

American College of Epidemiology Annual Meeting
“Real-World Epidemiologic Evidence in Policy and Practice”
Pasadena, California
September 7-10, 2019
<https://www.acepidemiology.org/2019-annual-meeting>

ACE Luncheon Roundtable
Misuse of Epidemiology Regarding PM2.5 and Roundup
September 9, 2019

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Consistent with the theme of the ACE Annual Meeting, this Roundtable will discuss two substances where real-world epidemiologic evidence has been manipulated and used for designations and policies that are unjustified based upon traditional epidemiologic standards. The two substances are the air pollutant fine particulate matter (PM2.5) and the herbicide glyphosate (Roundup). These two substances are particularly relevant to California because they currently provide the unjustified bases for multibillion-dollar PM2.5 regulations and multibillion-dollar Roundup lawsuits.

Thirty-year abuse of air pollution epidemiology has been used to turn a weak positive relationship between PM2.5 and total mortality (RR ~ 1.1) into the primary public health justification for costly EPA PM2.5 regulations. This weak relationship has recently been shown to be null (RR = 1.0) in a meta-analysis of eight US cohort studies. The problems with this relationship are described in my July 20, 2009 Doctors for Disaster Preparedness Talk "The PM2.5 Deaths Controversy: Combating Pseudoscientists" (<https://youtu.be/8j3a4MBUU40>). Also, a 205-page April 11, 2019 EPA Clean Air Scientific Advisory Committee Review has heavily criticized the Draft 2018 EPA PM2.5 Integrated Science Assessment (<https://yosemite.epa.gov/sab/sabproduct.nsf/LookupWebReportsARsLastMonthCASAC/932d1df8c2a9043f852581000048170d!OpenDocument&TableRow=2.3#2>).

In 2015, IARC became the first agency to classify glyphosate (Roundup) as “probably carcinogenic to humans.” This contested IARC assessment ignored the extensive null epidemiologic evidence in favor of one controversial animal study that suggested a relationship. The ‘cancer’ classification of glyphosate has generated lawsuits in California that have resulted in three recent jury awards of \$289 million, \$80 million, and \$2 billion to plaintiffs who claim their cancer is due to exposure to Roundup. These awards are being appealed, but there are now about 15,000 pending lawsuits that will likely bankrupt the manufacturer of Roundup. Severe criticism of this glyphosate misclassification is given in published articles and a forthcoming article “Who’s Afraid of Roundup?” by courageous epidemiologist Geoffrey Kabat (<https://www.geoffreykabat.com/articles>) and perceptive science writer Paul Driessen (<https://townhall.com/columnists/pauldriessen/2019/02/03/keep-fraudulent-science-out-of-our-courtrooms-n2540723>).

Most of the contested findings on these substances have come from non-epidemiologists who have ignored the traditional epidemiologic standards for establishing a causal relationship and who refuse to cooperate with efforts to confirm that their ‘positive’ findings are transparent and reproducible. ACE Members and Fellows should be aware of this misuse of epidemiology and should combat it.