

# Ozone levels have sizeable impact on worker productivity

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Researchers in the Department of Health Policy and Management at Columbia's Mailman School of Public Health assessed the impact of pollution on agricultural worker productivity using daily variations in ozone levels. Their results show that ozone, even at levels below current air-quality standards in most parts of the world, has significant negative impacts on worker productivity. Their findings suggest that environmental protection is important for promoting economic growth and investing in human capital in contrast to its common portrayal as a tax on producers. Results of the study are published in the *American Economic Review*.

[Ozone pollution](#) continues to be a pervasive global issue with much debate over optimal levels. While policy makers routinely note that regulating ozone smog leads to many health benefits like reduced hospitalizations and mortality rates, Matthew Neidell, PhD, associate professor at the Mailman School and principal investigator, set out to investigate whether lower air pollution might also affect job performance. Until this research, there had been no systematic evidence on the direct impact of pollution on [worker productivity](#).

The researchers found that a 10 ppb (parts per billion) change in average [ozone exposure](#) results in a significant 5.5 percent change in agricultural worker productivity. "These estimates are particularly noteworthy as the U.S. EPA is currently moving in the direction of reducing federal ground-level ozone standards," said Dr. Neidell, PhD. This past September President Obama said he would not support a proposal by the

Environmental Protection Agency to tighten the federal ozone standard because it would pose too heavy a burden on businesses, which stunned public health experts and environmentalists.

Dr. Neidell also points out that in developing countries where environmental regulations are less strict and agriculture plays a more dominant role in the economy, the effects reported here may have a vast detrimental impact on a country's prosperity.

Provided by Columbia University's Mailman School of Public Health

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