

Date: Mon, 01 Dec 2008 14:31:22 -0800
To: "Michael J. Thun" <mthun@cancer.org>
From: "James E. Enstrom" <jenstrom@ucla.edu>
Subject: Request Regarding PM2.5 and Mortality in CPS II

December 1, 2008

Michael J. Thun, M.D., M.S.
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Dear Dr. Thun:

I am writing to request your assistance in conducting California-specific analyses based on the 1982 ACS Cancer Prevention Study (CPS II) database used in the 2002 Pope et al. paper "Lung Cancer, Cardiopulmonary Mortality, and Long-Term Exposure to Fine Particulate Air Pollution" (*JAMA* 2002;287:1132-1141 <http://jama.ama-assn.org/cgi/reprint/287/9/1132>). This paper, which you coauthored, has been prominently cited by the California Air Resources Board (CARB) in its reports on "Methodology for Estimating Premature Deaths Associated with Long-term Exposures to Fine Airborne Particulate Matter in California," both the May 22, 2008 CARB Draft Report (<http://www.arb.ca.gov/research/health/pm-mort/pm-mortdraft.pdf>) and the October 24, 2008 CARB Final Report (http://www.arb.ca.gov/research/health/pm-mort/pm-mort_final.pdf). Furthermore, this paper has been cited as a primary public health justification for pending CARB "Statewide Truck and Bus Regulations" (<http://www.arb.ca.gov/regact/2008/truckbus08/truckbus08.htm#anchor>). In particular, Appendix E of these Regulations: Health Risk Assessment Methodology (<http://www.arb.ca.gov/regact/2008/truckbus08/appe.pdf>) states on page E-20 that "Premature death calculations were based on the concentration-response function of Pope et al. (Pope, 2002). . . . numerous studies have shown that the mortality effects of PM in California are comparable to those found in other locations in the United States, justifying our use of Pope et al's results. . . ." However, several highly qualified individuals, including myself, have substantial evidence that the nationwide Pope et al. results overestimate the number of premature deaths currently associated with fine particulate matter in California (http://www.arb.ca.gov/research/health/pm-mort/pm-mort_supp.pdf). Specific evidence indicating that there is little or no current relationship between PM2.5 and mortality in California is summarized in my October 1, 2008 CARB public comments (http://www.arb.ca.gov/lists/verdev2008/33-32-carb_enstrom.pdf) and in the July 11, 2008 CARB public comments of Jon M. Heuss (<http://www.scientificintegrityinstitute.org/Heuss071108.pdf>).

I understand that the ACS is currently participating in a CARB contract to fully analyze the relationship between PM_{2.5} and mortality among the California residents in the CPS II cohort. Thus, I request that you calculate the relationship in the manner described in the third (July 11, 2008) portion of my October 1, 2008 CARB public comments. Using the same CPS II database and proportional hazards methodology used in the 2002 Pope et al. paper, calculate the all cause mortality relative risk (RR) and 95% confidence interval (CI) associated with a 10-ug/m³ increase in PM_{2.5}, similar to RRs shown in *JAMA* Table 2. Specifically:

a) Calculate age-sex-adjusted RRs and fully adjusted RRs based on all 61 metropolitan areas for 1979-1983, 1999-2000, and average PM_{2.5} related to all causes of death during three time periods: September 1, 1982 through December 31, 1998, September 1, 1982 through December 31, 1989, and January 1, 1990 through December 31, 1998 [2 x 3 x 3 = 18 RRs]. For instance, fully adjusted RR (1979-1983 PM_{2.5}, 1982-1998 deaths) = 1.04 (1.01-1.08).

b) Calculate age-sex-adjusted RRs and fully adjusted RRs based on the metropolitan areas in California for 1979-1983, 1999-2000, and average PM_{2.5} related to all causes of death for the three time periods: 1982-1998, 1982-1989, and 1990-1998 [2 x 3 x 3 = 18 RRs]. Specify the definition of the California metropolitan areas used in the *JAMA* paper and the number of CPS II subjects and deaths in each area used in the calculation of each RR.

Please let me know as soon as possible if you are willing to conduct any or all of these analyses. If so, further details can be worked out.

Thank you very much for your consideration of this important request.

Sincerely yours,

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