Supplementary Table S1. Hazard ratios (95% CIs) for lung cancer mortality per glucose and HbA1c category in clinically relevant subgroups

Subgroup	**Glycemic status**						***p* for interaction**
HbA1c category[a] (%)	**< 5.7**	**5.7–5.9**	**6.0–6.4**	**≥ 6.5 (Screen-detected diabetes)**	***p* for trend**	**Previously diagnosed diabetes**	
Age (years)							0.117
< 50 (*n* = 549,133)	Reference	1.02 (0.64–1.62)	1.15 (0.69–1.93)	3.80 (1.65–8.74)	0.025	2.20 (0.91–5.35)	
≥ 50 (*n* = 117,755)	Reference	1.07 (0.81–1.40)	1.43 (1.09–1.87)	1.41 (0.85–2.33)	0.010	1.39 (1.00–1.92)	
Sex							0.689
Female (*n* = 317,664)	Reference	0.83 (0.53–1.32)	1.09 (0.67–1.76)	1.15 (0.35–3.76)	0.749	1.02 (0.51–2.02)	
Male (*n* = 349,224)	Reference	1.15 (0.87–1.52)	1.50 (1.14–1.98)	1.89 (1.18–3.02)	< 0.001	1.58 (1.12–2.22)	
Ever smoker							0.647
No (*n* = 367,550)	Reference	0.86 (0.55–1.34)	1.21 (0.77–1.90)	1.54 (0.6–3.95)	0.434	0.88 (0.45–1.75)	
Yes (*n* = 264,119)	Reference	1.10 (0.82–1.47)	1.43 (1.07–1.91)	1.80 (1.08–3.01)	0.001	1.61 (1.12–2.30)	
FBG category[b] (mg/dl)	**< 90**	**90–99**	**100–125**	**≥ 126 (Screen-detected diabetes)**	***p* for trend**	**Previously diagnosed diabetes**	***p* for interaction**
Age (years)							0.758
< 50 (*n* = 549,133)	Reference	1.19 (0.73–1.94)	1.68 (0.81–3.49)	3.00 (1.21–7.46)	0.007	2.20 (0.95–5.09)	
≥ 50 (*n* = 117,755)	Reference	1.41 (1.12–1.78)	1.70 (1.30–2.22)	2.10 (1.44–3.09)	< 0.001	1.49 (1.12–1.98)	
Sex							0.136
Female (*n* = 317,664)	Reference	1.44 (0.94–2.19)	0.96 (0.53–1.73)	2.65 (1.29–5.47)	0.545	1.30 (0.67–2.54)	
Male (*n* = 349,224)	Reference	1.35 (1.06–1.72)	1.99 (1.52–2.61)	2.10 (1.41–3.14)	< 0.001	1.59 (1.19–2.13)	
Ever smoker							0.080
No (*n* = 367,550)	Reference	1.58 (1.07–2.34)	0.97 (0.54–1.75)	2.53 (1.24–5.13)	0.463	1.07 (0.56–2.06)	
Yes (*n* = 264,119)	Reference	1.36 (1.05–1.75)	1.99 (1.49–2.66)	2.15 (1.40–3.31)	< 0.001	1.68 (1.24–2.29)	

CI, confidence interval; *FBG,* fasting blood glucose; *HbA1c,* hemoglobin A1c.

Cox proportional hazard models were used with age as a timescale to estimate hazard ratios and 95% CIs. The multivariable model was adjusted for age (timescale); sex; center; screening year; smoking status; regular exercise; body mass index; education level; dyslipidemia medication use; history of hypertension, chronic obstructive pulmonary disease, and asthma; and family history of cancer.

[a]HbA1c < 5.7, 5.7–5.9, 6.0–6.4, and ≥6.5% correspond to < 36, 36–38, 39–46, and ≥48 mmol/mol, respectively.

[b]FBG < 90, 90–99, 100–125, and ≥126 mg/dL correspond to < 5.0, 5.0–5.5, 5.6–6.9, and ≥7.0 mmol/L, respectively.

Supplementary Table S2. Hazard ratios (95% CIs)[a] for lung cancer mortality by insulin resistance in clinically relevant subgroups

Subgroup	Insulin resistance		*p* for interaction
	HOMA-IR < 2.5	HOMA-IR ≥ 2.5	
Age (years)			0.208
< 50 (*n* = 549,133)	Reference	1.76 (1.18–2.61)	
≥ 50 (*n* = 117,755)	Reference	1.33 (1.07–1.65)	
Sex			0.720
Female (*n* = 317,664)	Reference	1.50 (1.00–2.25)	
Male (*n* = 349,224)	Reference	1.38 (1.11–1.72)	
Ever smoker			0.477
No (*n* = 367,550)	Reference	1.61 (1.11–2.35)	
Yes (*n* = 264,119)	Reference	1.38 (1.10–1.74)	

CI, confidence interval; *HOMA-IR,* homeostasis model assessment of insulin resistance.

