

Appendix A. Results of competing risk regression analysis for the effects of covariates.

Table A.1. Results of cause-specific and Fine-Gray sub-distribution hazard models representing hazard ratio of the event of interest for every % increase in percent predicted forced expiratory volume in 1 second.

Parameter	Reference	<i>Diabetes cause-specific hazard</i>				<i>Diabetes sub-distribution hazard</i>			
		Hazard ratio	95% CI		P-value	Hazard ratio	95% CI		P-value
Age: 35-44 years	Age: 25-34 years	1.81	0.61	5.37	0.29	1.79	0.60	5.28	0.29
Age: 45-54 years		2.35	0.85	6.47	0.10	2.24	0.78	6.42	0.14
Age: 55-64 years		4.15	1.53	11.26	<0.01	3.90	1.41	10.79	0.01
Age: 65-74 years		3.53	1.16	10.74	0.03	3.19	0.98	10.31	0.05
Body Mass Index (kg/m ²)		1.46	0.97	2.22	0.07	1.49	1.07	2.07	0.02
(Body Mass Index) ²		1.00	0.99	1.00	0.25	1.00	0.99	1.00	0.09
Percent Predicted Forced Expiratory Volume		0.98	0.96	0.99	<0.01	0.98	0.96	0.99	0.02
Sex: Female	Male	0.47	0.25	0.88	0.02	0.47	0.24	0.91	0.02
Race: White	Race: Black	1.87	0.53	6.67	0.33	1.78	0.48	6.55	0.39
Education: less than high school	Education: at least high school	1.25	0.65	2.41	0.50	1.22	0.62	2.40	0.56
Smoking status: Ever Smoker	Smoking status: Never smoker	0.70	0.38	1.29	0.25	0.70	0.38	1.29	0.26
Physically Inactive	Active	0.23	0.03	1.67	0.15	0.22	0.03	1.68	0.15
Marital status: Currently married	Marital status: Not currently married	1.50	0.63	3.58	0.36	1.46	0.63	3.38	0.38
Alcohol consumption: More than 4 alcoholic drinks in a month	Alcohol consumption: Less than 4 alcoholic drinks in a month	0.96	0.52	1.77	0.89	0.97	0.53	1.76	0.91
FEV1/FVC<0.7		0.73	0.32	1.67	0.45	0.71	0.31	1.66	0.43
Charlson's comorbidity index score		0.77	0.25	2.35	0.65	0.71	0.27	1.86	0.49
Parameter	Reference	<i>Asthma cause-specific hazard</i>				<i>Asthma sub-distribution hazard</i>			
		Hazard ratio	95% CI		P-value	Hazard ratio	95% CI		P-value
Age: 35-44 years	Age: 25-34 years	0.39	0.08	1.94	0.25	0.39	0.07	2.00	0.26
Age: 45-54 years		1.28	0.43	3.83	0.66	1.24	0.47	3.30	0.67
Age: 55-64 years		1.29	0.37	4.43	0.69	1.17	0.39	3.49	0.78
Age: 65-74 years		1.28	0.30	5.39	0.74	1.11	0.26	4.72	0.88
Body Mass Index (kg/m ²)		1.29	0.64	2.59	0.48	1.33	0.75	2.34	0.33
(Body Mass Index) ²		1.00	0.98	1.01	0.56	1.00	0.99	1.01	0.34
Percent Predicted Forced Expiratory Volume		0.96	0.93	0.98	<0.01	0.96	0.94	0.98	<0.01
Sex: Female	Male	2.83	1.11	7.22	0.03	2.94	1.25	6.93	0.01
Race: White	Race: Black	1.55	0.20	12.01	0.67	1.57	0.21	12.05	0.66
Education: less than high school	Education: at least high school	0.35	0.09	1.40	0.14	0.34	0.08	1.42	0.14
Smoking status: Ever Smoker	Smoking status: Never smoker	1.25	0.53	2.96	0.61	1.28	0.59	2.80	0.53
Physically Inactive	Active	2.37	0.76	7.40	0.14	2.24	0.76	6.65	0.15
Marital status: Currently married	Marital status: Not currently married	1.18	0.43	3.25	0.75	1.15	0.44	3.02	0.78
Alcohol consumption: More than 4 alcoholic drinks in a month	Alcohol consumption: Less than 4 alcoholic drinks in a month	0.42	0.14	1.26	0.12	0.42	0.15	1.22	0.11
FEV1/FVC<0.7		1.93	0.71	5.25	0.20	1.92	0.73	5.04	0.18
Charlson's comorbidity index score		1.28	0.43	3.83	0.66	1.17	0.58	2.37	0.66

