		*					
Characteristics at baseline	Outcomes at 2 <sup>nd</sup> resurvey						
_	β (95	OR (95% CI)					
	BMI	Waist circumference	Habitual snoring				
BMI (per SD)	3.105 (3.064, 3.145)	3.264 (3.119, 3.410)	1.31 (1.23, 1.40)				
Waist circumference (per SD)	-0.011 (-0.053, 0.031)	5.158 (5.010, 5.306)	1.10 (1.03, 1.17)				
habitual snoring (yes vs no)	-0.023 (-0.075, 0.028)	0.018 (-0.166, 0.201)	6.48 (6.04, 6.96)				

Table e-1. The autoregressive cross-lagged model between BMI (per SD), waist circumference (per SD), and habitual snoring (n=25,037)

BMI: body mass index; SD: standard deviation; OR: odds ratio; CI: confidence interval

\*The model was adjusted for the same variables as in the model of Figure 1.

Subgroup	Cases*/person years	HR (95% CI)		P values for interaction
Men				
Age, year				
<60	4,228/1,452,151	1.12 (1.05,1.19)	-	0.685
≥60	2,083/467,148	1.11 (1.01,1.22)		
Area				
Rural	3,522/1,113,299	1.07 (1.00,1.15)		0.376
Urban	2,789/806,000	1.18 (1.09,1.27)		
Current smoker				
No	2,080/614,924	1.07 (0.98,1.18)		0.100
Yes	4,231/1,304,375	1.15 (1.08,1.23)		
Current weekly drinker				
No	4,181/1,268,524	1.08 (1.01,1.15)	3 <u>-9-</u> 8	0.062
Yes	2,130/650,775	1.20 (1.10,1.32)		
Physical activity				
Low	2,223/593,604	1.07 (0.98,1.17)	<b></b>	0.116
Medium	1,921/578,751	1.18 (1.07,1.30)		
High	2,167/746,943	1.12 (1.02,1.22)		
Prevalent hypertension				
No	2,887/1,246,461	1.12 (1.04,1.22)		0.287
Yes	3,424/672,838	1.12 (1.04,1.20)		
Regular fruit consumer				
No	4,714/1,477,745	1.13 (1.06,1.20)		0.391
Yes	1,597/441,554	1.10 (0.99,1.22)		
Regular meat consumer	5 • 5000 · 0.00 · 0.00 · 0.00 · 0.00 · 0.00 · 0.00			
No	2.575/927.016	1,15 (1.06,1.25)		0.697
Yes	3.736/992.283	1.10 (1.03.1.20)		
Women				
Age, year				
<60	6,991/2,272,646	1.15 (1.09,1.22)		0.393
≥60	3.177/549.637	1.11 (1.03.1.20)		
Area				
Rural	6.003/1.601.438	1.12 (1.05.1.19)		0.472
Urban	4,165/1,220,846	1.16 (1.09.1.25)		
Current smoker				
No	9.693/2.748.579	1.14 (1.09.1.19)		0.558
Yes	475/73.705	1.11 (0.91,1.36)	<b>.</b>	
Current weekly drinker				
No	9.958/2.762.173	1.13 (1.08.1.19)	()	0,196
Yes	210/60.111	1.38 (1.02.1.87)		
Physical activity				
Low	3.877/943.295	1.13 (1.05.1.21)		0.529
Medium	3 564/1 016 920	1.16 (1.08, 1.25)		
Hiah	2,727/862.069	1.13 (1.03.1.23)		
Prevalent hypertension				
No	4.691/1.946.561	1.12 (1.04.1.21)		0.362
Yes	5.477/875.722	1.15 (1.08,1.22)	-	
Regular fruit consumer				
No	7.144/1.917.774	1.13 (1.07.1.19)		0.589
Yes	3,024/904,510	1.16 (1.07.1.26)		
Regular meat consumer				
No	5.628/1579.987	1.13 (1.07.1.21)	-	0.879
Yes	4.540/1 242 296	1.14 (1.07 1 22)		0.010
	1,01011,212,200			
		(	0.80 1.0 1.2 1.5	
		HR (95% CI	) for habitual snoring vs nor	n-snoring

## Figure e-1. Subgroup analyses of the association between habitual snoring and type 2 diabetes according to selected baseline characteristics.

HR: hazard ratio; CI: confidence interval.

\* Total incident diabetes cases for participants with habitual snoring and non-snoring.

The Cox proportional hazard models were stratified by age groups and ten study regions, and adjusted for the same factors as in model 5 of Table 2 except the subgrouping variables.

