

Appendix Table 2. Epidemiologic cohort studies of PM_{2.5} and total mortality in California, 2000-2016
Relative risk of death from all causes (RR and 95% CI) associated with increase of 10 µg/m³ in PM_{2.5}
<http://scientificintegrityinstitute.org/NoPMDeaths081516.pdf>

Krewski 2000 & 2010	CA CPS II Cohort	N=40,408	RR = 0.872 (0.805-0.944)	1982-1989
(N=[18,000 M + 22,408 F]; 4 MSAs; 1979-1983 PM _{2.5} ; 44 covariates)				
McDonnell 2000	CA AHSMOG Cohort	N~3,800	RR ~ 1.00 (0.95 – 1.05)	1977-1992
(N~[1,347 M + 2,422 F]; SC&SD&SF AB; M RR=1.09(0.98-1.21) & F RR~0.98(0.92-1.03))				
Jerrett 2005	CPS II Cohort in LA Basin	N=22,905	RR = 1.11 (0.99 - 1.25)	1982-2000
(N=22,905 M & F; 267 zip code areas; 1999-2000 PM _{2.5} ; 44 cov + max confounders)				
Enstrom 2005	CA CPS I Cohort	N=35,783	RR = 1.039 (1.010-1.069)	1973-1982
(N=[15,573 M + 20,210 F]; 11 counties; 1979-1983 PM _{2.5})				
			RR = 0.997 (0.978-1.016)	1983-2002
Enstrom 2006	CA CPS I Cohort	N=35,783	RR = 1.061 (1.017-1.106)	1973-1982
(11 counties; 1979-1983 & 1999-2001 PM _{2.5})				
			RR = 0.995 (0.968-1.024)	1983-2002
Zeger 2008	MCAPS Cohort “West”	N=3,100,000	RR = 0.989 (0.970-1.008)	2000-2005
(N=[1.5 M M + 1.6 M F]; Medicare enrollees in CA+OR+WA (CA=73%); 2000-2005 PM _{2.5})				
Jerrett 2010	CA CPS II Cohort	N=77,767	RR ~ 0.994 (0.965-1.025)	1982-2000
(N=[34,367 M + 43,400 F]; 54 counties; 2000 PM _{2.5} ; KRG ZIP; 20 ind cov+7 eco var; Slide 12)				
Krewski 2010 (2009)	CA CPS II Cohort			
(4 MSAs; 1979-1983 PM _{2.5} ; 44 cov)		N=40,408	RR = 0.960 (0.920-1.002)	1982-2000
(7 MSAs; 1999-2000 PM _{2.5} ; 44 cov)		N=50,930	RR = 0.968 (0.916-1.022)	1982-2000
Jerrett 2011	CA CPS II Cohort	N=73,609	RR = 0.994 (0.965-1.024)	1982-2000
(N=[32,509 M + 41,100 F]; 54 counties; 2000 PM _{2.5} ; KRG ZIP Model; 20 ind cov+7 eco var; Table 28)				
Jerrett 2011	CA CPS II Cohort	N=73,609	RR = 1.002 (0.992-1.012)	1982-2000
(N=[32,509 M + 41,100 F]; 54 counties; 2000 PM _{2.5} ; Nine Model Ave; 20 ic+7 ev; Fig 22 & Tab 27-32)				
Lipsett 2011	CA Teachers Cohort	N=73,489	RR = 1.01 (0.95 – 1.09)	2000-2005
(N=[73,489 F]; 2000-2005 PM _{2.5})				
Ostro 2011	CA Teachers Cohort	N=43,220	RR = 1.06 (0.96 – 1.16)	2002-2007
(N=[43,220 F]; 2002-2007 PM _{2.5})				
Jerrett 2013	CA CPS II Cohort	N=73,711	RR = 1.060 (1.003–1.120)	1982-2000
(N=[~32,550 M + ~41,161 F]; 54 counties; 2000 PM _{2.5} ; LUR Conurb Model; 42 ind cov+7 eco var+5 metro; Table 6)				
Jerrett 2013	CA CPS II Cohort	N=73,711	RR = 1.028 (0.957-1.104)	1982-2000
(same parameters and model as above, except including co-pollutants NO ₂ and Ozone; Table 5)				
Ostro 2015	CA Teachers Cohort	N=101,884	RR = 1.01 (0.98 -1.05)	2001-2007
(N=[101,881 F]; 2002-2007 PM _{2.5}) (all natural causes of death)				
Thurston 2016	CA NIH-AARP Cohort	N=160,209	RR = 1.02 (0.99 -1.04)	2000-2009
(N=[~95,965 M + ~64,245 F]; full baseline model: PM _{2.5} by zip code; Table 3) (all natural causes of death)				
Enstrom 2016 unpub	CA NIH-AARP Cohort	N=160,368	RR = 1.001 (0.949-1.055)	2000-2009
(N=[~96,059 M + ~64,309 F]; full baseline model: 2000 PM _{2.5} by county)				

