Does Fine Particulate Matter Kill Californians? An Epidemiologic and Regulatory Controversy

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Abstract

The relationship between fine particulate air pollution (PM2.5) and mortality is an important public health issue in California and the United States. Based primarily on national epidemiologic evidence centered around the 1980s, an October 2008 Staff Report by the California Air Resources Board (CARB) concluded that PM2.5 exposure contributes to 18,000 annual deaths in California, with diesel particulate matter (PM) exposure being responsible for 3,500 of these deaths. Primarily because of these “premature deaths,” CARB approved a complex set of multi-billion dollar diesel regulations in December 2008. These regulations, many of which go into effect in January 2012, are designed to reduce the diesel PM emitted by all California vehicles and equipment powered by diesel engines. However, California-specific evidence from seven independent sources, much of which has emerged since 2008, indicates that there is NO relationship between PM2.5 and total (all cause) mortality in California. In addition, a March 2011 US EPA Regulatory Impact Analysis stated that only 2% of the national PM2.5-related “premature deaths” occur in the Western US. Dr. Enstrom will describe the underlying scientific evidence linking PM2.5 and diesel PM to mortality and the way this evidence has been evaluated by California scientists since 1989. In addition, he will discuss the limitations of this evidence and the need to put it perspective with other health risks in California. Finally, he will make the case that PM2.5 is not killing Californians and that there is no longer a sound public health basis for the CARB diesel regulations.

About the Speaker

In 1970 Dr. Enstrom obtained a Ph.D. in physics from Stanford University. Since December 1973, he has been conducting epidemiologic research at the UCLA School of Public Health, where he obtained an M.P.H. and postdoctoral certificate in epidemiology. Since 1976 he has held research faculty positions in the School of Public Health and the Jonsson Comprehensive Cancer Center. Since 1981 he has been a Fellow of the American College of Epidemiology. His epidemiologic research has focused on the relationship of mortality to healthy lifestyles, vitamin C, active and passive smoking, smoking cessation, and air pollution. Since 2005 he has been President of the Scientific Integrity Institute, which he established in order to promote scientific integrity in epidemiology and to fully address controversial epidemiologic relationships, such as, the one described above.