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## Change you can breathe in: Cleaner air has added 5 months to Americans' lives, study finds

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LOS ANGELES (AP) — Cleaner air over the past two decades has added nearly five months to average life expectancy in the United States, according to a federally funded study.

Researchers said it is the first study to show that reducing air pollution translates into longer lives.

Between 1978 and 2001, Americans' average life span increased almost three years to 77, and as much as 4.8 months of that can be attributed to cleaner air, researchers from Brigham Young University and Harvard School of Public Health reported in Thursday's New England Journal of Medicine.

Some experts not connected with the study called the gain dramatic.

"It shows that our efforts as a country to control air pollution have been well worth the expense," said Dr. Joel Kaufman, a University of Washington expert on environmental health.

Scientists have long known that the grit in polluted air, or particulates, can lodge deep in the lungs and raise the risk of lung disease, heart attacks and strokes. The grit — made of dust, soot and various chemicals — comes from factories, power plants and diesel-powered vehicles.

In 1970, Congress passed a revised Clean Air Act that gave the Environmental Protection Agency the power to set and enforce national standards to protect people from particulate matter, carbon monoxide and other pollutants.

The law is widely credited with improving the nation's air quality through such things as catalytic converters on cars and scrubbers at new factories.

For the study, scientists used government data to track particulate pollution levels over two decades in 51 U.S. cities. They compared these changes to life expectancies calculated from death records and census data. They adjusted the results to take into account other things that might affect life expectancy, such as smoking habits, income, education and migration.

On average, particulate matter levels fell from 21 micrograms per cubic meter of air to 14



micrograms per cubic meter in the cities studied. At the same time, Americans lived an average 2.72 years longer.

"We saw that communities that had larger reductions in air pollution on average had larger increases in life expectancies," said the study's lead author, C. Arden Pope III, a Brigham Young epidemiologist.

Pittsburgh and Buffalo, N.Y., which made the most progress cleaning up their air, saw life spans increase by about 10 months. Los Angeles, Indianapolis and St. Louis were among the cities that saw gains in life expectancy of around five months.

The study was partly funded by the Centers for Disease Control and Prevention and EPA.

"This finding provides direct confirmation of the population health benefits of mitigating air pollution," Daniel Krewski, who does pollution research at the University of Ottawa in Canada, wrote in an accompanying editorial.

In a statement, the EPA said such studies provide critical information that can help the agency set standards on particulates. EPA data show that average particulate levels nationally have fallen 11 percent since 2000.

Last year, government researchers reported that U.S. life expectancy has surpassed 78 years for the first time. They attributed the increase to falling mortality rates for nine of the 15 leading causes of death, including heart disease, cancer, accidents and diabetes.

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