

Table S4: Parameter estimates (95% confidence intervals) for smoking effects and radiation effects and AIC for the fitted models.

	All lung cancer	NOS	Major 3 types
<b>Smoking parameters</b>			
ERR / 50 pack-years <sup>a</sup> (male)	3.59 (2.6,5.1)	2.43 (1,5)	3.89 (2.6,5.9)
ERR / 50 pack-years <sup>a</sup> (female)	5.75 (4,7.9)	5.49 (2.6,10)	6.81 (4.5,10)
birth year (%change per decade decrease)	33.38 (15.1,54.9)	16.88 (-14.8,57.6)	43.46 (19.5,72.6)
log(duration/50)	-0.3 (-1.2,0.6)	1.81 (0.1,4)	-0.81 (-2,0.4)
log(duration/50) <sup>2</sup>	-2.48 (-5.1,-0.6)	-0.39 (-5.2,1)	-3.61 (-8.3,-0.8)
log(years since quitting+1)	-0.47 (-0.8,-0.3)	-0.34 (-5.5,0)	-0.54 (-0.9,-0.3)
<b>Radiation parameters</b>			
ERR/Gy <sup>b</sup> (gender-averaged)	0.59 (0.3,1.0)	0.3 (0,1.1)	0.82 (0.4,1.4)
ERR/Gy <sup>b</sup> (male)	0.29 (0.1,0.6)	0.12 (0,0.8)	0.41 (0.1,1)
ERR/Gy <sup>b</sup> (female)	0.90 (0.5,1.5)	0.48 (0,1.7)	1.23 (0.6,2)
F/M ratio	3.12 (1.5,7.4)	4.06 (0.9,NA)	2.96 (1.3,8.3)
Age at exposure (%change per decade increase)	29.4 (-3.3,77)	-3.59 (-50,NA)	36.2 (-2.8,96)
Attained age (power)	-2.78 (-4.9,-0.7)	-2.2 (-7.6,6.0)	-2.98 (-5.5,-0.5)
p for generalized interaction	0.001	0.003	0.032
<b>AIC</b>			
Radiation only	9718	3599	7342
Smoking only	9459	3537	7164
AM	9406	3537	7122
MM	9403	3537	7119
GAM	9397	<b>3528</b>	7124
GMM	<b>9392</b>	3529	<b>7116</b>

<sup>a</sup>Risk at age 70 for an unexposed person who was born in 1915 and smoked a pack of cigarettes per day for 50 years since age 20.

<sup>b</sup>Risk for a never-smoker at age 70 after an exposure at 1Gy at age 30.

NA: estimate was not available.