

Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

Supplement to: Jee SH, Sull JW, Park J, et al. Body-mass index and mortality in Korean men and women. *N Engl J Med* 2006;355:779-87.

Supplementary Table I. Number of events and age-adjusted hazard ratios (95% confidence interval) for selected causes of death in men by BMI categories, Korean Cancer Prevention Study, 1993-2004.

	Body Mass Index (kg/m ²)									
	<18.5	18.5–19.9	20.0-21.4	21.5-22.9	23.0-24.9	25.0-26.4	26.5-27.9	28.0-29.9	30.0-31.9	≥32.0
Never smokers										
All Cause	414 1.3 (1.2-1.4)	812 1.1 (1.0-1.2)	1423 1.0 (1.0-1.1)	1912 1.0 (0.9-1.1)	2568 1.0	1308 1.0 (0.9-1.1)	697 1.1 (1.0-1.2)	370 1.1 (1.0-1.3)	111 1.5 (1.3-1.9)	42 2.5 (1.8-3.5)
Cancer	101 0.9 (0.7-1.2)	263 1.1 (0.9-1.2)	475 1.1 (0.9-1.1)	627 1.0 (0.9-1.1)	899 1.0	495 1.1 (1.0-1.2)	255 1.2 (1.0-1.3)	133 1.2 (1.0-1.5)	41 1.7 (1.2-2.3)	14 2.5 (1.4-4.3)
Cardiovascular	48 0.7 (0.5-0.9)	120 0.8 (0.6-1.0)	249 0.9 (0.7-1.0)	312 0.8 (0.7-0.9)	526 1.0	254 0.9 (0.8-1.1)	175 1.3 (1.1-1.6)	102 1.5 (1.2-1.9)	33 2.1 (1.5-3.0)	15 4.1 (2.4-7.2)
Respiratory	70 6.0 (4.2-8.7)	73 3.2 (2.3-4.6)	71 1.8 (1.3-2.6)	69 1.4 (1.0-2.0)	64 1.0	25 0.7 (0.4-1.2)	14 0.7 (0.4-1.4)	2 0.2 (0.1-0.9)	1 —*	0 —*
Ever smokers										
All Cause	3247 1.4 (1.3-1.4)	5679 1.2 (1.1-1.2)	9318 1.2 (1.1-1.2)	10106 1.1 (1.1-1.1)	11418 1.0	4996 1.0 (0.9-1.0)	2399 1.0 (0.9-1.0)	1094 1.0 (1.0-1.1)	288 1.1 (1.0-1.3)	110 2.1 (1.7-2.5)
Cancer	1064 1.1 (1.0-1.2)	2034 1.1 (1.0-1.1)	3600 1.1 (1.1-1.2)	3993 1.0 (1.0-1.1)	4689 1.0	2016 0.9 (0.9-1.0)	984 1.0 (0.9-1.0)	417 1.0 (0.9-1.1)	112 1.1 (0.9-1.3)	37 1.6 (1.2-2.3)
Cardiovascular	447 0.9 (0.7-0.9)	882 0.9 (0.8-0.9)	1472 0.9 (0.9-1.0)	1742 1.0 (0.9-1.0)	2201 1.0	1040 1.1 (1.0-1.2)	520 1.1 (1.0-1.2)	256 1.3 (1.1-1.5)	68 1.4 (1.1-1.8)	24 2.4 (1.6-3.6)
Respiratory	399 4.5 (3.8-5.3)	390 2.4 (2.1-2.9)	449 2.0 (1.7-2.3)	347 1.4 (1.2-1.6)	311 1.0	115 0.8 (0.7-1.0)	33 0.5 (0.3-0.7)	5 0.2 (0.1-0.4)	4 —*	0 —*

Results for ever smokers were further adjusted for smoking status and amount smoked (past smoker or current smoker of 1–9, 10–19, or ≥20 cigarettes per day).

* The number of respiratory deaths in participants with BMI ≥ 30 was too small to reliably estimate relative risks.

