

Air Pollution Harms Black Americans More Than Other Groups

A Stanford study shows how air pollution affects racial groups differently.

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Black Americans are more likely to die of illnesses related to air [pollution](#) compared with other racial groups, according to a study by Stanford Medicine researchers and colleagues.

Although U.S. air quality has improved in recent decades, air pollutants remain a significant environmental and health hazard. Polluted air affects people to varying degrees according to race, education level, location and socioeconomic status, not to mention [access to timely health care](#), according to a [Stanford news release](#).

[Published in Nature Medicine](#), the study analyzed exposure to air pollution and susceptibility to its harms. Results showed that not only are Black Americans exposed to greater amounts of air pollution, but they are also significantly more likely to die of causes related to air pollution compared with other groups. Black Americans are also more susceptible to adverse health effects due to societal disadvantages.

For example, researchers found that Black Americans had greater exposure to air pollution because of factors such as poverty, more hazardous jobs, existing medical conditions and lack of access to health care and housing.

“We see differences across all factors that we examine, such as education, geography and social vulnerability, but what is striking is that the differences between racial-ethnic groups—partially due to our methodology—are substantially larger than for all of these other factors,” said lead study author Pascal Geldsetzer, MD, PhD, an assistant professor of medicine at Stanford.

For the study, researchers focused on fine particulate matter known as PM2.5 because it includes particles less than 2.5 micrometers in diameter, which are small enough to enter the bloodstream and impact vital organs.

PM2.5 exposure has been linked to [asthma](#) and other lung conditions. What's more, exposure to these fine particles can lead to [heart disease](#), [dementia](#), [stroke](#) or [cancer](#) in the long term.

Using existing county-level data on mortality and data on PM2.5 air pollution from 1990 to 2016, researchers looked at how varying levels of PM2.5 affect mortality in people of different races, education, location and socioeconomic status.

In 1990, the mortality rate for Black Americans attributable to PM2.5 exposure was 350 deaths per 100,000 people compared with less than 100 deaths per 100,000 people of other races. By 2016, this rate had decreased for all groups.

While Black Americans experienced the largest decline (to about 50 deaths per 100,000 people), they still had the highest mortality among all groups, according to the release. Furthermore, in about 96% of the counties analyzed, Black folks had the highest PM2.5-attributable mortality.

"Air pollution is increasingly being recognized in public health as a cause of adverse health consequences that's larger than people initially thought," Geldsetzer said.

Researchers encourage taking action to reduce air pollution as much as possible to address these [disparities](#).