -3.09	-3.62, -5.35 to -1.88	-3.69, -5.42 to -1.95‡‡
Cancer	2.77, -3.90 to 9.44	---	---	-2.31, -4.51 to -0.12	-0.16, -1.88 to 1.56	---
Psychiatric problems	4.44, -2.86 to 11.74	---	---	1.09, -1.48 to 3.67	---	---
Depression	-1.42, -5.09 to 2.25	---	---	-2.81, -4.13 to -1.50	-0.25, -1.30 to 0.79	---
Underweight	-24.43, -35.99 to -12.88	-5.31, -12.30 to 1.69	---	1.97, -8.53 to 12.46	---	---
Obesity	-0.22, -3.79 to 3.35	---	---	-2.92, -4.14 to -1.71	-2.65, -3.80 to -1.50	-2.80, -3.94 to -1.66‡‡
Sarcopaenia	-7.15, -11.62 to -2.68	-4.99, -8.66 to -1.31	-6.16, -9.81 to -2.51††	-5.76, -8.24 to -3.29	-2.97, -4.89 to -1.05	-2.93, -4.79 to -1.06††
Systemic inflammation	-2.92, -6.78 to 0.93	---	---	-5.58, -6.78 to -4.37	-2.76, -3.88 to -1.64	-2.79, -3.91 to -1.66‡‡
Anaemia	-2.80, -8.46 to 2.87	---	---	-1.59, -3.41 to 0.22	-0.54, -1.95 to 0.86	---
Disability	-4.69, -7.93 to -1.46	-1.29, -3.55 to 0.97	---	-3.05, -4.12 to -1.99	-0.99, -1.83 to -0.15	-1.09, -1.91 to -0.26**
Current smoking	-8.76, -12.05 to -5.46	-8.25, -10.71 to -5.79	-8.53, -11.00 to -6.06‡‡	-10.82, -12.49 to -9.15	-6.54, -8.01 to -5.06	-6.90, -8.34 to -5.46‡‡
Physical inactivity	-7.80, -13.36 to -2.25	-3.15, -7.27 to 0.97	---	-7.64, -10.43 to -4.86	-2.89, -4.93 to -0.86	-2.90, -4.93 to -0.86††
Poor family and social support	2.50, -1.60 to 6.61	---	---	-0.42, -1.77 to 0.93	---	---

* Adjusted for marital status and treatable traits (p <0.1) from the univariate analysis; † Adjusted for treatable traits (p <0.1) from the multivariate analysis; ‡ Adjusted for age, marital status, ethnicity, socioeconomic class and treatable traits (p <0.1) from the univariate analysis; § Adjusted for marital status, ethnicity and treatable traits (p <0.1) from the multivariate analysis. ** = p<0.05; †† = p<0.01; ‡‡ = p<0.001

Table S2C: Treatable traits associated with FEV₁% predicted – excluding patients with airflow limitation and chronic bronchitis – sensitivity analysis for the non-COPD/control group

