



Changes in global surface ozone and health implications over the past decades

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Ambient near-surface ozone pollution threatens public health. Over the past decades, the world has seen complex ozone changes across the globe, with important implications for public health. Previous studies have estimated premature mortality attributable to ozone exposure in more recent years, yet a historical assessment of the health impacts of ozone is largely lacking. Contrary to controlling many other air pollutants endangering public health, reducing ozone pollution is complicated by its nonlinear chemistry and complex relationship with precursor emissions. A historical evaluation is crucial to understanding the long-term changes in surface ozone concentration, driving factors, and health implications. This study uses chemical transport model simulations, ground measurements, and pollution-health response models to estimate the ozone changes over the past few decades, their health impacts, and the effectiveness of precursor emission control. Our results will help improve the ozone mitigation strategies on the global scale.