Supplementary Table II. Number of events and age-adjusted hazard ratios (95% confidence interval) for selected causes of death in never smoking women, by BMI category, Korean Cancer Prevention Study, 1993-2004.

	Body Mass Index (kg/ m ²)									
	<18.5	18.5-19.9	20.0-21.4	21.5-22.9	23.0-24.9	25.0-26.4	26.5-27.9	28.0-29.9	30.0-31.9	≥32.0
All Cause	1015	1649	2558	3168	4340	2390	1606	1158	426	248
	1.2	1.1	1.0	1.0	1.0	1.0	1.0	1.1	1.2	1.2
	(1.1-1.3)	(1.0-1.1)	(1.0-1.0)	(1.0-1.1)		(0.9-1.0)	(1.0-1.1)	(1.1-1.2)	(1.1-1.3)	(1.1-1.4)
Cancer	254	496	688	978	1415	781	536	387	137	69
	1.0	1.0	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.2
	(0.9-1.1)	(0.9-1.1)	(0.7-0.9)	(0.9-1.0)		(0.9-1.1)	(1.0-1.2)	(1.1-1.3)	(1.0-1.4)	(1.0-1.6)
Cardiovascular	189	318	595	754	1076	624	411	308	126	67
	0.8	0.8	0.9	1.0	1.0	1.0	1.1	1.2	1.4	1.4
	(0.7-1.0)	(0.7-0.9)	(0.8-1.0)	(0.9-1.1)		(0.9-1.1)	(0.9-1.2)	(1.0-1.4)	(1.1-1.7)	(1.1-1.8)
Respiratory	62	70	92	98	122	66	32	22	7	0
	1.8	1.4	1.2	1.1	1.0	1.0	0.8	0.7	—*	—*
	(1.3-2.6)	(1.0-1.9)	(0.9-1.6)	(0.8-1.4)		(0.7-1.3)	(0.5-1.1)	(0.4-1.1)		

* The number of respiratory deaths in participants with BMI ≥ 30 was too small to reliably estimate relative risks.

Supplementary Table III. Hazard ratios* and 95% confidence intervals for all cause death by BMI category, Korean Cancer Prevention Study, 1993-2004.

BMI, kg/m ²	Men			Women		
	Age-adjusted	Covariate adjusted**	Covariate and intermediate variable adjusted***	Age-adjusted	Covariate adjusted**	Covariate and intermediate variable adjusted***
<18.5	1.43 (1.37-1.49)	1.35 (1.30-1.41)	1.51 (1.45-1.57)	1.23 (1.16-1.31)	1.16 (1.09-1.23)	1.25 (1.18-1.33)
18.5 to 19.9	1.23 (1.20-1.27)	1.19 (1.15-1.23)	1.28 (1.24-1.32)	1.14 (1.09-1.20)	1.11 (1.05-1.17)	1.17 (1.11-1.23)
20.0 to 21.4	1.20 (1.17-1.23)	1.16 (1.13-1.20)	1.21 (1.18-1.25)	1.02 (0.97-1.07)	0.99 (0.95-1.04)	1.02 (0.98-1.07)
21.5 to 22.9	1.10 (1.07-1.13)	1.09 (1.06-1.12)	1.12 (1.09-1.15)	1.01 (0.97-1.05)	1.00 (0.95-1.04)	1.02 (0.97-1.06)
23.0 to 24.9	1.00	1.0	1.00	1.00	1.00	1.00
25.0 to 26.4	0.96 (0.93-0.99)	0.97 (0.94-1.00)	0.95 (0.92-0.98)	0.98 (0.94-1.03)	0.98 (0.94-1.03)	0.96 (0.92-1.01)
26.5 to 27.9	0.98 (0.94-1.02)	0.99 (0.95-1.03)	0.95 (0.91-0.99)	1.03 (0.97-1.09)	1.02 (0.97-1.08)	0.97 (0.92-1.03)
28.0 to 29.9	1.05 (0.99-1.11)	1.06 (1.00-1.12)	0.97 (0.92-1.03)	1.08 (1.02-1.15)	1.09 (1.02-1.16)	1.03 (0.96-1.09)
30.0 to 31.9	1.22 (1.10-1.35)	1.20 (1.08-1.34)	1.09 (0.98-1.21)	1.16 (1.05-1.27)	1.16 (1.06-1.28)	1.07 (0.97-1.18)
≥ 32.0	2.13 (1.80-2.51)	2.11 (1.78-2.50)	1.82 (1.54-2.16)	1.21 (1.08-1.37)	1.22 (1.08-1.38)	1.11 (0.99-1.26)