Treatable traits	COPD			Non-COPD		
	Unadjusted	Model 1*	Model 2†	Unadjusted	Model 1‡	Model 2§
	β , 95%CI	β , 95%CI	β , 95%CI	β , 95%CI	β , 95%CI	β , 95%CI
Airflow limitation	114.17, 107.80 to 120.55	110.38, 103.59 to 117.18	110.88, 104.44 to 117.31‡‡	---	---	---
Chronic bronchitis	-12.69, -17.02 to -8.37	-6.40, -9.95 to -2.85	-6.73, -10.09 to -3.36‡‡	---	---	---
Chronic sputum production	-4.24, -7.79 to -0.69	-2.22, -4.78 to 0.34	-1.83, -4.35 to 0.69	-2.55, -4.67 to -0.43	-1.07, -3.08 to 0.94	---
Breathlessness	-4.37, -7.81 to -0.92	-1.63, -4.15 to 0.89	---	-7.03, -8.20 to -5.86	-3.67, -4.87 to -2.47	-3.94, -5.07 to -2.80‡‡
Frequent chest infections	-2.51, -6.96 to 1.95	---	---	-1.91, -3.70 to -0.13	-0.24, -2.16 to 1.67	---
Osteoporosis	-5.20, -10.83 to 0.44	-1.90, -6.73 to 2.93	---	-2.22, -4.80 to 0.36	1.82, -1.14 to 4.77	---
Cardiovascular disease	-0.80, -4.13 to 2.53	---	---	-1.80, -2.81 to -0.79	0.51, -0.60 to 1.63	---
Arthritis	1.88, -1.47 to 5.23	---	---	0.39, -1.51 to 0.73	---	---
Diabetes	-4.58, -9.66 to 0.51	-5.72, -9.89 to -1.56	-5.84, -9.89 to -1.80††	-5.28, -7.31 to -3.24	-2.98, -5.21 to -0.75	-3.17, -5.32 to -1.01††
Cancer	2.77, -3.90 to 9.44	---	---	-2.62, -4.80 to -0.44	0.47, -2.89 to 1.95	---
Psychiatric problems	4.44, -2.86 to 11.74	---	---	0.45, -2.19 to 3.09	---	---
Depression	-1.38, -5.05 to 2.29	---	---	-2.58, -4.84 to -2.32	-1.30, -2.53 to -0.08	-1.29, -2.43 to -0.15 **
Underweight	-25.25, -35.33 to -15.18	-5.92, -12.43 to 0.59	-6.87, -12.72 to -1.01**	-0.52, -7.61 to 6.57	---	---
Obesity	-0.20, -3.76 to 3.36	---	---	-4.47, -5.65 to -3.29	-2.01, -3.38 to -0.64	-1.84, -3.11 to -0.57††
Sarcopaenia	-7.30, -11.82 to -2.78	-4.84, -8.63 to -1.06	-5.98, -9.63 to -2.34††	-5.11, -7.55 to -2.66	-2.59, -4.96 to -0.22	-2.20, -4.37 to -0.03 **
Systemic inflammation	-2.24, -5.82 to 1.34	---	---	-5.75, -7.03 to -4.46	-3.07, -4.24 to -1.90	-3.29, -4.38 to -2.19‡‡
Anaemia	-2.41, -7.48 to 2.66	---	---	-1.82, -3.86 to 0.23	-1.36, -3.10 to 0.39	---
Disability	-4.69, -7.93 to -1.46	-1.20, -3.48 to 1.09	---	-3.61, -4.64 to -2.58	-0.01, -0.99 to 1.03	---
Current smoking	-8.76, -12.05 to -5.46	-7.77, -10.27 to -5.27	-7.94, -10.41 to -5.46‡‡	-8.41, -10.10 to -6.71	-6.88, -8.88 to -4.88	-6.90, -8.72 to -5.09‡‡
Physical inactivity	-7.80, -13.36 to -2.25	-3.08, -7.33 to 1.18	-4.60, -9.94 to 0.74	-7.20, -10.06 to -4.35	-2.60, -5.43 to 0.22	-2.27, -4.88 to 0.33
Poor family and social support	3.03, -1.22 to 7.28	---	---	-0.16, -1.44 to 1.12	---	---

*Adjusted for marital status and treatable traits (p <0.1) from the univariate analyses; †Adjusted for treatable traits (p <0.1) from the multivariate analyses; ‡Adjusted for marital status, ethnicity, socioeconomic class and treatable traits (p <0.1) from the univariate analyses; §Adjusted for marital status and treatable traits (p <0.1) from the multivariate analyses. ** = p<0.05; †† = p<0.01; ‡‡ = p<0.001

Table S3A: Treatable traits associated with quality of life – multiple imputations – sensitivity analysis

