At 09:22 AM 12/26/2005, you wrote:

Dear Prof. Hricko:

I have mailed you a reprint of my *Inhalation Toxicology* paper. You can also obtain a copy via this web link:

http://www.journalsonline.tandf.co.uk/link.asp?id=p0gr311404273122.

Thank you for your interest in my research. Please let me know if you have any comments or questions regarding it.

Best regards,

James E. Enstrom, Ph.D., M.P.H.
jenstrom@ucla.edu
(310) 825-2048

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Dear Dr. Enstrom: Can you please send me a copy of this paper. Many thanks, Andrea Hricko, USC


**Fine particulate air pollution and total mortality among elderly Californians, 1973-2002.**
Enstrom, JE

Jonsson Comprehensive Cancer Center, University of California, Los Angeles, California 90095, USA. jenstrom@ucla.edu

Fine particulate air pollution has been associated with increases in long-term mortality in selected cohort studies, and this association has been influential in the establishment of air quality regulations for fine particles (PM(2.5)). However, this epidemiologic evidence has been questioned because of methodological issues, conflicting findings, and lack of an accepted causal mechanism. To further evaluate this association, the long-term relation between fine particulate air pollution and total mortality was examined in a cohort of 49,975 elderly Californians, with a mean age of 65 yr as of 1973. These subjects, who resided in 25 California counties, were enrolled in 1959, recontacted in 1972, and followed from 1973 through 2002; 39,846 deaths were identified. Proportional hazards regression models were used to determine their relative risk of death (RR) and 95% confidence interval (CI) during 1973-2002 by county of residence. The models adjusted for age, sex, cigarette smoking, race, education, marital status, body mass index, occupational exposure, exercise, and a dietary factor. For the 35,789 subjects residing in 11 of these counties, county-wide exposure to fine particles was estimated from outdoor ambient concentrations measured during 1979-1983 and RRs were calculated as a function of these PM(2.5) levels (mean of 23.4 microg/m(3)). For the initial period, 1973-1982, a small positive risk was found: RR was 1.04 (1.01-1.07) for a 10-microg/m(3) increase in PM(2.5). For the subsequent period, 1983-2002, this risk was no longer present: RR was 1.00 (0.98-1.02). For the entire follow-up period, RR was 1.01 (0.99-1.03). The RRs varied somewhat among major subgroups defined by sex, age, education level, smoking status, and health status. None of the subgroups that had significantly elevated RRs during 1973-1982 had significantly elevated RRs during 1983-2002. The RRs showed no substantial variation by county of residence during any of the three follow-up periods. Subjects in the two counties with the highest PM(2.5) levels (mean of 36.1 microg/m(3)) had no greater risk of death than those in the two counties with the lowest PM(2.5) levels (mean of 13.1 microg/m(3)). These epidemiologic results do not support a current relationship between fine particulate pollution and total mortality in elderly Californians, but they do not rule out a small effect, particularly before 1983.

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