

# Impact of Outdoor Air Pollution on Child Health and Well-Being

## Health and Policy Context

\_\_\_\_\_, including outdoor \_\_\_\_\_, can be important contributors to health. Exposure to poor outdoor air quality (i.e., air pollution) poses a substantial \_\_\_\_\_ to children and families. Outdoor \_\_\_\_\_ includes particle pollution (i.e., smoke or particulate matter) and ground-level ozone (i.e., smog).<sup>1</sup>

Children are at a \_\_\_\_\_ of negative \_\_\_\_\_ caused by outdoor air pollution since their organs are still developing, and they have higher \_\_\_\_\_. Negative \_\_\_\_\_ caused by exposure to air pollution can include, but are not limited to, adverse \_\_\_\_\_, \_\_\_\_\_, and other behavioral and \_\_\_\_\_. Exposure to air pollution in childhood can also impact the risk of \_\_\_\_\_.

## In Utero Exposure to Outdoor Air Pollution

Studies demonstrate an association between exposure to air pollutants during pregnancy and adverse birth outcomes, including \_\_\_\_\_, \_\_\_\_\_, which can \_\_\_\_\_ rates of \_\_\_\_\_, and cardio-respiratory abnormalities, such as chronic lung disease of prematurity. Preterm birth and low birth weight are also associated with \_\_\_\_\_ and mortality and increased morbidity in adulthood. Moreover, exposure to air pollution during the prenatal period can impair \_\_\_\_\_ and organ development and is associated with childhood \_\_\_\_\_ and other childhood respiratory symptoms. Exposure to air pollution during pregnancy can also increase risk of \_\_\_\_\_.

## Asthma and Allergic Diseases

Studies have demonstrated an association between air pollution and \_\_\_\_\_, including:

- **Asthma.** Exposure to air pollution can increase the risk of \_\_\_\_\_ and worsen \_\_\_\_\_. Specifically, exposure to air pollution can \_\_\_\_\_ the risk of asthma-related hospitalization, length of hospital stays, and rates of medication use, which can result in children missing \_\_\_\_\_ and parents/caretakers missing work.
- **Seasonal Allergies.** Seasonal \_\_\_\_\_, triggered by environmental allergens like pollen, may be worsened by \_\_\_\_\_, as air pollution can make pollen more \_\_\_\_\_ (i.e., higher capacity to trigger allergies).

### Marginalized Communities Are More Likely to Be Exposed to Outdoor Air Pollution and Other Cumulative Environmental Stressors

Various studies conclude that \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_, who are more likely to live \_\_\_\_\_ to traffic or facilities that produce pollutants (e.g., factories), are disproportionately exposed to outdoor air pollution. Moreover, some marginalized \_\_\_\_\_ may be disproportionately exposed to \_\_\_\_\_ and/or \_\_\_\_\_ social and environmental stressors (e.g., substandard housing conditions and extreme heat, limited safe greenspace access; and air pollution) over their lifetime, which compound to negatively impact health and well-being and exacerbate health disparities.<sup>4</sup>

## Other Respiratory Issues

\_\_\_\_\_ and \_\_\_\_\_ exposure to outdoor air pollution is associated with an increased risk for childhood respiratory issues, including:

- **Impaired Lung Growth and Function.** Prenatal exposure to air pollutants can impact \_\_\_\_\_ in children, which can in turn contribute to poor respiratory outcomes into adulthood. Furthermore, another \_\_\_\_\_ shows that exposure to air pollution during pregnancy and early life is associated with reduced lung function in mid-childhood.
- **Respiratory Infections.** Exposure to air pollution during childhood can also increase risk for \_\_\_\_\_, including bronchitis and \_\_\_\_\_, \_\_\_\_\_, and others.

## Behavior and Development

\_\_\_\_\_ suggests exposure to outdoor air pollution in utero or during \_\_\_\_\_ can impact brain development and \_\_\_\_\_. Specifically, one \_\_\_\_\_ demonstrates the relationship between exposure to air pollution and neurological development, including an increased risk of developmental disorders like attention-deficit/hyperactivity disorders or autism spectrum disorders. Another \_\_\_\_\_ shows children ages 2 to 4 who were exposed to air pollution were at a higher risk of worse behavioral function and cognitive performance.