Treatable traits	COPD			Non-COPD		
	Unadjusted	Model 1*	Model 2†	Unadjusted	Model 1‡	Model 2§
	β , 95%CI	β , 95%CI	β , 95%CI	β , 95%CI	β , 95%CI	β , 95%CI
Airflow limitation	-3.30, -7.35 to 1.29	---	---	-4.01, -5.83 to -2.18	-1.16, -2.75 to 0.43	---
Chronic bronchitis	-3.23, -5.27 to -1.19	-1.25, -2.84 to 0.34	---	-3.98, -5.90 to -2.06	-0.54, -2.03 to 0.95	---
Chronic sputum production	-2.11, -3.48 to -0.73	-1.02, -2.16 to 0.13	-1.43, -2.57 to -0.30**	-4.07, -5.06 to -3.08	-1.34, -2.16 to -0.53	-1.43, -2.24 to -0.63
Breathlessness	-3.34, -4.64 to -2.04	-1.46, -2.51 to -0.41	-1.77, -2.84 to -0.70††	-4.54, -5.25 to -3.83	-1.69, -2.32 to -1.07	-1.73, -2.31 to -1.14
Frequent chest infections	-2.06, -4.14 to 0.03	-0.95, -2.54 to 0.64	---	-0.70, -1.55 to 0.16	---	---
Osteoporosis	-1.67, -4.38 to 1.03	---	---	-2.88, -3.96 to -1.80	-1.17, -2.03 to -0.32	-1.17, -2.04 to -0.31
Cardiovascular disease	-2.30, -3.63 to -0.98	-1.22, -2.41 to -0.02	-1.54, -2.65 to -0.43††	-2.04, -2.48 to -1.60	-1.35, -1.70 to -1.00	-1.38, -1.73 to -1.03
Arthritis	-3.51, -4.84 to -2.18	-1.36, -2.59 to -0.13	-1.45, -2.68 to -0.22**	-3.17, -3.68 to -2.66	-1.47, -1.87 to -1.07	-1.47, -1.88 to -1.06
Diabetes	-2.76, -4.72 to -0.80	-1.06, -2.71 to 0.59	---	-2.44, -3.33 to -1.54	-0.81, -1.52 to -0.10	-0.89, -1.61 to -0.16
Cancer	-0.58, -3.40 to 2.25	---	---	-0.30, -1.28 to 0.69	---	---
Psychiatric problems	0.20, -2.48 to 2.88	---	---	0.22, -0.77 to 1.22	---	---
Depression	-8.11, -9.62 to -6.61	-6.31, -7.67 to -4.95	-6.51, -7.90 to -5.12‡‡	-8.73, -9.36 to -8.10	-5.69, -6.26 to -5.13	-5.69, -6.25 to -5.12
Underweight	-1.77, -6.80 to 3.26	---	---	-0.24, -3.59 to 3.10	---	---
Obesity	-0.22, -1.69 to 1.25	---	---	-1.89, -2.46 to -1.32	-0.65, -1.22 to -0.09	-0.61, -1.13 to -0.09
Sarcopaenia	-3.00, -4.75 to -1.25	-0.74, -2.46 to 0.98	---	-4.46, -5.45 to -3.48	-1.39, -2.30 to -0.48	-1.43, -2.35 to -0.52
Systemic inflammation	-0.70, -1.93 to 0.52	---	---	-1.20, -1.75 to -0.64	0.16, -0.35 to 0.67	---
Anaemia	-2.83, -4.64 to -1.02	-1.23, -2.83 to 0.38	---	-1.52, -2.51 to -0.52	-0.68, -1.54 to 0.19	---
Disability	-3.61, -4.70 to -2.51	-1.30, -2.35 to -0.26	-1.40, -2.41 to -0.39††	-4.10, -4.57 to -3.62	-0.85, -1.24 to -0.46	-0.84, -1.23 to -0.45
Current smoking	-1.39, -2.71 to -0.06	-1.43, -2.54 to -0.32	-1.63, -2.73 to -0.54††	-2.69, -3.45 to -1.93	-2.02, -2.64 to -1.40	-1.93, -2.55 to -1.32
Physical inactivity	-4.25, -6.43 to -2.07	-0.85, -2.85 to 1.14	---	-4.87, -6.00 to -3.74	-1.75, -2.68 to -0.82	-1.76, -2.69 to -0.83
Poor family and social support	-5.52, -7.42 to -3.61	-4.73, -6.38 to -3.09	-4.70, -6.34 to -3.06‡‡	-5.68, -6.37 to -5.00	-4.03, -4.56 to -3.50	-4.00, -4.54 to -3.47

* Adjusted for age, marital status, socioeconomic class and treatable traits ($p < 0.1$) from the univariate analysis; † Adjusted for age and treatable traits ($p < 0.1$) from the multivariate analysis; ‡ Adjusted for age, marital status, ethnicity, socioeconomic class and treatable traits ($p < 0.1$) from the univariate analysis; § Adjusted for age, socioeconomic class and treatable traits ($p < 0.1$) from the multivariate analysis. ** = $p < 0.05$; †† = $p < 0.01$; ‡‡ = $p < 0.001$

Table S3B: Treatable traits associated with quality of life – excluding patients with airflow limitation and chronic bronchitis – sensitivity analysis for the non-COPD/control group