[a]Cox proportional hazard models were used with age as a timescale to estimate hazard ratios and 95% CIs. The multivariable model was adjusted for age (timescale); sex; center; screening year; smoking status, regular exercise; body mass index; education level; dyslipidemia medication use; history of hypertension, chronic obstructive pulmonary disease, and asthma; and family history of cancer.

Supplementary Table S3. Hazard ratios (95% CIs) for lung cancer mortality per glucose category in the overall population after excluding lung cancer mortality cases that occurred during the first 2–4 years of the follow-up period

	Multivariable-adjusted HR[a] (95% CI)		
	After excluding 54 cases occurring in the first 2 years of the follow-up period	**After excluding 88 cases occurring in the first 3 years of the follow-up period**	**After excluding 137 cases occurring in the first 4 years of the follow-up period**
HbA1c category[b] (%)			
< 5.7	1.00 (reference)	1.00 (reference)	1.00 (reference)
5.7–5.9	1.28 (1.02–1.60)	1.25 (0.99–1.58)	1.21 (0.95–1.54)
6.0–6.4	1.63 (1.25–2.12)	1.62 (1.24–2.13)	1.51 (1.14–2.01)
≥ 6.5 (screen-detected diabetes)	2.19 (1.52–3.15)	2.12 (1.45–3.10)	1.93 (1.29–2.90)
P for trend	<0.001	<0.001	0.001
Previously diagnosed diabetes	1.53 (1.16–2.03)	1.61 (1.21–2.14)	1.52 (1.13–2.05)
FBG category[c] (mg/dl)			
< 90	1.00 (reference)	1.00 (reference)	1.00 (reference)
90–99	1.03 (0.81–1.32)	1.04 (0.81–1.35)	1.05 (0.80–1.37)
100–125	1.31 (1.02–1.68)	1.27 (0.98–1.65)	1.32 (1.00–1.73)
≥ 126 (screen-detected diabetes)	1.80 (1.16–2.79)	1.92 (1.23–2.98)	1.77 (1.10–2.85)
P for trend	0.002	0.002	0.005
Previously diagnosed diabetes	1.43 (1.04–1.97)	1.51 (1.09–2.09)	1.49 (1.06–2.10)
Insulin resistance[d]			
HOMA-IR < 2.5	1.00 (reference)	1.00 (reference)	1.00 (reference)
HOMA-IR ≥ 2.5	1.47 (1.17–1.85)	1.51 (1.20–1.91)	1.52 (1.19–1.94)

CI, confidence interval; *FBG,* fasting blood glucose; *HbA1c,* hemoglobin A1c; *HOMA-IR,* homeostasis model assessment of insulin resistance; *HR,* hazard ratio.

[a]Cox proportional hazard models were used with age as a timescale to estimate hazard ratios and 95 percent confidence intervals. The multivariable model was adjusted for age (timescale); sex; center; screening year; smoking status; regular exercise; body mass index; education level;

dyslipidemia medication use; history of hypertension, chronic obstructive pulmonary disease, and asthma; and family history of cancer.

[b]HbA1c < 5.7, 5.7–5.9, 6.0–6.4, and ≥ 6.5% correspond to < 36, 36–38, 39–46, and ≥ 48 mmol/mol, respectively.

[c]FBG < 90, 90–99, 100–125, and ≥ 126 mg/dL correspond to < 5.0, 5.0–5.5, 5.6–6.9, and ≥ 7.0 mmol/L, respectively.

[d]Among subjects without previously diagnosed diabetes.

Supplementary Table S4. Hazard ratios (95% CIs) for lung cancer mortality by glycemic status and duration of diabetes (n = 658,973)

		Person-years	Number of events	Mortality rate (10^5 PY)	Multivariable-adjusted HR[a] (95% CI)
HbA1c category[b] (%)					
< 5.7		4119483.7	249	6.0	1.00 (reference)
5.7–5.9		1027740.2	148	14.4	1.37 (1.11–1.70)
6.0–6.4		303919.3	92	30.3	1.69 (1.32–2.18)
≥ 6.5 (screen-detected diabetes)		78782.2	37	47.0	2.21 (1.55–3.15)
Previously diagnosed diabetes					
Duration of diabetes (years)	< 5	43637.9	12	27.5	1.66 (0.92–3.00)
	5-9.9	16008.8	6	37.5	1.55 (0.68–3.52)
	≥ 10	13805.0	5	36.2	0.98 (0.40–2.39)
FBG category[c] (mg/dL)					
< 90		1916654.7	110	5.7	1.00 (reference)
90–99		2428299.3	190	7.8	1.05 (0.83–1.33)
100–125		1112085.5	200	18.0	1.38 (1.09–1.75)
≥ 126 (screen-detected diabetes)		72885.8	26	35.7	1.71 (1.11–2.64)
Previously diagnosed diabetes					
Duration of diabetes (years)	< 5	43637.9	12	27.5	1.54 (0.84–2.83)
	5-9.9	16008.8	6	37.5	1.41 (0.61–3.26)
	≥ 10	13805.0	5	36.2	0.89 (0.36–2.20)

