**Environmental tobacco smoke exposure and COPD - A systematic review**

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**Supplementary file 1**

**Rejected studies**

In preparing the tables and figure in this document certain papers which might be thought to provide relevant data have not been referred to. For each of these papers, this appendix notes the authors, date of publication and country and the reasons for not referring to them. However papers excluded because they give results for symptoms or lung function parameters which do not equate to COPD are not mentioned in this appendix (except where the symptoms are equivalent to chronic bronchitis).

* Hirayama *et al* 1981(1), Japan : Only results for emphysema and asthma combined given, with results for a more appropriate index (emphysema and chronic bronchitis) available elsewhere(2).
* Jones *et al* 1983(3), USA : Results given for comparison of lowest vs highest quartile of FEV1, which does not equate to COPD.
* Hirayama *et al* 1987(4), Japan : Gives less complete results than presented in the paper used(2).
* Kalandidi *et al* 1990(5), Greece : Gives essentially the same data as that presented in the letter used(6).
* Pope and Xu 1993(7), China : “Chest illness” defined as chest illness with increased cough or phlegm during the last 3 years does not equate to COPD.
* Robbins *et al* 1993(8), USA : This study describes results of a study in non-smokers relating definite symptoms of airway obstructive disease to ETS exposure. 15% of subjects had a history of past smoking. There is a statement that analyses were repeated using only data for never smokers, but detailed results are not given.
* Leuenberger *et al* 1994(9), Switzerland : “Chronic bronchitis symptoms” (cough or phlegm for 3 months per year for more than 2 years) does not equate to COPD.
* Knutsen *et al* 1995(10), USA : Based on same subjects as(11), therefore doubtful that analysis reported is restricted to never smokers.
* Whittemore *et al* 1995(12), USA : No results for ETS exposure.
* Dennis *et al* 1996(13), Colombia : No analyses restricted to never smokers.
* Piitulainen *et al* 1998(14), Sweden : A study of alpha 1-antitrypsin deficient non-smokers which mainly concerns lung function. The definition of chronic bronchitis used (daily cough with phlegm at least 3 months per year) does not equate to COPD.
* Berglund *et al* 1999(11), USA : No analyses restricted to never smokers.
* Simoni et al 2001(15), Italy : No results for COPD.
* Birring *et al* 2002(16), England : No control group.
* Garcia-Aymerich *et al* 2003(17), Spain : No control group. No analyses restricted to never smokers.
* Fidan *et al* 2004(18), Turkey : Uses coffeehouse employment as surrogate measure of ETS exposure. No analyses restricted to never smokers.
* Nihlen *et al* 2004(19), Sweden : No analyses restricted to never smokers.
* Svanes *et al* 2004(20), 17 countries in 3 continents : “Chronic bronchitis” (both regular cough and regular phlegm) does not equate to COPD.
* Upton *et al* 2004(21), UK : Results for endpoint of COPD available for ever smokers only, none of the measures of lung function considered for never smokers equates to COPD.
* Behrendt 2005(22), USA : Provides results for ETS exposure at home and at work, and by severity of COPD, in addition to results already included from this study(23), but non-smoker definition includes former smokers up to 5 pack-years.
* Eisner *et al* 2005(24), USA : No analyses restricted to never smokers.
* Kotaniemi *et al* 2005(25), Finland : No analyses restricted to never smokers.
* Vineis *et al* 2005(26), 6 European countries : No analyses restricted to never smokers.
* Wang *et al* 2005(27), China : No details of ETS exposure available for control subjects.
* Xu *et al* 2005(28), China : No analyses restricted to never smokers.
* Amigo *et al* 2006(29), Chile : No analyses restricted to never smokers.
* Eisner *et al* 2006(30), USA : No control group.
* Jindal *et al* 2006(31), India : The definition of COPD used “Presence of cough with expectoration for more than three months in a year for the past two or more years” is actually a definition of the chronic bronchitis syndrome and does not equate to COPD.
* Kałucka 2006(32), Poland : No analyses restricted to never smokers.
* Mohangoo *et al* 2006(33), Netherlands : No analyses restricted to never smokers.
* Price *et al* 2006(34), USA : Never smokers not studied.
* Sunyer *et al* 2006(35), 10 European countries : definition of chronic bronchitis used (chronic phlegm for more than three months each year) does not equate to COPD.
* Chan-Yeung *et al* 2007(36), Hong Kong: No analyses restricted to never smokers.
* Ebbert *et al* 2007(37), USA : No unexposed group.
* Eisner *et al* 2007(38), USA : Describes longitudinal decline in lung function rather than incidence of COPD. Includes smokers with less than 10 pack years or who quit 20 or more years ago.
* Hill *et al* 2007(39), New Zealand : Presents data for an endpoint of respiratory deaths which, although it includes COPD, is too wide to be considered in this review.
* Kalucka 2007(40), Poland : No analyses restricted to never smokers.
* Osman *et al* 2007(41), Scotland : No control group and no analyses restricted to never smokers.