Table A.1. continued Results of cause-specific and Fine-Gray sub-distribution hazard models representing hazard ratio of the event of interest for every % increase in percent predicted forced expiratory volume in 1 second.

		Heart attack/Myocardial Infarction cause-specific hazard				Heart attack/Myocardial Infarction sub-distribution hazard			
Parameter	Reference	Hazard ratio	95% CI		P-value	Hazard ratio	95% CI		P-value
Age: 35-44 years	Age: 25-34 years	3.84	0.39	37.66	0.25	3.75	0.38	37.39	0.26
Age: 45-54 years		15.41	2.00	118.75	<0.01	14.98	1.92	116.86	<0.01
Age: 55-64 years		36.09	4.78	272.40	<0.01	33.63	4.33	261.44	<0.01
Age: 65-74 years		45.71	5.93	352.43	<0.01	40.84	4.98	335.13	<0.01
Body Mass Index (kg/m ²)		1.17	0.70	1.94	0.56	1.19	0.71	1.99	0.51
(Body Mass Index) ²		1.00	0.99	1.01	0.67	1.00	0.99	1.01	0.59
Percent Predicted Forced Expiratory Volume		0.99	0.97	1.00	0.12	0.99	0.98	1.00	0.10
Sex: Female	Male	0.36	0.18	0.72	<0.01	0.37	0.19	0.71	<0.01
Race: White	Race: Black	2.40	0.54	10.71	0.25	2.33	0.52	10.48	0.27
Education: less than high school	Education: at least high school	1.17	0.63	2.16	0.62	1.15	0.59	2.22	0.68
Smoking status: Ever Smoker	Smoking status: Never smoker	1.80	0.90	3.58	0.10	1.82	0.90	3.66	0.09
Physically Inactive	Active	0.67	0.21	2.19	0.51	0.64	0.20	2.04	0.45
Marital status: Currently married	Marital status: Not currently married	0.71	0.36	1.39	0.31	0.68	0.35	1.31	0.25
Alcohol consumption: More than 4 alcoholic drinks in a month	Alcohol consumption: Less than 4 alcoholic drinks in a month	0.95	0.53	1.72	0.87	0.95	0.52	1.76	0.87
FEV1/FVC<0.7		0.63	0.30	1.33	0.23	0.63	0.32	1.24	0.18
Charlson's comorbidity index score		1.29	0.67	2.47	0.45	1.17	0.63	2.15	0.62
		Hypertension cause-specific hazard				Hypertension sub-distribution hazard			
Parameter	Reference	Hazard ratio	95% CI		P-value	Hazard ratio	95% CI		P-value
Age: 35-44 years	Age: 25-34 years	1.55	1.13	2.14	<0.01	1.54	1.13	2.11	<0.01
Age: 45-54 years		1.85	1.36	2.53	<0.01	1.81	1.33	2.47	<0.01
Age: 55-64 years		1.94	1.38	2.73	<0.01	1.82	1.29	2.57	<0.01
Age: 65-74 years		2.06	1.40	3.03	<0.01	1.86	1.26	2.76	<0.01
Body Mass Index (kg/m ²)		1.20	1.05	1.37	<0.01	1.22	1.07	1.38	<0.01
(Body Mass Index) ²		1.00	1.00	1.00	0.15	1.00	1.00	1.00	0.07
Percent Predicted Forced Expiratory Volume		1.00	0.99	1.01	0.66	1.00	0.99	1.01	0.99
Sex: Female	Male	1.16	0.93	1.45	0.18	1.19	0.95	1.48	0.13
Race: White	Race: Black	0.78	0.55	1.10	0.15	0.76	0.53	1.08	0.13
Education: less than high school	Education: at least high school	1.07	0.82	1.41	0.62	1.04	0.79	1.38	0.78
Smoking status: Ever Smoker	Smoking status: Never smoker	1.08	0.87	1.35	0.50	1.09	0.87	1.36	0.48
Physically Inactive	Active	1.11	0.78	1.60	0.56	1.12	0.78	1.61	0.55
Marital status: Currently married	Marital status: Not currently married	1.09	0.83	1.43	0.56	1.07	0.81	1.40	0.64
Alcohol consumption: More than 4 alcoholic drinks in a month	Alcohol consumption: Less than 4 alcoholic drinks in a month	1.05	0.83	1.32	0.70	1.05	0.84	1.32	0.67
FEV1/FVC<0.7		1.08	0.80	1.48	0.61	1.07	0.79	1.46	0.65
Charlson's comorbidity index score		1.49	1.22	1.83	<0.01	1.37	1.12	1.68	<0.01

