

## Sensitivity analyses

Web Table 1. The association between lung function and mortality: analyses using **FEV<sub>1</sub> percentage predicted**, Whitehall II study, United Kingdom, 2002-2010

Adjustment	HR*	95% CI	% reduction <sup>†</sup>
Model 1: adjusted for age and sex	1.55	1.11-2.17	
Model 2: Model 1 + smoking history <sup>‡</sup>	1.47	1.05-2.07	12.1
Model 3: Model 2 + socioeconomic position	1.45	1.03-2.04	3.6
Model 4: Model 2 + other health behaviors <sup>§</sup> + BMI	1.38	0.98-1.95	16.4
Model 5: Model 2 + blood cholesterol, systolic and diastolic blood pressure	1.44	1.02-2.02	5.4
Model 6: Model 2 + chronic diseases <sup>#</sup>	1.37	0.97-1.93	18.3
Model 7: Model 2 + inflammatory markers <sup>**</sup>	1.29	0.91-1.82	33.9
Model 8: fully-adjusted	1.21	0.85-1.72	50.5

<sup>a</sup> HR comparing participants in the lower tertile of FEV<sub>1</sub> percentage predicted to those in the top two tertiles.

<sup>b</sup> % reduction comparing Model 2 to Model 1 and then Models 3 to 8 to Model 2

<sup>c</sup> Smoking history constituted using smoking status measured from 1985/88 to 2002/04 and current amount of tobacco smoked in 2002/04.

<sup>d</sup> Alcohol consumption, physical activity, fruit and vegetable consumption.

<sup>e</sup> Diabetes, Coronary Heart Disease and self-reported stroke.

<sup>f</sup> Interleukin-6 and C-reactive protein, log-transformed.

Web Table S2. The association between lung function and mortality: analyses in **never smokers**, Whitehall II study, United Kingdom, 2002-2010 (N deaths/N = 59/2422)

Adjustment	Hazard Ratio <sup>a</sup>	95% Confidence Interval	% reduction <sup>b</sup>
Model 1: adjusted for age and sex	1.99	1.17-2.28	
Model 2: Model 1 + socioeconomic position	2.01	1.17-3.47	-0.0
Model 3: Model 1 + health behaviors <sup>c</sup> + BMI	1.83	1.07-3.15	12.2
Model 4: Model 1 + blood cholesterol, systolic and diastolic blood pressure	1.92	1.12-3.29	5.2
Model 5: Model 1 + chronic diseases <sup>d</sup>	1.84	1.07-3.17	11.4
Model 6: Model 1 + inflammatory markers <sup>e</sup>	1.81	1.05-3.11	13.8
Model 7: fully-adjusted	1.64	0.94-2.88	28.1

<sup>a</sup> HR comparing participants in the lower sex-specific tertile of forced expiratory volume/height<sup>2</sup> to those in the top two tertiles.

<sup>b</sup> % reduction comparing Models 2 to 7 to Model 1

<sup>c</sup> Alcohol consumption, physical activity, fruit and vegetable consumption

<sup>d</sup> Diabetes, Coronary Heart Disease and self-reported stroke

<sup>e</sup> Interleukin-6 and C-reactive protein, log-transformed

Web Table 3. The association between lung function and mortality: analyses in participants **without a history of asthma**<sup>a</sup>, Whitehall II study, United Kingdom, 2002-2010 (N deaths/N = 130/4336)

Adjustment	Hazard Ratio <sup>b</sup>	95% Confidence Interval	% reduction <sup>c</sup>
Model 1: adjusted for age and sex	1.93	1.34-2.78	
Model 2: Model 1 + smoking history <sup>d</sup>	1.87	1.30-2.70	4.8
Model 3: Model 2 + socioeconomic position	1.84	1.28-2.67	2.6
Model 4: Model 2 + other health behaviors <sup>e</sup> + BMI	1.78	1.23-2.57	7.9
Model 5: Model 2 + blood cholesterol, systolic and diastolic blood pressure	1.83	1.27-2.65	3.5
Model 6: Model 2 + chronic diseases <sup>f</sup>	1.73	1.19-2.50	12.4
Model 7: Model 2 + inflammatory markers <sup>g</sup>	1.64	1.13-2.37	21.0
Model 8: fully-adjusted	1.55	1.06-2.26	30.0

<sup>a</sup> History of asthma was assessed using self-reported asthma.

<sup>b</sup> HR comparing participants in the lower sex-specific tertile of forced expiratory volume/height<sup>2</sup> to those in the top two tertiles.

<sup>c</sup> % reduction comparing Model 2 to Model 1 and then Models 3 to 8 to Model 2

<sup>d</sup> Smoking history constituted using smoking status measured from 1985/88 to 2002/04 and current amount of tobacco smoked in 2002/04.

<sup>e</sup> Alcohol consumption, physical activity, fruit and vegetable consumption.

<sup>f</sup> Diabetes, Coronary Heart Disease and self-reported stroke.

<sup>g</sup> Interleukin-6 and C-reactive protein, log-transformed.