* Simoni *et al* 2007(42), Italy : Presents results for workplace exposure, in addition to spousal exposure previously reported for this study.(43) However, the outcomes presented are less appropriate (OLD including asthma, and various respiratory symptoms).
* Sur and Mukhopadhyay 2007(44), India : Smoking habits of individuals not assessed, families being classified as containing or not containing a smoker.
* Beyer *et al* 2008(45), Germany : No control group. Study of exacerbation rate in subjects with pre-existing disease.
* Lamprecht et al 2008(46), Austria : Presents data for subset of subjects included in paper used for this study(47).
* Nataraja 2008(48), China : Gives less complete data than paper already used for this study(49).
* Vierikko *et al* 2008(50), Finland : Presents data for endpoint of emphysema only in asbestos-exposed workers. No analyses restricted to never smokers except statement that no significant differences were found.
* Vozoris and Lougheed 2008(51), Canada: Presents data for endpoints of self-reported physician-diagnosed chronic bronchitis and emphysema which cannot be combined due to lack of information on cases with both conditions.
* Eisner *et al* 2009(52), USA : No control group. Analyses not restricted to never smokers. Results for short-term ETS exposure already reported for this study(30).
* Evans and Chen 2009(53), Canada : Presents results for endpoint of self-reported physician-diagnosed chronic bronchitis, which does not equate to COPD.
* Lai *et al* 2009(54), Hong Kong : Adolescent subjects. Endpoint of respiratory symptoms (persistent cough or sputum for 3 consecutive months in past 12 months) does not equate to COPD.
* Schwartz *et al* 2009(55), USA: No analyses restricted to never smokers.
* Sleszycka *et al* 2009(56), Poland : Study of COPD prevalence in subjects with severe peripheral arterial disease. No analyses restricted to never smokers.
* Lam *et al* 2010(57), China : ETS exposure only considered as potential confounder in analyses for other exposures.
* Lovasi *et al* 2010(58), USA : Endpoint of emphysema only.
* Lu *et al* 2010(59), China: No results for ETS exposure.
* Naiman *et al* 2010(60), Canada : ETS exposure only considered as potential confounder in analyses for other exposures.
* Roche *et al* 2010(61), France : Endpoint of chronic bronchitis only. No analyses restricted to never smokers.
* Tiberti *et al* 2010(62), Italy : No analyses restricted to never smokers.
* Zhou *et al* 2010(63), China : No analyses restricted to never smokers.
* Al Zaabi *et al* 2011(64), UAE : No analyses restricted to never smokers.
* Beatty *et al* 2011(65), USA : No analyses restricted to never smokers for endpoint of COPD, only chronic bronchitis.
* Hersh *et al* 2011(66), USA : No analyses restricted to never smokers.
* Yin *et al* 2011(67), China : ETS exposure only considered as potential confounder in analyses for other exposures.
* González-Garcia *et al* 2012(68), Colombia : No control group. Participants selected for tobacco smoke exposure.
* Hagstad *et al* 2012(69), Sweden : Superseded by(70), of which it appears to be a subset of participants. (However, note that results for childhood exposure from the earlier paper are still cited in the paper).
* Hooper *et al* 2012(71), 14 countries : No analyses restricted to never smokers. Data already presented for this study(47).
* Jindal *et al* 2012(72), India : Endpoint of chronic bronchitis only.
* Johannessen *et al* 2012(73), Norway : No analyses restricted to never smokers.
* Salameh *et al* 2012(74), Lebanon : Case group includes COPD but is mostly made up of chronic bronchitis cases and results not given separately for COPD. No analyses restricted to never smokers.
* Mahesh *et al* 2013(75), India : Endpoint of chronic bronchitis only.
* Mohammad *et al* 2013(76), Syria : No analyses restricted to never smokers.
* Tutar *et al* 2013(77), Turkey : Endpoint of chronic bronchitis only.
* Zhang *et al* 2013(78), China : No results given for airway obstruction in relation to ETS exposure.
* Cai *et al* 2014(79), China : Economic study with no direct data on COPD incidence.
* Dijkstra *et al* 2014(80), The Netherlands : No analyses restricted to never smokers.
* Parasuramalu *et al* 2014(81), India : No analyses restricted to never smokers.
* Sekine *et al* 2014(82), Japan : No unexposed group.
* She *et al* 2014(83), China : No analyses restricted to never smokers.
* Zahran *et al* 2014(84), USA : No results given for COPD incidence in relation to ETS exposure.
* Golpe *et al* 2015(85), Spain : Study of prognosis in COPD patients rather than incidence.
* Guo *et al* 2015(86), China : Study of FEV1 decline rather than COPD.
* Hagsta *et al* 2015, (87), Sweden : Less detailed results than given by(70).
* Jebrak *et al* 2015(88), France : Case-series of COPD patients with no comparison group.
* O’Brien *et al* 2015(89), Ireland : No analyses restricted to never smokers.
* Örnek *et al* 2015(90), Turkey : No analyses restricted to never smokers.
* Turan 2015(91), Turkey : No analyses restricted to never smokers.
* Yang *et al* 2015(92), China : No analyses restricted to never smokers. No analyses with COPD as separate endpoint.
* Yang *et al* 2015(93), China : No analyses restricted to never smokers.
* Koeverden *et al* 2015(94), USA : No analyses restricted to never smokers.

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