References for Appendix Table 2

- Enstrom JE (2005). Fine particulate air pollution and total mortality among elderly Californians, 1973-2002. *Inhal Toxicol* 2005;17:803-816 (http://www.arb.ca.gov/planning/gmerp/dec1plan/gmerp_comments/enstrom.pdf) and (<http://www.scientificintegrityinstitute.org/IT121505.pdf>)
- Enstrom JE (2006). Response to “A Critique of 'Fine Particulate Air Pollution and Total Mortality Among Elderly Californians, 1973-2002’ by Bert Brunekreef, PhD, and Gerard Hoek, PhD’, *Inhal Toxicol* 2006;18:509-514 (<http://www.scientificintegrityinstitute.org/IT060106.pdf>) and (<http://www.scientificintegrityinstitute.org/ITBH060106.pdf>)
- Enstrom JE (2012). Particulate Matter is Not Killing Californians. Proceedings of the American Statistical Association Joint Statistical Meeting, Section on Risk Analysis, San Diego, CA, pages 2324-2336, 2012. (<http://www.scientificintegrityinstitute.org/ASAS092812.pdf>)
- Jerrett M, Burnett RT, Ma R, Pope CA III, Krewski D, Newbold KB, Thurston G, Shi Y, Finkelstein N, Calle EE, Thun MJ (2005). Spatial Analysis of Air Pollution and Mortality in Los Angeles. *Epidemiology* 2005;16:727–736 (<http://www.scientificintegrityinstitute.org/Jerrett110105.pdf>)
- Jerrett M (2010). February 26, 2010 CARB Symposium Presentation by Principal Investigator, Michael Jerrett, UC Berkeley/CARB Proposal No. 2624-254 "Spatiotemporal Analysis of Air Pollution and Mortality in California Based on the American Cancer Society Cohort" (<http://www.scientificintegrityinstitute.org/CARBJerrett022610.pdf>)
- Jerrett M (2011). October 28, 2011 Revised Final Report for Contract No. 06-332 to CARB Research Screening Committee, Principal Investigator Michael Jerrett, “Spatiotemporal Analysis of Air Pollution and Mortality in California Based on the American Cancer Society Cohort” Co-Investigators: Burnett RT, Pope CA III, Krewski D, Thurston G, Christakos G, Hughes E, Ross Z, Shi Y, Thun M (<http://www.arb.ca.gov/research/rsc/10-28-11/item1dfr06-332.pdf>) and (<http://www.scientificintegrityinstitute.org/Jerrett012510.pdf>) and (<http://www.scientificintegrityinstitute.org/JerrettCriticism102811.pdf>)
- Jerrett M, Burnett RT, Beckerman BS, Turner MC, Krewski D, Thurston G, Martin RV, van Donkelaar A, Hughes E, Shi Y, Gapstur SM, Thun MJ, Pope CA 3rd. [Spatial analysis of air pollution and mortality in California](#). *Am J Respir Crit Care Med*. 2013 Sep 1;188(5):593-9. doi: 10.1164/rccm.201303-0609OC. PMID: 23805824
- Krewski D (2000). "Reanalysis of the Harvard Six Cities Study and the American Cancer Society Study of Particulate Air Pollution and Mortality: HEI Special Report. July 2000" (<http://pubs.healtheffects.org/view.php?id=6>). Figure 5 and Figure 21 of Part II: Sensitivity Analyses (<http://pubs.healtheffects.org/getfile.php?u=275>) and (<http://www.scientificintegrityinstitute.org/HEIFigure5093010.pdf>)
- Krewski D (2009). Krewski D, Jerrett M, Burnett RT, Ma R, Hughes E, Shi Y, Turner MC, Pope CA III, Thurston G, Calle EE, Thun MJ. [Extended Analysis of the American Cancer Society Study of Particulate Air Pollution and Mortality](#). HEI Research Report 140. May 2009 (<http://pubs.healtheffects.org/view.php?id=315>)