Table A.1. continued Results of cause-specific and Fine-Gray sub-distribution hazard models representing hazard ratio of the event of interest for every % increase in percent predicted forced expiratory volume in 1 second.

Parameter	Reference	<i>All-cause mortality cause-specific hazard</i>				<i>All-cause mortality sub-distribution hazard</i>			
		Hazard ratio	95% CI		P-value	Hazard ratio	95% CI		P-value
Age: 35-44 years	Age: 25-34 years	1.36	0.59	3.10	0.47	1.31	0.57	3.03	0.52
Age: 45-54 years		1.74	0.81	3.76	0.16	1.68	0.79	3.56	0.18
Age: 55-64 years		3.74	1.82	7.70	<0.01	3.52	1.73	7.17	<0.01
Age: 65-74 years		11.06	5.51	22.21	<0.01	10.21	5.13	20.34	<0.01
Body Mass Index (kg/m ²)		0.80	0.65	0.99	0.04	0.81	0.62	1.05	0.11
(Body Mass Index) ²		1.00	1.00	1.01	0.02	1.00	1.00	1.01	0.08
Percent Predicted Forced Expiratory Volume		0.98	0.97	0.99	<0.01	0.98	0.97	0.99	<0.01
Sex: Female	Male	0.53	0.35	0.82	<0.01	0.54	0.36	0.82	<0.01
Race: White	Race: Black	2.31	0.94	5.64	0.07	2.20	0.96	5.04	0.06
Education: less than high school	Education: at least high school	1.22	0.81	1.85	0.35	1.23	0.81	1.85	0.34
Smoking status: Ever Smoker	Smoking status: Never smoker	0.74	0.49	1.13	0.16	0.74	0.49	1.12	0.16
Physically Inactive	Active	1.33	0.74	2.39	0.34	1.26	0.71	2.23	0.43
Marital status: Currently married	Marital status: Not currently married	0.89	0.57	1.39	0.60	0.86	0.54	1.38	0.54
Alcohol consumption: More than 4 alcoholic drinks in a month	Alcohol consumption: Less than 4 alcoholic drinks in a month	1.32	0.89	1.94	0.17	1.35	0.91	2.00	0.13
FEV1/FVC<0.7		1.23	0.76	1.98	0.40	1.23	0.74	2.04	0.43
Charlson's comorbidity index score		1.67	1.25	2.22	<0.01	1.55	1.11	2.17	0.01

Appendix B. Results of competing risk regression analysis for the effects of covariates.

