

# Airport-Related Air Pollution and Noise

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## Abstract:

To provide quantitative evidence of the impact on people of a neighboring metropolitan airport, La Guardia Airport (LGA) in New York City, (1) airborne particulate matter (PM) was measured to determine whether concentration differences could be detected between homes that are upwind and downwind of the airport; (2) 24-hr noise measurements were made in 12 homes near the airport; and (3) the impact of noise was assessed by a Community Wellness and Health Promotion Survey. Particulate matter concentrations were higher during active airport operating hours than during nonoperating hours, and the percent increase varied inversely with distance from the airport. Hourly differences between paired upwind and downwind sites were not remarkable. Residents living near the airport were exposed to noise levels as much as four times greater than those experienced by residents in a quiet, comparison home. Impulse noise events were detected from both aircraft and vehicular traffic. More than 55% of the people living within the flight path were bothered by aircraft noise, and 63% by highway noise; these were significantly higher percentages than for residents in the nonflight area. The change in PM concentrations with distance during operating compared with nonoperating hours; traffic-related impulse noise events; and the elevated annoyance with highway noise, as well as aircraft noise among residents in the flight path area, show airport-related motor vehicle traffic to be a major contributor to the negative impact of airports on people in the surrounding communities.

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