

## ETS AND LUNG CANCER META-ANALYSES

Exposure	Estimates considered	Number of estimates	Relative risk (95% confidence limits)*		Random-effects p, heterogeneity#
			Fixed-effects meta analysis	Random-effects meta-analysis	
Husband smoked†	All	92	1.19 (1.14-1.24)	1.22 (1.14-1.31)	+++
	N America	28	1.09 (1.00-1.19)	1.09 (0.96-1.25)	NS
	Europe	18	1.16 (1.02-1.31)	1.17 (0.99-1.39)	(+)
	Asia	43	1.25 (1.17-1.33)	1.33 (1.20-1.46)	+++
	- Japan	10	1.25 (1.09-1.45)	1.25 (1.09-1.45)	++
	- Hong Kong	6	1.42 (1.17-1.74)	1.41 (1.10-1.81)	++
	- China	20	1.17 (1.06-1.28)	1.32 (1.10-1.59)	++
	- Other	7	1.33 (1.18-1.51)	1.39 (1.18-1.64)	+++
	- <i>Heterogeneity: Asian countries</i>				NS
	Other	3	1.20 (1.07-1.35)	1.20 (1.07-1.35)	++
	<i>Heterogeneity between continents</i>				(*)
	Published in 1981-1989	26	1.36 (1.22-1.52)	1.36 (1.22-1.52)	+++
	Published in 1990-1999	27	1.09 (1.01-1.17)	1.15 (1.02-1.30)	+
	Published in 2000-2009	26	1.24 (1.12-1.37)	1.24 (1.10-1.39)	+++
	Published in 2010 onwards	13	1.20 (1.11-1.29)	1.18 (0.98-1.41)	(+)
	<i>Heterogeneity by publication date</i>				**
	Published in 1981-1986	12	1.30 (1.11-1.52)	1.30 (1.09-1.55)	++
	Published in 1987-1989	14	1.43 (1.21-1.68)	1.43 (1.21-1.68)	+++
	Published in 1990-1994	11	0.99 (0.89-1.09)	1.04 (0.84-1.28)	NS
	Published in 1995-1998	11	1.23 (1.08-1.40)	1.25 (1.07-1.47)	++
	Published in 1999-2002	12	1.24 (1.08-1.43)	1.24 (1.08-1.43)	++
	Published in 2003-2006	11	1.13 (0.97-1.32)	1.14 (0.94-1.38)	NS
	Published in 2007-2010	10	1.18 (0.98-1.43)	1.26 (0.84-1.89)	NS
	Published in 2011 onwards	11	1.23 (1.14-1.32)	1.24 (1.08-1.42)	++
	<i>Heterogeneity by publication date</i>				**
	1-49 cases	21	1.32 (1.05-1.66)	1.32 (1.05-1.66)	+
	50-99	27	1.37 (1.21-1.56)	1.37 (1.17-1.60)	+++
	100-199	22	1.12 (1.02-1.23)	1.12 (0.97-1.28)	NS
	200-399	13	1.36 (1.22-1.52)	1.36 (1.19-1.56)	+++
	400+	9	1.12 (1.05-1.19)	1.10 (0.97-1.25)	NS
	<i>Heterogeneity by study size</i>				**
	Case-control	76	1.19 (1.14-1.25)	1.23 (1.14-1.33)	+++
	Prospective	16	1.19 (1.04-1.35)	1.19 (1.04-1.35)	++
	<i>Heterogeneity by study type</i>				NS
	Not age adjusted	18	1.36 (1.20-1.54)	1.44 (1.19-1.73)	+++
	Age adjusted	74	1.17 (1.12-1.22)	1.19 (1.11-1.28)	+++
	<i>Heterogeneity</i>				*
	Dose-response results:				
	not reported	37	1.12 (1.04-1.21)	1.18 (1.06-1.33)	++
	reported	53	1.23 (1.17-1.30)	1.26 (1.15-1.37)	+++
	<i>Heterogeneity</i>				(*)
	Spouse the index	54	1.18 (1.12-1.25)	1.22 (1.13-1.32)	+++
	Spouse not the index	38	1.21 (1.12-1.29)	1.23 (1.08-1.39)	++
	<i>Heterogeneity</i>				NS