Table B.1. Results of cause-specific and Fine-Gray sub-distribution hazard models representing hazard ratio of the event of interest for every liter increase in absolute forced expiratory volume in 1 second.

Parameter	Reference	<i>Diabetes cause-specific hazard</i>				<i>Diabetes sub-distribution hazard</i>			
		Hazard ratio	95% CI		P-value	Hazard ratio	95% CI		P-value
Age: 35-44 years	Age: 25-34 years	1.54	0.51	4.60	0.44	1.53	0.51	4.59	0.45
Age: 45-54 years		1.60	0.56	4.58	0.38	1.55	0.50	4.79	0.45
Age: 55-64 years		2.25	0.76	6.68	0.14	2.18	0.67	7.16	0.20
Age: 65-74 years		1.50	0.43	5.30	0.53	1.42	0.35	5.82	0.63
Body Mass Index (kg/m ²)		1.45	0.95	2.21	0.09	1.46	1.03	2.07	0.03
(Body Mass Index) ²		1.00	0.99	1.00	0.28	1.00	0.99	1.00	0.14
Forced Expiratory Volume in 1 second (FEV1)(liter)		0.45	0.27	0.76	<0.01	0.47	0.27	0.82	<0.01
Sex: Female	Male	0.24	0.11	0.52	<0.01	0.25	0.11	0.56	<0.01
Race: White	Race: Black	2.56	0.72	9.14	0.15	2.38	0.64	8.83	0.20
Education: less than high school	Education: at least high school	1.21	0.63	2.32	0.57	1.19	0.61	2.30	0.61
Smoking status: Ever Smoker	Smoking status: Never smoker	0.71	0.39	1.31	0.28	0.71	0.38	1.32	0.28
Physically Inactive	Active	0.22	0.03	1.62	0.14	0.22	0.03	1.62	0.14
Marital status: Currently married	Marital status: Not currently married	1.51	0.63	3.60	0.35	1.47	0.64	3.42	0.37
Alcohol consumption: More than 4 alcoholic drinks in a month	Alcohol consumption: Less than 4 alcoholic drinks in a month	0.96	0.52	1.77	0.89	0.97	0.53	1.78	0.92
FEV1/FVC<0.7		0.73	0.33	1.65	0.45	0.71	0.30	1.66	0.43
Charlson's comorbidity index score		0.77	0.25	2.36	0.65	0.72	0.28	1.89	0.51
Parameter	Reference	<i>Asthma cause-specific hazard</i>				<i>Asthma sub-distribution hazard</i>			
		Hazard ratio	95% CI		P-value	Hazard ratio	95% CI		P-value
Age: 35-44 years	Age: 25-34 years	0.30	0.06	1.51	0.14	0.30	0.06	1.66	0.17
Age: 45-54 years		0.68	0.21	2.19	0.52	0.69	0.25	1.88	0.46
Age: 55-64 years		0.48	0.12	1.89	0.29	0.46	0.14	1.46	0.19
Age: 65-74 years		0.32	0.06	1.71	0.18	0.30	0.06	1.45	0.14
Body Mass Index (kg/m ²)		1.25	0.62	2.51	0.54	1.28	0.72	2.30	0.40
(Body Mass Index) ²		1.00	0.98	1.01	0.61	1.00	0.99	1.01	0.42
Forced Expiratory Volume in 1 second (FEV1)(liter)		0.21	0.10	0.47	<0.01	0.24	0.12	0.46	<0.01
Sex: Female	Male	0.90	0.31	2.62	0.84	1.00	0.37	2.69	1.00
Race: White	Race: Black	2.66	0.35	20.39	0.35	2.58	0.36	18.53	0.35
Education: less than high school	Education: at least high school	0.33	0.08	1.29	0.11	0.32	0.08	1.31	0.11
Smoking status: Ever Smoker	Smoking status: Never smoker	1.25	0.53	2.97	0.61	1.28	0.58	2.82	0.53
Physically Inactive	Active	2.36	0.76	7.37	0.14	2.21	0.75	6.53	0.15
Marital status: Currently married	Marital status: Not currently married	1.11	0.41	3.06	0.83	1.08	0.42	2.77	0.88
Alcohol consumption: More than 4 alcoholic drinks in a month	Alcohol consumption: Less than 4 alcoholic drinks in a month	0.44	0.15	1.30	0.14	0.44	0.15	1.27	0.13
FEV1/FVC<0.7		1.92	0.71	5.17	0.20	1.90	0.73	4.97	0.19
Charlson's comorbidity index score		1.30	0.42	3.97	0.65	1.20	0.60	2.40	0.61