Table e-2. Sensitivity analyses of the association between habitual shoring and type 2 diabetes							
	Μ	en	V	P values for			
-	Non-snoring	Habitual snoring	Non-snoring	Habitual snoring	interaction		
Sensitivity analysis by additionally adjusted for boo	ly fat percentage						
Cases	3,700	2,611	7,271	2,897			
Person years	1,376,688	542,611	2,357,347	464,937	0.712		
Incidence rate (per 10,000 person years)	26.9	48.1	30.8	62.3	0.712		
HR (95% CI)	1.00	1.12 (1.06,1.18)	1.00	1.14 (1.09,1.19)			
Sensitivity analysis by excluding cases occurring du	ring the first 2 years o	of follow-up					
Cases	3,364	2,400	6,585	2,622			
Person years	1,376,300	542,355	2,356,541	464,606	0.220		
Incidence rate (per 10,000 person years)	24.4	44.3	27.9	56.4	0.220		
HR (95% CI)	1.00	1.13 (1.07,1.19)	1.00	1.14 (1.09,1.20)			
Sensitivity analysis by excluding participants who	vere never married, di	ivorced or widowed					
Cases	3,443	2,470	6,367	2,511			
Person years	1,274,767	516,230	2,125,447	408,337	0 609		
Incidence rate (per 10,000 person years)	27.0	47.8	30.0	61.5	0.008		
HR (95% CI)	1.00	1.11 (1.05,1.17)	1.00	1.14 (1.08,1.20)			

Table e-2. Sensitivi	y analyses of the association between habitual snoring and type 2 diabetes	
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HR: hazard ratio; CI: confidence interval.

The Cox proportional hazard models were stratified by age groups and study regions, as appropriate, and were adjusted for the same factors as in model 5 of

Table 2.

	Non- snoring	Habitual snoring	Overall
Cases†	1,076	557	1,633
Person years	147,528	41,046	188,574
Incidence rate (per 10,000 person years)	72.9	135.7	86.6
HR (95% CI)	1.00	1.17 (1.05,1.31)	

Table	e-3.	The	association	between	habitual	snoring	and	type	2	diabetes	in
23,858	adu	lts* p	articipating	in the sec	ond resur	vev					

HR: hazard ratio; CI: confidence interval.

The Cox proportional hazard model was stratified by gender, age groups, and study regions, and was adjusted for the same factors as in model 5 of Table 2. To maximize the statistical power, we did not assess the snoring-diabetes association in men and women separately. \* Participants without self-reported or screen-detected diabetes at baseline.

† Including cases self-reported or screen-detected at the 2<sup>nd</sup> resurvey, and those identified during the follow-up. Screened-detected diabetes was defined as a random glucose level  $\geq$  11.1 mmol/L or a fasting glucose level  $\geq$  7.0 mmol/L, but without self-reported diabetes.

Table e-4. Sensitivity analysis of the association between snoring frequency and type 2 diabetes							
		Men		Women			
	Never snoring	Sometimes	Habitual	Never	Sometimes	Habitual	
		snoring	snoring	snoring	snoring	snoring	
Cases	2,148	1,552	2,611	4,729	2,542	2,897	
Person years	860,669	516,019	542,611	1,727,068	630,279	464,937	
Incidence rate (per 10,000 person years)	25.0	30.1	48.1	27.4	40.3	62.3	
HR (95% CI)	1.00	0.94 (0.88,1.00)	1.09 (1.03,1.16)	1.00	1.07 (1.02,1.12)	1.17 (1.11,1.23)	

HR: hazard ratio; CI: confidence interval.

The Cox proportional hazard models were stratified by age groups and ten study regions, and adjusted for the same factors as in model 5 of Table 2.

Table e-5. Adjusted hazard ratios of type 2 diabetes for participants with different combinations of snoring status and adiposity measures

	Μ	len	Wo	Women			
	Non-snoring	Habitual snoring	Non-snoring	Habitual snoring			
BMI subgroups							
Underweight/normal	1.00	1.12 (1.02, 1.24)	1.00	1.19 (1.09, 1.31)			
Overweight	1.47 (1.35, 1.60)	1.64 (1.49, 1.79)	1.38 (1.30, 1.47)	1.58 (1.46, 1.71)			
General obesity	1.80 (1.57, 2.05)	2.06 (1.81, 2.34)	1.65 (1.51, 1.80)	1.83 (1.66,2.02)			
Waist circumference subgroups							
Normal	1.00	1.12 (1.03,1.22)	1.00	1.20 (1.09,1.31)			
Pre-central obesity	1.41 (1.28,1.55)	1.69 (1.52,1.88)	1.45 (1.36,1.56)	1.63 (1.48,1.80)			
Central obesity	1.80 (1.63,1.98)	1.96 (1.77,2.18)	1.76 (1.64,1.89)	1.97 (1.82,2.14)			

BMI: body mass index

The Cox proportional hazard models were stratified by age groups and ten study regions, and adjusted for the same factors as in model 5 of Table 2, except baseline BMI and waist circumference. Baseline BMI was adjusted for in joint analyses of waist circumference and snoring while baseline waist circumference was adjusted for in joint analyses of BMI and snoring.

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