**ETS AND LUNG CANCER META-ANALYSES (Continued)**

Exposure	Estimates considered	Number of estimates	Relative risk (95% confidence limits)*		Random-effects p, heterogeneity#	
			Fixed-effects meta analysis	Random-effects meta-analysis		
Husband smoked <sup>†</sup> (continued)	Squamous cell carcinoma	21	1.48 (1.28-1.71)	1.55 (1.21-1.99)	+++	
	N America	5	1.45 (1.18-1.78)	1.58 (0.85-2.96)	NS	
	Europe	7	1.68 (1.25-2.26)	1.69 (1.22-2.34)	++	
	Asia	9	1.35 (1.01-1.82)	1.35 (1.01-1.82)	+	
	<i>Heterogeneity between continents</i>					NS
	Adenocarcinoma	26	1.24 (1.14-1.36)	1.34 (1.16-1.56)	+++	
	N America	7	1.10 (0.97-1.24)	1.10 (0.97-1.24)	NS	
	Europe	7	1.13 (0.91-1.40)	1.09 (0.79-1.49)	NS	
	Asia	12	1.60 (1.37-1.88)	1.75 (1.36-2.25)	+++	
	<i>Heterogeneity between continents</i>					***
	Wife smoked <sup>†</sup>	All	43	1.16 (1.04-1.29)	1.15 (1.02-1.30)	+
		N America	16	1.11 (0.90-1.37)	1.14 (0.85-1.55)	NS
		Europe	11	1.12 (0.88-1.43)	1.12 (0.88-1.43)	NS
		Asia	13	1.17 (0.93-1.47)	1.17 (0.93-1.47)	NS
Other		3	1.21 (1.01-1.45)	1.21 (1.01-1.45)	+	
<i>Heterogeneity between continents</i>					NS	
Husband or wife smoked <sup>†,‡</sup>	All	118	1.19 (1.14-1.23)	1.22 (1.14-1.30)	+++	
	N America	37	1.09 (1.01-1.19)	1.12 (0.97-1.28)	NS	
	Europe	22	1.15 (1.03-1.28)	1.16 (1.00-1.35)	(+)	
	Asia	54	1.24 (1.17-1.32)	1.31 (1.20-1.44)	+++	
	- Japan	13	1.26 (1.11-1.45)	1.26 (1.11-1.45)	+++	
	- Hong Kong	8	1.32 (1.12-1.57)	1.31 (1.06-1.63)	+	
	- China	23	1.16 (1.06-1.27)	1.29 (1.08-1.54)	++	
	- Other	10	1.34 (1.19-1.51)	1.37 (1.19-1.57)	+++	
	- <i>Heterogeneity: Asian countries</i>				NS	
	Other	5	1.20 (1.09-1.33)	1.20 (1.09-1.33)	+++	
	<i>Heterogeneity between continents</i>					(*)
	Published in 1981-1989	34	1.38 (1.24-1.54)	1.38 (1.24-1.54)	+++	
	Published in 1990-1999	33	1.09 (1.01-1.17)	1.15 (1.02-1.28)	+	
	Published in 2000-2009	34	1.22 (1.12-1.33)	1.21 (1.08-1.36)	+++	
	Published in 2010 onwards	17	1.18 (1.10-1.27)	1.17 (0.98-1.40)	(+)	
	<i>Heterogeneity by publication date</i>					**
	Published in 1981-1986	18	1.32 (1.14-1.53)	1.32 (1.13-1.54)	+++	
	Published in 1987-1989	16	1.45 (1.24-1.70)	1.45 (1.24-1.70)	+++	
	Published in 1990-1994	12	0.99 (0.89-1.10)	1.05 (0.85-1.29)	NS	
	Published in 1995-1998	16	1.21 (1.08-1.37)	1.22 (1.07-1.39)	++	
Published in 1999-2002	13	1.21 (1.07-1.38)	1.22 (1.06-1.39)	++		
Published in 2003-2006	15	1.13 (0.99-1.30)	1.12 (0.94-1.34)	NS		
Published in 2007-2010	13	1.15 (0.99-1.34)	1.25 (0.89-1.75)	NS		
Published in 2011 onwards	15	1.22 (1.13-1.30)	1.23 (1.08-1.39)	++		
<i>Heterogeneity by publication date</i>					**	
1-49 cases	22	1.63 (1.28-2.07)	1.63 (1.28-2.07)	+++		
50-99	31	1.30 (1.14-1.47)	1.27 (1.08-1.50)	++		
100-199	29	1.09 (1.00-1.19)	1.10 (0.96-1.26)	NS		
200-399	22	1.33 (1.21-1.46)	1.32 (1.16-1.50)	+++		
400+	14	1.14 (1.07-1.20)	1.13 (1.02-1.25)	+		
<i>Heterogeneity by study size</i>					***	