Table B.1 continued. Results of cause-specific and Fine-Gray sub-distribution hazard models representing hazard ratio of the event of interest for every liter increase in absolute forced expiratory volume in 1 second.

Parameter	Reference	<i>Heart attack/ Myocardial Infarction cause-specific hazard</i>				<i>Heart attack/ Myocardial Infarction sub-distribution hazard</i>			
		Hazard ratio	95% CI		P-value	Hazard ratio	95% CI		P-value
Age: 35-44 years	Age: 25-34 years	3.41	0.35	33.52	0.29	3.38	0.34	33.55	0.30
Age: 45-54 years		11.66	1.48	91.96	0.02	11.78	1.54	89.98	0.02
Age: 55-64 years		23.58	2.97	187.05	<0.01	23.23	3.08	175.34	<0.01
Age: 65-74 years		25.09	2.97	211.66	<0.01	24.26	2.96	198.97	<0.01
Body Mass Index (kg/m ²)		1.16	0.69	1.95	0.57	1.19	0.70	2.02	0.52
(Body Mass Index) ²		1.00	0.99	1.01	0.68	1.00	0.99	1.01	0.60
Forced Expiratory Volume in 1 second (FEV1)(liter)		0.60	0.37	0.98	0.04	0.65	0.44	0.94	0.02
Sex: Female	Male	0.24	0.11	0.54	<0.01	0.26	0.13	0.53	<0.01
Race: White	Race: Black	2.85	0.64	12.75	0.17	2.70	0.59	12.27	0.20
Education: less than high school	Education: at least high school	1.14	0.61	2.11	0.68	1.13	0.59	2.16	0.72
Smoking status: Ever Smoker	Smoking status: Never smoker	1.81	0.91	3.61	0.09	1.82	0.91	3.64	0.09
Physically Inactive	Active	0.65	0.20	2.13	0.48	0.62	0.19	1.97	0.41
Marital status: Currently married	Marital status: Not currently married	0.72	0.37	1.42	0.35	0.69	0.35	1.34	0.27
Alcohol consumption: More than 4 alcoholic drinks in a month	Alcohol consumption: Less than 4 alcoholic drinks in a month	0.95	0.53	1.71	0.86	0.95	0.51	1.75	0.86
FEV1/FVC<0.7		0.61	0.29	1.25	0.18	0.60	0.30	1.20	0.15
Charlson's comorbidity index score		1.28	0.67	2.47	0.45	1.17	0.63	2.16	0.62
Parameter	Reference	<i>Hypertension cause-specific hazard</i>				<i>Hypertension sub-distribution hazard</i>			
		Hazard ratio	95% CI		P-value	Hazard ratio	95% CI		P-value
Age: 35-44 years	Age: 25-34 years	1.50	1.08	2.08	0.01	1.50	1.09	2.07	0.01
Age: 45-54 years		1.72	1.23	2.39	<0.01	1.72	1.24	2.38	<0.01
Age: 55-64 years		1.73	1.18	2.53	<0.01	1.68	1.14	2.47	<0.01
Age: 65-74 years		1.76	1.12	2.75	0.01	1.67	1.06	2.61	0.03
Body Mass Index (kg/m ²)		1.20	1.05	1.37	<0.01	1.21	1.07	1.38	<0.01
(Body Mass Index) ²		1.00	1.00	1.00	0.15	1.00	1.00	1.00	0.08
Forced Expiratory Volume in 1 second (FEV1)(liter)		0.87	0.72	1.06	0.16	0.91	0.76	1.10	0.33
Sex: Female	Male	1.03	0.77	1.36	0.85	1.09	0.82	1.44	0.54
Race: White	Race: Black	0.82	0.58	1.15	0.24	0.78	0.54	1.11	0.17
Education: less than high school	Education: at least high school	1.06	0.81	1.39	0.68	1.03	0.78	1.37	0.83
Smoking status: Ever Smoker	Smoking status: Never smoker	1.07	0.86	1.33	0.56	1.07	0.86	1.34	0.55
Physically Inactive	Active	1.11	0.77	1.59	0.57	1.11	0.77	1.61	0.56
Marital status: Currently married	Marital status: Not currently married	1.09	0.83	1.43	0.53	1.07	0.82	1.41	0.61
Alcohol consumption: More than 4 alcoholic drinks in a month	Alcohol consumption: Less than 4 alcoholic drinks in a month	1.05	0.84	1.32	0.68	1.05	0.84	1.32	0.66
FEV1/FVC<0.7		1.04	0.77	1.41	0.81	1.02	0.75	1.39	0.89
Charlson's comorbidity index score		1.49	1.22	1.83	<0.01	1.37	1.12	1.69	<0.01