* Table shows age-adjusted and fully-adjusted hazard for effect of BMI with 23.0 to 24.9 as reference category

** Adjusting for age (continuous), cigarette smoking (never smoker, past smoker or current smoker of 1-9, 10-19, or ≥ 20 cigarettes per day for men and never smoker, past smoker or current smoker for women), alcohol drinking (none, 1-24, 25-49, 50-99, and 100 g/day or more for men and none or any for women), and exercise

*** Adjusting for age (continuous), cigarette smoking (never smoker, past smoker or current smoker of 1-9, 10-19, or ≥ 20 cigarettes per day for men and never smoker, past smoker or current smoker for women), alcohol drinking (none, 1-24, 25-49, 50-99, and 100 g/day or more for men and none or any for women), exercise, fasting blood glucose (continuous), systolic blood pressure (continuous), and serum cholesterol levels (continuous)

Supplementary Table IV. Hazard ratios* and 95% confidence intervals for cancer mortality by BMI category, Korean Cancer Prevention Study, 1993-2004.

BMI, kg/m ²	Men			Women		
	Age-adjusted	Covariate adjusted**	Covariate and intermediate variable adjusted***	Age-adjusted	Covariate adjusted**	Covariate and intermediate variable adjusted***
<18.5	1.16 (1.09-1.25)	1.12 (1.04-1.20)	1.12 (1.04-1.20)	1.10 (0.97-1.23)	1.04 (0.92-1.17)	1.01 (0.89-1.14)
18.5 to 19.9	1.12 (1.07-1.18)	1.08 (1.02-1.14)	1.08 (1.02-1.14)	1.02 (0.92-1.12)	1.00 (0.90-1.10)	0.98 (0.88-1.08)
20.0 to 21.4	1.14 (1.09-1.19)	1.10 (1.06-1.15)	1.10 (1.05-1.15)	0.87 (0.80-0.95)	0.86 (0.79-0.93)	0.84 (0.77-0.92)
21.5 to 22.9	1.05 (1.01-1.10)	1.04 (1.00-1.09)	1.04 (1.00-1.09)	0.95 (0.88-1.03)	0.94 (0.87-1.02)	0.93 (0.86-1.01)
23.0 to 24.9	1.00	1.0	1.00	1.00	1.0	1.00
25.0 to 26.4	0.95 (0.91-1.00)	0.97 (0.92-1.01)	0.97 (0.92-1.01)	0.98 (0.90-1.07)	0.98 (0.90-1.07)	0.99 (0.91-1.08)
26.5 to 27.9	0.99 (0.93-1.05)	1.00 (0.93-1.06)	0.99 (0.93-1.06)	1.08 (0.98-1.19)	1.07 (0.97-1.18)	1.07 (0.97-1.19)
28.0 to 29.9	1.01 (0.92-1.10)	1.02 (0.93-1.12)	1.00 (0.91-1.10)	1.13 (1.01-1.26)	1.13 (1.01-1.26)	1.14 (1.02-1.27)
30.0 to 31.9	1.15 (0.97-1.36)	1.11 (0.93-1.32)	1.09 (0.92-1.30)	1.17 (0.98-1.39)	1.17 (0.98-1.39)	1.19 (1.00-1.42)
≥ 32.0	1.76 (1.32-2.34)	1.76 (1.31-2.35)	1.71 (1.28-2.29)	1.19 (0.95-1.50)	1.22 (0.97-1.54)	1.24 (0.99-1.56)