**ETS AND LUNG CANCER META-ANALYSES (Continued /2)**

Exposure	Estimates considered	Number of estimates	Relative risk (95% confidence limits)*		Random-effects p, heterogeneity#	
			Fixed-effects meta analysis	Random-effects meta-analysis		
Husband or wife smoked <sup>†,‡</sup> (continued)	Case-control	96	1.19 (1.14-1.24)	1.23 (1.14-1.32)	+++	
	Prospective	22	1.18 (1.05-1.33)	1.18 (1.05-1.33)	++	
	<i>Heterogeneity by study type</i>					NS
	Not age adjusted	21	1.34 (1.19-1.50)	1.42 (1.18-1.71)	+++	
	Age adjusted	97	1.17 (1.12-1.22)	1.19 (1.11-1.27)	+++	
	<i>Heterogeneity</i>					*
	Dose-response results:					
	not reported	46	1.13 (1.06-1.21)	1.18 (1.06-1.31)	++	
	results reported	70	1.22 (1.16-1.28)	1.25 (1.15-1.35)	+++	
	<i>Heterogeneity</i>					NS
	Spouse the index	70	1.18 (1.12-1.25)	1.22 (1.13-1.32)	+++	
	Spouse not the index	48	1.19 (1.12-1.27)	1.20 (1.07-1.35)	++	
	<i>Heterogeneity</i>					NS
	Squamous cell carcinoma	24	1.41 (1.24-1.59)	1.44 (1.15-1.80)	++	
	N America	5	1.40 (1.16-1.70)	1.58 (0.85-2.92)	NS	
	Europe	8	1.59 (1.21-2.09)	1.61 (1.17-2.22)	++	
	Asia	10	1.22 (0.93-1.59)	1.21 (0.86-1.70)	NS	
	Other	1	1.46 (1.08-1.97)	1.46 (1.08-1.97)	+	
	<i>Heterogeneity between continents</i>					NS
	Adenocarcinoma	30	1.23 (1.15-1.32)	1.33 (1.17-1.51)	+++	
N America	7	1.08 (0.96-1.22)	1.08 (0.96-1.22)	NS		
Europe	8	1.12 (0.92-1.37)	1.11 (0.82-1.49)	NS		
Asia	14	1.59 (1.37-1.84)	1.70 (1.35-2.15)	+++		
Other	1	1.22 (1.08-1.38)	1.22 (1.08-1.38)	++		
<i>Heterogeneity between continents</i>					***	
Workplace ETS exposure <sup>§</sup>	All	46	1.21 (1.14-1.28)	1.22 (1.15-1.30)	+++	
	N America	17	1.21 (1.09-1.35)	1.21 (1.06-1.37)	++	
	Europe	11	1.18 (1.01-1.39)	1.18 (1.01-1.39)	+	
	Asia	17	1.33 (1.20-1.47)	1.33 (1.20-1.47)	+++	
	Other	1	1.10 (0.99-1.22)	1.10 (0.99-1.22)	(+)	
	<i>Heterogeneity between continents</i>					(*)
Childhood ETS exposure <sup>**</sup>	From any cohabitant	40	1.08 (1.01-1.15)	1.16 (1.03-1.31)	+	
	N America	12	1.02 (0.90-1.15)	1.09 (0.91-1.32)	NS	
	Europe	11	0.94 (0.81-1.08)	1.02 (0.81-1.29)	NS	
	Asia	15	1.26 (1.11-1.42)	1.31 (1.02-1.67)	+	
	Other	2	1.10 (0.95-1.28)	1.13 (0.89-1.45)	NS	
	<i>Heterogeneity between continents</i>					*
	From the mother specifically	9	0.96 (0.77-1.20)	0.98 (0.77-1.25)	NS	
	From the father specifically	11	0.90 (0.80-1.00)	1.00 (0.78-1.29)	NS	
	From parents specifically	8	0.78 (0.64-0.94)	0.78 (0.64-0.94)	-	
	Household ETS exposure <sup>††</sup>	Any	57	1.13 (1.07-1.19)	1.12 (1.05-1.19)	+++
From sources other than the spouse		12	1.07 (0.92-1.25)	1.17 (0.91-1.52)	NS	