Table B.1 continued. Results of cause-specific and Fine-Gray sub-distribution hazard models representing hazard ratio of the event of interest for every liter increase in absolute forced expiratory volume in 1 second.

Parameter	Reference	<i>All-cause mortality cause-specific hazard</i>				<i>All-cause mortality sub-distribution hazard</i>			
		Hazard ratio	95% CI		P-value	Hazard ratio	95% CI		P-value
Age: 35-44 years	Age: 25-34 years	1.21	0.53	2.79	0.65	1.19	0.52	2.74	0.68
Age: 45-54 years		1.34	0.61	2.97	0.47	1.33	0.61	2.89	0.47
Age: 55-64 years		2.52	1.16	5.46	0.02	2.48	1.19	5.17	0.02
Age: 65-74 years		6.18	2.77	13.81	<0.01	6.09	2.85	13.01	<0.01
Body Mass Index (kg/m ²)		0.80	0.64	0.99	0.04	0.80	0.61	1.05	0.11
(Body Mass Index) ²		1.01	1.00	1.01	0.02	1.00	1.00	1.01	0.08
Forced Expiratory Volume in 1 second (FEV1)(liter)		0.59	0.43	0.81	<0.01	0.63	0.46	0.85	<0.01
Sex: Female	Male	0.35	0.22	0.58	<0.01	0.38	0.24	0.59	<0.01
Race: White	Race: Black	2.79	1.14	6.84	0.03	2.62	1.14	6.04	0.02
Education: less than high school	Education: at least high school	1.18	0.78	1.78	0.45	1.19	0.78	1.80	0.42
Smoking status: Ever Smoker	Smoking status: Never smoker	0.75	0.49	1.15	0.19	0.75	0.50	1.14	0.18
Physically Inactive	Active	1.35	0.75	2.42	0.32	1.28	0.73	2.26	0.40
Marital status: Currently married	Marital status: Not currently married	0.90	0.57	1.41	0.64	0.87	0.54	1.40	0.57
Alcohol consumption: More than 4 alcoholic drinks in a month	Alcohol consumption: Less than 4 alcoholic drinks in a month	1.33	0.90	1.96	0.15	1.35	0.91	2.01	0.13
FEV1/FVC<0.7		1.30	0.81	2.08	0.27	1.30	0.79	2.14	0.30
Charlson's comorbidity index score		1.65	1.23	2.21	0.01	1.54	1.10	2.16	0.01