Web Table 4. The association between lung function and mortality: analyses **stratified by FEV/FVC ratio level**, Whitehall II study, United Kingdom, 2002-2010

Adjustment	Participants with FEV/FVC < 70% (N deaths/N = 36/721)			Participants with FEV/FVC ≥ 70% (N deaths/N = 103/4096)		
	Hazard Ratio <sup>a</sup>	95% Confidence Interval	% reduction <sup>b</sup>	Hazard Ratio <sup>a</sup>	95% Confidence Interval	% reduction <sup>b</sup>
Model 1: adjusted for age and sex	1.62	0.66-3.99		1.80	1.20-2.70	
Model 2: Model 1 + smoking history <sup>c</sup>	1.69	0.68-4.18	-8.8	1.78	1.18-2.66	1.9
Model 3: Model 2 + socioeconomic position	1.71	0.69-4.25	-2.2	1.73	1.15-2.61	4.9
Model 4: Model 2 + other health behaviors <sup>d</sup> + BMI	1.26	0.49-3.21	56.0	1.65	1.10-2.49	13.2
Model 5: Model 2 + blood cholesterol, systolic and diastolic blood pressure	1.58	0.63-3.95	12.8	1.73	1.15-2.60	4.9
Model 6: Model 2 + chronic diseases <sup>e</sup>	1.54	0.62-3.86	17.7	1.64	1.09-2.48	14.2
Model 7: Model 2 + inflammatory markers <sup>f</sup>	1.24	0.48-3.19	59.0	1.55	1.02-2.33	24.0
Model 8: fully-adjusted	1.09	0.41-2.85	83.6	1.43	0.94-2.19	38.0

<sup>a</sup> HR comparing participants in the lower sex-specific tertile of forced expiratory volume/height<sup>2</sup> to those in the top two tertiles.

<sup>b</sup> % reduction comparing Model 2 to Model 1 and then Models 3 to 8 to Model 2

<sup>c</sup> Smoking history constituted using smoking status measured from 1985/88 to 2002/04 and current amount of tobacco smoked in 2002/04.

<sup>d</sup> Alcohol consumption, physical activity, fruit and vegetable consumption.

<sup>e</sup> Diabetes, Coronary Heart Disease and self-reported stroke.

<sup>f</sup> Interleukin-6 and C-reactive protein, log-transformed.

Web Table 5. The association between lung function and mortality: analyses **excluding those in the lowest tertile of the fat-free-mass distribution**<sup>a</sup>, Whitehall II study, United Kingdom, 2002-2010 (N deaths/N = 71/2842)

Adjustment	Hazard Ratio <sup>b</sup>	95% Confidence Interval	% reduction <sup>c</sup>
Model 1: adjusted for age and sex	1.92	1.18-3.14	
Model 2: Model 1 + smoking history <sup>d</sup>	1.86	1.14-3.04	4.9
Model 3: Model 2 + socioeconomic position	1.84	1.12-3.01	1.7
Model 4: Model 2 + other health behaviors <sup>e</sup> + BMI	1.78	1.08-2.92	7.1
Model 5: Model 2 + blood cholesterol, systolic and diastolic blood pressure	1.85	1.13-3.02	0.9
Model 6: Model 2 + chronic diseases <sup>f</sup>	1.86	1.13-3.04	0.0
Model 7: Model 2 + inflammatory markers <sup>g</sup>	1.64	0.99-2.71	20.3
Model 8: fully-adjusted	1.67	1.00-2.78	17.4

<sup>a</sup> Fat-free mass (kg) was assessed during the clinical examination using bioimpedance scales (N with available data = 4253).

<sup>b</sup> HR comparing participants in the lower sex-specific tertile of forced expiratory volume/height<sup>2</sup> to those in the top two tertiles.

<sup>c</sup> % reduction comparing Model 2 to Model 1 and then Models 3 to 8 to Model 2

<sup>d</sup> Smoking history constituted using smoking status measured from 1985/88 to 2002/04 and current amount of tobacco smoked in 2002/04.

<sup>e</sup> Alcohol consumption, physical activity, fruit and vegetable consumption.

<sup>f</sup> Diabetes, Coronary Heart Disease and self-reported stroke.

<sup>g</sup> Interleukin-6 and C-reactive protein, log-transformed.

Web Table 6. The association between lung function and mortality: analyses **stratified by BMI categories**, Whitehall II study, United Kingdom, 2002-2010