BMI, body mass index; *CI,* confidence interval; *COPD,* chronic obstructive pulmonary disease; *FBG,* fasting blood glucose; *HbA1c,* hemoglobin A1c; *HR,* hazard ratio;

[a]Cox proportional hazard models were used with age as a timescale to estimate HRs and 95% CIs. The multivariable model was adjusted for age (timescale), sex, center, screening year, smoking status, regular exercise, BMI, education level, history of hypertension, dyslipidemia medication use, history of COPD, history of asthma, and family history of cancer.

[b]HbA1c < 5.7, 5.7–5.9, 6.0–6.4, and ≥ 6.5% corresponds to < 36, 36–38, 39–46, and ≥ 48 mmol/mol, respectively.

Supplementary Table S5. Hazard ratios (95% CIs) for lung cancer mortality by glycemic status and age at diabetes diagnosis (n = 658,973)

		Person-years	Number of events	Mortality rate (10^5 PY)	Multivariable-adjusted HR[a] (95% CI)
HbA1c category[b] (%)					
< 5.7		4119483.7	249	6.0	1.00 (reference)
5.7–5.9		1027740.2	148	14.4	1.37 (1.11–1.69)
6.0–6.4		303919.3	92	30.3	1.69 (1.31–2.17)
≥ 6.5 (screen-detected diabetes)		78782.2	37	47.0	2.21 (1.55–3.15)
Previously diagnosed diabetes					
age at diabetes diagnosis (years)	< 35	10042.2	0		-
	35-49.9	35621.5	8	22.5	2.10 (1.03–4.28)
	≥ 50	27788.0	15	54.0	1.25 (0.73–2.14)
FBG category[c] (mg/dL)					
< 90		1916654.7	110	5.7	1.00 (reference)
90–99		2428299.3	190	7.8	1.05 (0.83–1.33)
100–125		1112085.5	200	18.0	1.38 (1.09–1.75)
≥ 126 (screen-detected diabetes)		72885.8	26	35.7	1.71 (1.11–2.64)
Previously diagnosed diabetes					
age at diabetes diagnosis (years)	< 35	10042.2	0		-
	35-49.9	35621.5	8	22.5	2.00 (0.97–4.14)
	≥ 50	27788.0	15	54.0	1.13 (0.65–1.97)

BMI, body mass index; *CI,* confidence interval; *COPD,* chronic obstructive pulmonary disease; *FBG,* fasting blood glucose; *HbA1c,* hemoglobin A1c; *HR,* hazard ratio;

[a]Cox proportional hazard models were used with age as a timescale to estimate HRs and 95% CIs. The multivariable model was adjusted for age (timescale), sex, center, screening year, smoking status, regular exercise, BMI, education level, history of hypertension, dyslipidemia medication use, history of COPD, history of asthma, and family history of cancer.

[b]HbA1c < 5.7, 5.7–5.9, 6.0–6.4, and ≥ 6.5% corresponds to < 36, 36–38, 39–46, and ≥ 48 mmol/mol, respectively.

Supplementary Table S6. Hazard ratios (95% CIs) for lung cancer mortality by waist circumference (=562,111)

	Person-years	Number of events	Mortality rate (10^5 PY)	Multivariable-adjusted HR[a] (95% CI)
Abdominal obesity[b]				
No	3439102.1	327	8.5	1.00 (reference)
Yes	884385.7	153	14.8	1.72 (1.34–2.22)
Per 1 cm increase in waist circumference				1.05 (1.02–1.07)

BMI, body mass index; *CI,* confidence interval; *COPD,* chronic obstructive pulmonary disease; *HR,* hazard ratio;

[a]Cox proportional hazard models were used with age as a timescale to estimate HRs and 95% CIs. The multivariable model was adjusted for age (timescale), sex, center, screening year, smoking status, regular exercise, BMI, education level, history of hypertension, dyslipidemia medication use, history of COPD, history of asthma, and family history of cancer.

[b]For men, abdominal obesity by waist circumference ≥ 90 cm; for women, abdom**inal** obesity by waist circumference ≥ 85 cm.