

EFFECTS OF AIR POLLUTION ON HEALTH

Alhambra



BACKGROUND

Studies have shown that poor air quality has a significant effect on health and results in higher rates of mortality, hospital admissions, and chronic conditions.¹ Sources of pollution include ground-level ozone, nitric oxide emissions, and particulate matter in the air. These originate from motor vehicles, combustion of fossil fuels from stationary sources (e.g., heating, power generation), industrial facilities, and oil and gas wells.

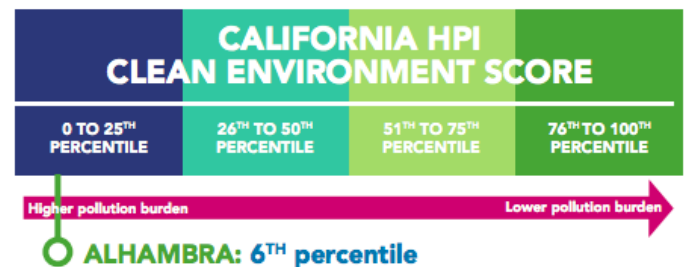
CHALLENGES

- Los Angeles's metropolitan area currently has the worst ozone pollution in the U.S., as it has for 20 of the 21-year history of the American Lung Association's "State of the Air" report²
- According to real-time air quality forecasts, LA County's PM 2.5 levels typically range from 50-150. On the Air Quality Index, 50-100 indicates that there is a moderate health concern for those who are especially sensitive, such as children with asthma. 100-150 indicates a higher risk for these groups.
- Close proximity, especially within 0.2-0.3 miles, to freeways are linked with health issues such as cancer, impaired lung function, asthma attacks, heart attacks, and premature death. Alhambra is located near the 10 and 710 Freeways.^{3,4}
- Climate change poses a profound public health risk and makes it more difficult to clean up pollutants

FACTS AND FIGURES

AT-RISK POPULATIONS IN ALHAMBRA:

- 31% of the population is made up of the age groups most susceptible to negative effects of air pollution:⁵
 - 85,168 total residents
 - 65 or older: 14,224 residents (17% of population)
 - 15 or younger: 12,107 residents (14% of population)



California Environmental Protection Agency, CalEnviroScreen 3.0, 2005 – 2015

1. Solomon, Paul A., et al. Air pollution and health: bridging the gap from sources to health outcomes: conference summary, 2012. *Air Quality, Atmosphere & Health*. 5.1: 9-62.

2. State of the Air, 2020. *American Lung Association*, pg. 5. (<http://www.stateoftheair.org/assets/SOTA-2020.pdf>)

3. Solomon, Paul A., et al. Air pollution and health: bridging the gap from sources to health outcomes: conference summary, 2012. *Air Quality, Atmosphere & Health*. 5.1: 9-62.

4. Living Near Highways and Air Pollution, 2020. *American Lung Association*. (<https://www.lung.org/clean-air/outdoors/who-is-at-risk/highways>)

5. City and Community Health Profiles: Alhambra, 2018. *Los Angeles County Department of Public Health*. (<http://publichealth.lacounty.gov/ohae/docs/cchp/pdf/2018/Alhambra.pdf>)

HEALTH CONSEQUENCES

Effects on elderly populations⁶

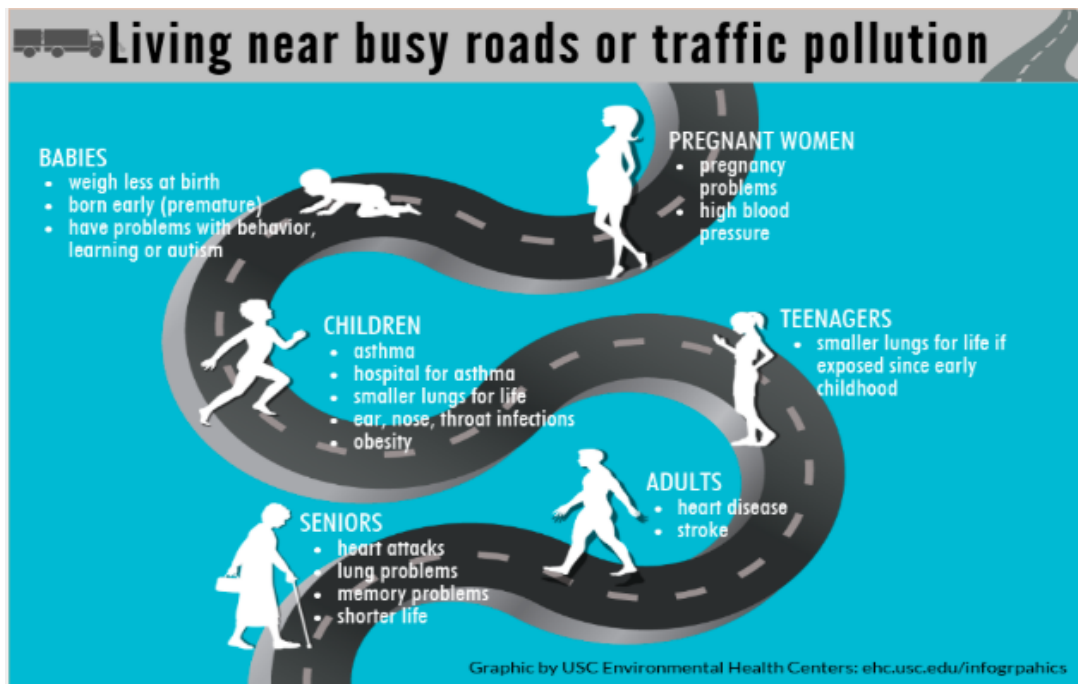
- Immediate breathing problems (e.g., shortness of breath, wheezing and coughing)
- Increased risk of respiratory damage (e.g., chronic obstructive pulmonary disease) and cardiovascular harm (e.g., strokes, congestive heart failure, heart attacks)
- Risk of premature death

Effects on child/adolescent populations⁷

- Increased risk of lower birth weight and infant mortality
- Increased rates of hospitalization for asthma attacks for children living near roads with heavy traffic
- Higher likelihood of hay fever and respiratory allergies in children
- Slowed lung function growth in children and teenagers, as well as increased likelihood of asthma development in children under 14 years

Health effects of PM 2.5

- Particles may travel deeply into the respiratory tract, irritating throat and lungs
 - **Short-term impact:** coughing, headache, nasal congestion, shortness of breath⁸
 - **Long-term impact:** reduced lung function, development of chronic conditions (e.g., asthma, heart disease), development of chronic bronchitis, increased mortality from lung cancer and heart disease⁹



6. State of the Air, 2020. American Lung Association, pp. 41-42. (<http://www.stateoftheair.org/assets/SOTA-2020.pdf>)

7. Ibid.

8. Mabahwi, Nurul Ashikin Bte, Oliver Ling Hoon Leh, and Dasimah Omar. Human health and wellbeing: Human health effect of air pollution, 2014. Procedia-Social and Behavioral Sciences. 153: 221-229.

9. Ibid.