Adjustment	Participants with BMI<30 kg/m <sup>2</sup> (N deaths/N =101/3976)			Participants with BMI≥30 kg/m <sup>2</sup> (N deaths/N = 38/841)		
	Hazard Ratio <sup>a</sup>	95% Confidence Interval	% reduction <sup>b</sup>	Hazard Ratio <sup>a</sup>	95% Confidence Interval	% reduction <sup>b</sup>
Model 1: adjusted for age and sex	1.83	1.22-2.77		1.99	1.01-3.92	
Model 2: Model 1 + smoking history <sup>c</sup>	1.72	1.14-2.61	10.3	1.96	0.99-3.87	2.2
Model 3: Model 2 + socioeconomic position	1.65	1.08-2.50	7.7	2.05	1.04-4.07	-6.7
Model 4: Model 2 + other health behaviors <sup>d</sup> + BMI	1.64	1.08-2.49	8.8	1.88	0.94-3.75	6.2
Model 5: Model 2 + blood cholesterol, systolic and diastolic blood pressure	1.67	1.10-2.54	5.4	1.92	0.96-3.82	3.1
Model 6: Model 2 + chronic diseases <sup>e</sup>	1.62	1.06-2.47	11.0	1.83	0.92-3.64	10.2
Model 7: Model 2 + inflammatory markers <sup>f</sup>	1.54	1.01-2.34	20.4	1.69	0.84-3.43	22.0
Model 8: fully-adjusted	1.40	0.91-2.15	38.0	1.66	0.80-3.45	24.7

<sup>a</sup> HR comparing participants in the lower sex-specific tertile of forced expiratory volume/height<sup>2</sup> to those in the top two tertiles.

<sup>b</sup> % reduction comparing Model 2 to Model 1 and then Models 3 to 8 to Model 2

<sup>c</sup> Smoking history constituted using smoking status measured from 1985/88 to 2002/04 and current amount of tobacco smoked in 2002/04.

<sup>d</sup> Alcohol consumption, physical activity, fruit and vegetable consumption.

<sup>e</sup> Diabetes, Coronary Heart Disease and self-reported stroke.

<sup>f</sup> Interleukin-6 and C-reactive protein, log-transformed.

Web Table 7. The association between lung function and mortality: **analyses excluding deaths from respiratory diseases (N=2) and lung cancer (N=1) in the first 2 years of follow-up**, Whitehall II study, United Kingdom, 2002-2010 (N deaths/N = 136/4814)

Adjustment	Hazard Ratio <sup>a</sup>	95% Confidence Interval	% reduction <sup>b</sup>
Model 1: adjusted for age and sex	1.88	0.82-1.66	
Model 2: Model 1 + smoking history <sup>c</sup>	1.81	1.27-2.59	6.0
Model 3: Model 2 + socioeconomic position	1.79	1.25-2.56	1.9
Model 4: Model 2 + other health behaviors <sup>d</sup> + BMI	1.70	1.19-2.43	10.7
Model 5: Model 2 + blood cholesterol, systolic and diastolic blood pressure	1.77	1.24-2.53	3.8
Model 6: Model 2 + chronic diseases <sup>e</sup>	1.68	1.17-2.41	12.6
Model 7: Model 2 + inflammatory markers <sup>f</sup>	1.57	1.09-2.26	24.0
Model 8: fully-adjusted	1.47	0.72-1.79	35.1

<sup>a</sup> HR comparing participants in the lower sex-specific tertile of forced expiratory volume/height<sup>2</sup> to those in the top two tertiles.

<sup>b</sup>% reduction comparing Model 2 to Model 1 and then Models 3 to 8 to Model 2

<sup>c</sup> Smoking history constituted using smoking status measured from 1985/88 to 2002/04 and current amount of tobacco smoked in 2002/04.

<sup>d</sup> Alcohol consumption, physical activity, fruit and vegetable consumption.

<sup>e</sup> Diabetes, Coronary Heart Disease and self-reported stroke.

<sup>f</sup> Interleukin-6 and C-reactive protein, log-transformed.

Web Table 8. The association between lung function and mortality: **analyses excluding participants with CRP level greater than 10 mg/L on the day of the clinical examination**, Whitehall II study, United Kingdom, 2002-2010 (N deaths/N = 129/4657)

Adjustment	Hazard Ratio <sup>a</sup>	95% Confidence Interval	% reduction <sup>b</sup>
Model 1: adjusted for age and sex	1.90	1.30-2.78	
Model 2: Model 1 + smoking history <sup>c</sup>	1.83	1.25-2.68	5.8
Model 3: Model 2 + socioeconomic position	1.80	1.23-2.65	2.7
Model 4: Model 2 + other health behaviors <sup>d</sup> + BMI	1.73	1.18-2.55	9.3
Model 5: Model 2 + blood cholesterol, systolic and diastolic blood pressure	1.78	1.22-2.62	4.6
Model 6: Model 2 + chronic diseases <sup>e</sup>	1.68	1.15-2.48	14.2
Model 7: Model 2 + inflammatory markers <sup>f</sup>	1.62	1.10-2.38	20.2
Model 8: fully-adjusted	1.51	0.71-1.87	31.8

<sup>a</sup> HR comparing participants in the lower sex-specific tertile of forced expiratory volume/height<sup>2</sup> to those in the top two tertiles.

<sup>b</sup> % reduction comparing Model 2 to Model 1 and then Models 3 to 8 to Model 2

<sup>c</sup> Smoking history constituted using smoking status measured from 1985/88 to 2002/04 and current amount of tobacco smoked in 2002/04.

<sup>d</sup> Alcohol consumption, physical activity, fruit and vegetable consumption.

<sup>e</sup> Diabetes, Coronary Heart Disease and self-reported stroke.

<sup>f</sup> Interleukin-6 and C-reactive protein, log-transformed.