Krewski D (2010). August 31, 2010 letter from Krewski to Health Effects Institute and CARB with California-specific PM2.5 mortality results from Table 33 in Krewski 2009 (http://www.arb.ca.gov/research/health/pm-mort/HEI_Correspondence.pdf)

Lipsett MJ, Ostro BD, Reynolds P, Goldberg D, Hertz A, Jerrett M, Smith DF, Garcia C, Chang ET, Bernstein L (2011). Long-term Exposure to Air Pollution and Cardiorespiratory Disease in the California Teachers Study Cohort. *Am J Respir Crit Care Med* 2011;184:828–835 (<http://ajrccm.atsjournals.org/content/184/7/828.full.pdf>)

McDonnell WF; Nishino-Ishikawa N; Petersen FF; Chen LH; Abbey DE (2000). Relationships of mortality with the fine and coarse fractions of long-term ambient PM10 concentrations in nonsmokers. *J Expo Anal Environ Epidemiol* 2000;10:427-436 (<http://www.scientificintegrityinstitute.org/JEAEE090100.pdf>)

Ostro B, Lipsett M, Reynolds P, Goldberg D, Hertz A, Garcia C, Henderson KD, Bernstein L (2010). Long-Term Exposure to Constituents of Fine Particulate Air Pollution and Mortality: Results from the California Teachers Study. *Environ Health Perspect* 2010;118:363-369 with June 2011 Erratum (<http://ehp03.niehs.nih.gov/article/info:doi/10.1289/ehp.0901181>)

Ostro B, Hu J, Goldberg D, Reynolds P, Hertz A, Bernstein L, Kleeman MJ (2015). Associations of Mortality with Long-Term Exposures to Fine and Ultrafine Particles, Species and Sources: Results from the California Teachers Study Cohort. *Environ Health Perspect* 2015;123:549–556 (<http://ehp.niehs.nih.gov/1408565/>) or (<http://dx.doi.org/10.1289/ehp.1408565>)

Pope CA III, Dockery DW. (2006). Health Effects of Fine Particulate Air Pollution: Lines that Connect. *JAWMA, Critical Review*. 56(6):709-742 (<http://www.scientificintegrityinstitute.org/PopeDockery2006.pdf>) and (<http://www.scientificintegrityinstitute.org/PopePPT2006.pdf>)

Thurston GD, Ahn J, Cromar KR, Shao Y, Reynolds HR, Jerrett M, Lim CC, Shanley R, Park Y, Hayes RB (2016). Ambient Particulate Matter Air Pollution Exposure and Mortality in the NIH-AARP Diet and Health Cohort. *Environ Health Perspect* 2016;124:484-490 (<http://ehp.niehs.nih.gov/1509676/>)

U.S. EPA (2012). Regulatory Impact Analysis related to the Proposed Revisions to the National Ambient Air Quality Standards for Particulate Matter EPA-452/R-12-003 (http://www.epa.gov/ttn/ecas/regdata/RIAs/PMRIACombinedFile_Bookmarked.pdf)

Zeger SL, Dominici F, McDermott A, Samet JM (2008). Mortality in the Medicare Population and Chronic Exposure to Fine Particulate Air Pollution in Urban Centers (2000-2005). *Environ Health Perspect* 2008;116:1614-1619 (<http://ehp03.niehs.nih.gov/article/info:doi/10.1289/ehp.11449>)