BREATHE PROJECT
The Air We Share

**Allegheny County Residents Suffer Higher Mortality Rates from Fine Particle Pollution than Other Parts of the United States**

*Key results from a study of particulate pollution in Allegheny County environmental justice communities shows that air pollution is currently and continually killing more residents in Allegheny County than Covid-19.*

- The "Fine Particulate Matter and Mortality in Allegheny County, Pa." study (PM Mortality Report) estimates that during the reporting period of 2009-2011, exposures to fine particulate matter (PM2.5) from air pollution generated by man-made sources resulted in 900-1920 deaths each year.

- **Updated estimates during 2020-2022 show that while air pollution has improved and been reduced by 28.5% during the past decade in Allegheny County, an estimated 640 -1,373 people died each year from PM2.5 pollution.**

- In Allegheny County, estimates underscore that 3.7 to 7 times more people are dying of air pollution than Covid-19. Covid-19 deaths stood at around 230 people in 2023, according to the Allegheny County Dept. of Health.

- Mortality rates from PM2.5 pollution were 33% higher in Allegheny County communities with more than 20% of residents living below the federal poverty level than in communities with less than 10% of residents living below the federal poverty level. These numbers were calculated for the study period 2009 - 2011 with likely extensions to 2020 - 2022. (Kheirbek, Iyad, PM Mortality Report)

- Allegheny County Communities with more than 30% of the population identifying as Black, Hispanic, Asian American, or American Indian and Alaskan Native had 18% higher mortality rates from PM2.5 pollution than communities with less than 10% of the population identifying as people of color. (Kheirbek, Iyad, PM Mortality Report)

- The American Lung Association State of the Air 2024 reports that Allegheny County residents most at risk are children under 18 years (226,322), those with respiratory diseases like asthma, COPD and cardiovascular disease (306,813), lung cancer (635), people of color (281,102) and adults over 65-years-old (251,498).

- Most of the PM2.5-attributable deaths in Allegheny County occurred in older populations, with 80% of the burden falling on adults over 65 years of age. (Kheirbek, Iyad, PM Mortality Report)

**About the "Fine Particulate Matter and Mortality Report" (June 20, 2018)**

The "Fine Particulate Matter and Mortality in Allegheny County, Pa." report was conducted by air quality researcher Iyad Kheirbek and commissioned by the Heinz Endowments in June 2018. The report directly estimated premature mortality in the county attributable to exposure to fine particulate matter. The mortality calculations relied on two widely accepted studies (Krewski and Lepeule) that estimated the concentration-response function between PM2.5 and premature mortality. The study relied on detailed health data at the local level and spatially refined estimates of annual PM2.5 for 2009-2011.

**What is fine particulate matter?**
Fine particulate matter (PM2.5) is an air pollutant small enough to be inhaled

deep into the lungs. The term describes a mixture of solid particles and liquid droplets in the air. Some particles – such as dust, dirt, soot or smoke – are large or dark enough to be seen with the naked eye. Others such as PM2.5 are so small they can only be detected using an electron microscope.

**Why is PM2.5 harmful?**
Since it can travel deep into the lungs and may make its way into the bloodstream, PM2.5 has been associated with airway inflammation, decreased lung function, increased blood pressure, blood clot formation and changes in heart rhythm.

Studies in the Pittsburgh area report a link between PM2.5 and increased risk of death, hospitalizations due to heart/lung complications, emergency department visits for asthma and adverse birth outcomes.

**Sources**

Kheirbek, Iyad, "Fine Particulate Matter and Mortality in Allegheny County, Pa.," 2018.

Covid-19 Statistics, Allegheny County Health Dept., 2023

Lepeule, Johanna, Laden, Francine, Dockery, Douglas, and Schwartz, Joel, "Chronic Exposure to Fine Particles and Mortality: An Extended Follow-up of the Harvard Six Cities Study from 1974-2009," 2012.

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