



## Is Small Particle Air Pollution Really Killing Americans?

By Steve Goreham

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Unnoticed by most citizens, last week the United States Senate [introduced](#) the “Secret Science Reform Act of 2015.” The act is aimed at the Environmental Protection Agency’s practice of refusing to disclose data from scientific studies that support new pollution regulations. The act indirectly questions the EPA assertion that Americans are dying today from small particle air pollution.

Past EPA Administrator Lisa Jackson [testified](#) before Congress in 2011, stating, “Particulate matter causes premature death. It doesn’t make you sick. It’s directly causal to dying sooner than you should.” Particulate matter refers to PM2.5, classified by the EPA as particles smaller than 2.5 microns in diameter, much smaller than the eye can see. Particle pollution is a mixture of dust, nitrates and sulfates, metals, pollen, and organic chemicals.

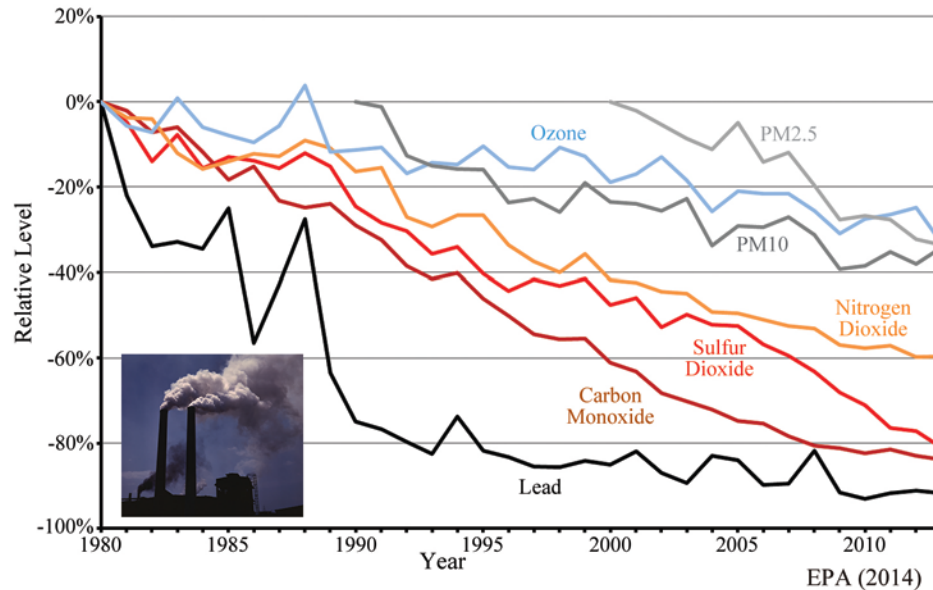
The EPA [claims](#) that any level of small particles can cause premature death. The agency warns that death may be short-term, occurring within a few hours of inhalation, or may be caused by long-term inhalation of PM2.5 over several years. EPA policy advisor Amanda Brown [asserted](#) that between 130,000 and 320,000 Americans died prematurely in 2005 due to small particle pollution, an incredible 6 to 15 percent of total US deaths.

EPA claims that particle pollution triggers heart failure, respiratory failure, or other causes of death. For example, suppose a senior citizen dies a few days before his 67<sup>th</sup> birth day and a coroner determines heart failure to be the cause of death. According to the EPA, the death may have been “premature” and caused by small particle air pollution.

The EPA uses “prevention” of premature deaths from small particles to justify tighter pollution regulations. The EPA’s proposed Clean Power Plan, which will force closure of coal-fired power plants across the nation, is an example. The EPA [claims](#) that implementation of the CPP will prevent up to 6,600 premature deaths and \$93 billion in climate and public health benefits. But the monetized climate benefits are essentially zero. Almost all of the \$93 billion comes from an EPA calculation on savings from avoidance of premature death from small

particles.

## US Air Pollution 1980-2013



Today, our nation's air is remarkably clean, especially when compared to 50 years ago. Incidents of serious air pollution are rare. According to the EPA, the concentration of six major air pollutants, lead, nitrous oxides, sulfur dioxide, ozone, and particulates, are [down](#) more than a combined 70 percent since 1980. PM2.5 particle pollution is typically below the EPA national [standard](#) of 15 micrograms per cubic meter of air.

Fifteen micrograms per cubic meter is not very much. Dr. James Enstrom, retired researcher from the UCLA School of Public Health, [points](#) out that a person breathing in 15 micrograms of small particles per cubic meter would inhale only about one teaspoon of these microscopic particles over an 80-year lifespan. The EPA's assertion that this small amount of particles causes premature death is not credible.

How does the EPA conclude that thousands of Americans die each year from particle pollution? No coroner ever attributes a cause of death to particle pollution. Instead, the EPA relies on epidemiological observational studies that associate particle pollution with death.

Epidemiological studies analyze statistical associations between exposure to an agent and appearance of disease in a population. An example is the Doll and Hill study in the 1950s that [found](#) that cigarette smoking caused lung cancer in a population of 41,000 British medical doctors. EPA has concluded that associations found in epidemiological studies show that inhalation of small particles cause premature death.

But the association between death and particle pollution found by studies that EPA relies on is shaky at best. Relative risk (RR) is the ratio of incidence of disease in an exposed population to a control population. The size of the relative risk is a measure of the chance that an association is causal.

The Harvard Six Cities [study](#) of 1993 and the American Cancer Society [study](#) of 1995, two studies that form the basis of EPA small particle science, found an increase in relative risk of

less than 20 percent (RR=1.2). An increase in death rates of less than 20 percent (RR=1.2) is almost statistically indistinguishable from zero. In contrast, the Doll and Hill study on cigarettes and lung cancer [found](#) smokers had 10 times the rate of lung cancer and non-smokers, a relative risk of RR=10. The weak association (small relative risk) between death and particle pollution that the EPA judges to be causal could be due to other factors in the measured populations or even random chance.

But what stinks to high heaven is that data from the Harvard Six Cities and American Cancer Society studies have never been released. Other scientists are not able to replicate and verify the results of these studies. In effect, the EPA is asking all to “trust us” on the science of death from particle pollution. The Secret Science Reform Act proposes to force the EPA to disclose data from studies that support the need for EPA regulations.

Further, EPA is often the funding agency for epidemiological studies that are then used to justify new air pollution regulations. EPA supports such studies either directly or indirectly through grants to organizations such as the American Lung Association and the American Cancer Society. For example, over the last decade the EPA has [provided](#) more than \$20 million in grants to the American Lung Association, a group that supports EPA efforts for more stringent air pollution regulations.

The result is a massive, costly, and growing burden on American citizens in the name of clean air. NERA Economic Consulting [estimates](#) that the Clean Power Plan will cost US citizens some \$400 billion in compliance costs over the next 15 years. But the savings from “prevention of premature deaths” from particle pollution are likely imaginary.

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