

Supplemental Content

Title

Long-term exposure to fine particulate matter and natural-cause and cause-specific mortality in Japan

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eTable 1. Age-adjusted standardized mortality rates per 1,000 person-years separated by sex and quartile fine particulate matter exposure.

	Total	Q1	Q2	Q3	Q4
Natural-cause mortality					
Men	32.0	32.5	31.7	31.8	32.2
Women	16.7	16.6	16.4	16.9	16.7
Cardiorespiratory					
Men	15.9	16.8	15.4	15.2	16.1
Women	7.6	7.9	7.6	7.5	7.4
Circulatory disease					
Men	7.9	8.7	7.8	7.2	8.0
Women	5.0	5.4	4.9	4.8	4.9
Hypertension					
Men	0.1	0.1	0.1	0.1	0.2
Women	0.1	0.2	0.1	0.1	0.1
Ischemic heart disease					
Men	2.1	2.3	2.5	1.4	1.9
Women	1.0	1.1	0.9	1.0	0.9
Other cardiac disease					
Men	2.6	2.8	2.5	2.9	2.4
Women	2.0	2.1	2.0	1.9	2.1
Cerebrovascular disease					
Men	3.1	3.5	2.7	2.8	3.5
Women	1.9	2.0	1.9	1.8	1.8
Respiratory disease					
Men	7.9	8.1	7.6	8.0	8.1
Women	2.6	2.5	2.7	2.7	2.5
Pneumonia and influenza					
Men	4.4	4.5	4.5	4.3	4.5
Women	1.6	1.4	1.8	1.7	1.6
COPD and allied conditions					
Men	0.8	0.7	0.7	1.0	0.9
Women	0.2	0.2	0.1	0.2	0.2
Lung cancer					
Men	2.5	2.3	2.9	2.4	2.6
Women	0.6	0.5	0.5	0.7	0.6

Fine particulate matter distribution: 12.2–12.9 $\mu\text{g}/\text{m}^3$ for Q1, 13.0–14.05 $\mu\text{g}/\text{m}^3$ for Q2, 14.08–15.07 $\mu\text{g}/\text{m}^3$ for Q3, and 15.08–15.28 $\mu\text{g}/\text{m}^3$ for Q4.

COPD, chronic obstructive pulmonary disease.

eTable 2. Adjusted hazard ratios (HRs)^a for a 5- $\mu\text{g}/\text{m}^3$ increase in fine particulate matter and 95% confidence intervals (CIs) for natural-cause and cause-specific mortality in sensitivity analyses (n=75,531)

	Alternative exposure indicators	
	Concentration in 2006	2-year average of the concentrations from 2006 and 2007
Natural-cause mortality	1.31 (1.2, 1.43)	1.28 (1.18, 1.39)
Cause-specific mortality		
Cardiorespiratory (I10-69/J00-J99)	1.17 (1.03, 1.33)	1.14 (1.01, 1.29)
Lung cancer (C33-C34)	1.64 (1.15, 2.36)	1.59 (1.13, 2.25)

^aAdjusted for age, sex, examination year, hypertension, diabetes, effort to reduce salt intake, effort to consume more vegetable, alcohol consumption, , current smoking status, smoking quantity of smokers (number of smoking per day), squared quantity of smokers, smoking years of smokers, squared smoking years of smokers, regular exercise, height, body mass index, total cholesterol, and proportion of white-color workers in the census area.