* Table shows age-adjusted and fully-adjusted hazard for effect of BMI with 23.0 to 24.9 as reference category

** Adjusting for age (continuous), cigarette smoking (never smoker, past smoker or current smoker of 1-9, 10-19, or ≥ 20 cigarettes per day for men and never smoker, past smoker or current smoker for women), alcohol drinking (none, 1-24, 25-49, 50-99, and 100 g/day or more for men and none or any for women), and exercise

*** Adjusting for age (continuous), cigarette smoking (never smoker, past smoker or current smoker of 1-9, 10-19, or ≥ 20 cigarettes per day for men and never smoker, past smoker or current smoker for women), alcohol drinking (none, 1-24, 25-49, 50-99, and 100 g/day or more for men and none or any for women), exercise, fasting blood glucose (continuous), systolic blood pressure (continuous), and serum cholesterol levels (continuous)

Supplementary Table V. Hazard ratios* and 95% confidence intervals for respiratory mortality by BMI category, Korean Cancer Prevention Study, 1993-2004.

BMI, kg/m2	Men			Women		
	Age-adjusted	Covariate adjusted**	Covariate and intermediate variable adjusted***	Age-adjusted	Covariate adjusted**	Covariate and intermediate variable adjusted***
<18.5	4.82 (4.17-5.58)	4.47 (3.85-5.20)	4.64 (3.98-5.40)	2.19 (1.71-2.79)	1.95 (1.52-2.50)	2.06 (1.60-2.64)
18.5 to 19.9	2.60 (2.25-3.01)	2.45 (2.12-2.84)	2.51 (2.17-2.92)	1.62 (1.28-2.05)	1.48 (1.17-1.88)	1.54 (1.21-1.97)
20.0 to 21.4	1.97 (1.72-2.27)	1.87 (1.63-2.16)	1.89 (1.64-2.18)	1.11 (0.89-1.40)	0.98 (0.78-1.25)	1.01 (0.80-1.28)
21.5 to 22.9	1.38 (1.19-1.59)	1.36 (1.18-1.57)	1.37 (1.18-1.59)	1.08 (0.86-1.35)	1.05 (0.84-1.31)	1.06 (0.85-1.33)
23.0 to 24.9	1.00	1.0	1.00	1.00	1.0	1.00
25.0 to 26.4	0.80 (0.66-0.98)	0.80 (0.65-0.98)	0.79 (0.65-0.97)	0.89 (0.69-1.15)	0.85 (0.66-1.11)	0.84 (0.65-1.10)
26.5 to 27.9	0.51 (0.37-0.71)	0.52 (0.37-0.72)	0.51 (0.37-0.71)	0.78 (0.56-1.08)	0.78 (0.56-1.08)	0.74 (0.53-1.04)
28.0 to 29.9	0.17 (0.08-0.38)	0.18 (0.08-0.41)	0.18 (0.08-0.39)	0.83 (0.57-1.20)	0.83 (0.57-1.21)	0.81 (0.56-1.17)

* Table shows age-adjusted and fully-adjusted hazard for effect of BMI with 23.0 to 24.9 as reference category. The number of respiratory deaths in participants with BMI \geq 30 was too small to reliably estimate relative risks.

** Adjusting for age (continuous), cigarette smoking (never smoker, past smoker or current smoker of 1-9, 10-19, or \geq 20 cigarettes per day for men and never smoker, past smoker or current smoker for women), alcohol drinking (none, 1-24, 25-49, 50-99, and 100 g/day or more for men and none or any for women), and exercise

*** Adjusting for age (continuous), cigarette smoking (never smoker, past smoker or current smoker of 1-9, 10-19, or \geq 20 cigarettes per day for men and never smoker, past smoker or current smoker for women), alcohol drinking (none, 1-24, 25-49, 50-99, and 100 g/day or more for men and none or any for women), exercise, fasting blood glucose (continuous), systolic blood pressure (continuous), and serum cholesterol levels (continuous)