## ETS AND LUNG CANCER META-ANALYSES (Continued /3)

Exposure	Estimates considered	Number of estimates	Relative risk (95% confidence limits)*		Random-effects p, heterogeneity#
			Fixed-effects meta analysis	Random-effects meta-analysis	
ETS exposure in travel <sup>††</sup>	All	8	1.24 (1.01-1.53)	1.34 (0.94-1.93)	NS
Social	All	15	1.03 (0.92-1.16)	1.01 (0.82-1.24)	NS
Total ETS exposure	All	47	1.30 (1.22-1.38)	1.32 (1.19-1.46)	+++
	N America	13	1.13 (0.98-1.30)	1.24 (0.96-1.61)	(+)
	Europe	13	1.09 (0.91-1.31)	1.09 (0.91-1.31)	NS
	Asia	20	1.43 (1.31-1.57)	1.51 (1.31-1.74)	+++
	Other	1	1.31 (1.17-1.47)	1.31 (1.17-1.47)	+++
	<i>Heterogeneity between continents</i>				**

\* Relative risk estimates and 95% confidence limits used in these meta-analyses are adjusted for covariates if adjusted data are available, and otherwise are unadjusted. If the source publication provides more than one adjusted estimate, the data that are normally presented are those adjusted for most covariates.

# Significance and heterogeneity p-values are coded as follows:

Significance (+ve, -ve)	Heterogeneity	Meaning
+++ , ---	***	p<0.001
++ , --	**	p<0.01
+ , -	*	p<0.05
(+), (-)	(*)	p<0.1
NS	NS	p≥0.1

† Index of exposure based on smoking by the spouse or, if not available, the nearest equivalent.

‡ Based on 74 estimates for women, 26 for men and 18 for sexes combined.

§ Results are based on analyses limited to the working population, if available. Otherwise the unexposed group includes those who do not work.

\*\* Where estimates are available for more than one period of childhood, those for the earliest period have been used.

†† Where estimates are only available for specific household members, those for the mother have been used.

††† Where estimates are available for more than one index of social or travel ETS exposure, those for the index with the highest frequency of exposure have been used.

A document<sup>1</sup> and a full computer output<sup>2</sup> provide more information on the individual relative risks, significance tests of heterogeneity and other detail.

References

1. Lee PN, Forey BA, Hamling JS, Thornton A. *Epidemiological evidence on environmental tobacco smoke and lung cancer*. Sutton, Surrey: P N Lee Statistics and Computing Ltd; 2014. [www.pnlee.co.uk/Reports.htm](http://www.pnlee.co.uk/Reports.htm) [Download LEE2014H]
2. Lee PN, Forey BA, Hamling JS, Thornton A. *Detailed meta-analysis on ETS and lung cancer*. Sutton, Surrey: P N Lee Statistics and Computing Ltd; 2014. [www.pnlee.co.uk/Reports.htm](http://www.pnlee.co.uk/Reports.htm) [Download LEE2014J]

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