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Bigger health risk found in airborne specks

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Tiny, breathable particles in vehicle and industry exhausts are 70 percent more dangerous than previously thought and are believed responsible for as many as 24,000 deaths a year in California, according to state estimates released Wednesday.

The finding likely will lead state air regulators to propose tighter emission limits in California, which already has the nation's toughest controls – and the worst air pollution, officials said.

Significantly, researchers believe many of the estimated soot-related deaths occur when pollution levels are within range of federal clean-air standards. Scientists have not determined whether there is a "safe" level of "fine-particle" pollution – microscopic, airborne bits of ash, metals, diesel exhaust and chemicals, collectively called soot.

The study, which drew help from experts at the U.S. Environmental Protection Agency, supports California's bid for more aggressive EPA regulation of soot from sources the agency controls – planes, locomotives and ships.

"This data strengthens our resolve on a number of fronts," said Leo Kay, spokesman for the California Air Resource Board, which regulates auto pollution.

The air board's directors will vote in Fresno today on the San Joaquin Valley Air Pollution Control District's plan to combat high levels of soot.

The board must find that the strategy approved by locally elected officials will bring the Valley within federal clean-air standards by 2014.

"I expect a pretty lively discussion," Kay said.

Air board staff conducted the research to see whether the state and federal standards for fine particles – which measure 2.5 microns or less in diameter (about 20 times smaller than that of an average human hair) – adequately protect the public from long-term exposure to particle pollution, which board Chairwoman Mary Nichols calls a "silent killer."

The fine, windblown specks penetrate more deeply into lungs than ordinary dust, aggravating existing heart and lung conditions, such as asthma, and even triggering death, many studies show.

Scientists have found a significant association between the daily health-related death rate in Sacramento and other populous counties in California and the amount of haze in the air that day.

Even brief episodes of severe particle pollution – a day or two – can be enough to kill people with asthma or heart disease sooner than expected.

"We're talking about people losing at least 10 years of their life," said Linda Smith, the air board's manager of health and ecosystems assessment.

The analysis estimated the rate of these "premature deaths" associated with fine-particle pollution at 14,000 to 24,000 statewide every year.

The estimated range of these deaths is broad to account for obesity, smoking and other risk factors for heart attacks and strokes and lung cancer, air board experts said.

The majority of the estimated deaths occur in highly populated areas, including the Sacramento region, the Bay Area, Fresno and Los Angeles.

In the Sacramento area, particle pollution is mainly a wintertime problem caused by smoke from fireplaces and woodstoves and diesel exhaust.

The new estimate represents a 70 percent increase over the current estimated risk of premature death linked to soot, developed six years ago, said Bart Croes, the air board's research chief.

The air board derived its risk estimates from the latest and most comprehensive studies examining links between soot levels and incidence of health-related deaths.

"We consulted with virtually every expert in the world on this issue," Croes said.

Since 1990, dozens of studies in the United States, Canada and Europe have consistently linked particle pollution to decreased lung function, higher school absenteeism and increased hospital admissions for children and elderly people with heart and lung problems. The studies have found that the risk of dying increases in proportion to pollution levels.

Though the link is strong, scientists say they cannot prove the pollution actually causes the deaths.

Said Croes, "There's no death certificate that says people specifically died because of air pollution."

The soot report is not all bad news. State air monitoring data show levels of "fine" particles decreasing 30 percent in the Sacramento region and the state as a whole since 1999, even as population and the number of vehicles miles traveled grew.

"Over past seven years, we think this improvement has saved over 17,000 deaths," Croes said. "That's a rate of improvement much greater than we have seen elsewhere in United States and in Europe."

The improvement has been highest in the most polluted basins, with soot levels dropping 45 percent in the San Joaquin Valley and declining as much as 47 percent in the South Coast air basin that includes Los Angeles, Orange, Riverside and San Bernardino counties.

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