Treatable traits	COPD			Non-COPD		
	Unadjusted	Model 1*	Model 2†	Unadjusted	Model 1‡	Model 2§
	<i>β, 95%CI</i>	<i>β, 95%CI</i>	<i>β, 95%CI</i>	<i>β, 95%CI</i>	<i>β, 95%CI</i>	<i>β, 95%CI</i>
Airflow limitation	-3.63, -8.17 to 0.91	---	---	---	---	---
Chronic bronchitis	-3.28, -5.46 to -1.09	-2.81, -4.67 to -0.95	-2.87, -4.65 to -1.08††	---	---	---
Chronic sputum production	-2.10, -3.49 to -0.72	-0.96, -2.35 to 0.43	---	-3.67, -4.69 to -2.65	-0.96, -1.91 to 0.02	-1.00, -1.96 to -0.05**
Breathlessness	-3.64, -4.91 to -2.38	-0.76, -2.03 to 0.50	---	-4.50, -5.11 to -3.89	-1.86, -2.44 to -1.28	-1.82, -2.40 to -1.25‡‡
Frequent chest infections	-2.10, -4.43 to 0.23	-1.25, -3.13 to 0.63	---	-0.77, -1.67 to 0.13	-0.33, -1.16 to 0.51	---
Osteoporosis	-0.83, -2.86 to 1.20	---	---	-2.46, -3.59 to -1.32	-1.68, -2.81 to -0.55	-1.67, -2.79 to -0.55††
Cardiovascular disease	-2.62, -3.93 to -1.31	-1.34, -2.60 to -0.08	-1.69, -2.90 to -0.48††	-2.08, -2.60 to -1.57	-1.08, -1.53 to -0.63	-1.08, -1.53 to -0.63‡‡
Arthritis	-3.52, -4.80 to -2.23	-1.41, -2.67 to -0.15	-1.52, -2.76 to -0.28**	-3.16, -3.70 to -2.63	-1.44, -1.92 to -0.97	-1.43, -1.90 to -0.95‡‡
Diabetes	-3.56, -5.42 to -1.69	-1.40, -3.17 to 0.37	---	-2.83, -3.86 to -1.80	-0.91, -1.83 to 0.01	-0.91, -1.83 to 0.01
Cancer	-1.40, -4.26 to 1.47	---	---	-0.39, -1.45 to 0.68	---	---
Psychiatric problems	-0.68, -3.23 to 1.88	---	---	-0.24, -1.33 to 0.85	---	---
Depression	-7.88, -9.38 to -6.38	-7.08, -8.73 to -5.44	-7.19, -8.81 to -5.57‡‡	-8.63, -9.36 to -7.90	-5.96, -6.67 to -5.25	-5.89, -6.59 to -5.18‡‡
Underweight	-0.71, -3.51 to 2.10	---	---	0.32, -3.88 to 4.51	---	---
Obesity	-0.27, -1.70 to 1.16	---	---	-1.90, -2.49 to -1.31	-0.54, -1.09 to -0.00	-0.44, -0.97 to 0.09
Sarcopaenia	-3.35, -5.16 to -1.54	-1.32, -3.49 to 0.84	---	-3.87, -4.95 to -2.80	-0.97, -2.03 to -0.08	-0.97, -2.02 to 0.09
Systemic inflammation	-0.93, -2.43 to 0.57	---	---	-1.03, -1.66 to -0.41	0.22, -0.28 to 0.72	---
Anaemia	-3.15, -5.55 to -0.75	-2.61, -4.42 to -0.79	-3.28, -5.06 to -1.49‡‡	-1.43, -2.40 to -0.46	-1.11, -1.87 to -0.35	-1.10, -1.85 to -0.35††
Disability	-3.81, -4.95 to -2.67	-2.30, -3.59 to -1.01	-2.83, -4.06 to -1.60‡‡	-4.08, -4.59 to -3.58	-0.83, -1.30 to -0.36	-0.79, -1.26 to -0.33††
Current smoking	-1.44, -2.82 to -0.05	-1.31, -2.66 to 0.04	-1.12, -2.40 to 0.17	-2.87, -3.82 to -1.93	-2.36, -3.27 to -1.44	-2.31, -3.22 to -1.40‡‡
Physical inactivity	-3.47, -5.48 to -1.46	1.35, -0.68 to 3.37	---	-4.53, -5.87 to -3.19	-1.18, -2.32 to -0.05	-1.18, -2.29 to -0.07**
Poor family and social support	-5.44, -7.05 to -3.83	-5.25, -6.82 to -3.68	-5.12, -6.65 to -3.59‡‡	-5.72, -6.49 to -4.94	-3.70, -4.40 to -2.99	-3.65, -4.35 to -2.95‡‡

*Adjusted for age, marital status, socioeconomic class and treatable traits (p <0.1) from the univariate analyses; †Adjusted for socioeconomic class and treatable traits (p <0.1) from the multivariate analyses; ‡Adjusted for age, marital status, socioeconomic class and treatable traits (p <0.1) from the univariate analyses; §Adjusted for age, socioeconomic class and treatable traits (p <0.1) from the multivariate analyses. ** = p<0.05; †† = p<0.01; ‡‡ = p<0.001