

Climate Change is Exacerbating Extreme Heat and Air Quality Concerns for California's Children

July 2023 was the hottest month ever recorded, as climate change continues to increase the intensity and frequency of heatwaves. These extreme temperatures pose a risk for heat-related illnesses and ecological damage, while also increasing air pollution and the risk of developing asthma. Asthma is the most common chronic disease of American children and the leading cause of pediatric emergency department visits, hospitalizations, and school absenteeism.

As temperatures rise, warmer air increases the formation of ground-level ozone—“smog”—which is a harmful air pollutant. Wildfires, which produce smoke containing particle pollution that cause asthma attacks and increase hospitalizations and ED visits for children, are also more likely. California is no stranger to wildfires, which will become more frequent and intense due to climate change, with repercussions for pregnant individuals at risk of preterm birth and children whose immune systems,

neurodevelopment, and breathing may be compromised. Schools, where students spend the most time second to their homes, are not equipped with the HVAC systems to ventilate the air, and student learning time is lost when schools have to close due to “smoke days.”

While air pollution can spread across wide regions and climate change-related natural disasters can impact any community, not all effects are felt equally. In a phenomenon known as the urban heat island effect, children living in cities are often exposed to higher temperatures, more pollution, and heat-trapping asphalt than those who live in surrounding areas.

Student health and learning are at risk with increasing temperatures and extreme heat events, which disproportionately affects low-income and communities of color, as these schools are less likely to have A/C. A full 5 percent of the gap in test scores between Black and Hispanic students and their White counterparts can be attributed to disproportionate exposure to excessively hot classrooms.

Extreme Heat and Air Quality Disparities in California At-a-Glance

- In nearly every major U.S. city, children of color are exposed to [more urban heat](#) than their white peers.
- [African American, American Indian/Alaska Native, and Latinx Californians have the highest lifetime asthma prevalence rates in part because of environmental racism](#) that concentrates highways, industrial plants, toxic chemicals, neglected soil, corroded plumbing, and pesticide use in communities of color.
- [Cumulative heat exposure decreases learning potential](#)—on average, without school air conditioning, a one degree hotter school year reduces learning by one percent for all students, and three percent for Black and Hispanic students.
- [Green spaces—which mitigate the effects of air pollution and global warming—in communities of color are half the size and five times more crowded](#) than green spaces in white communities; more than half of Los Angeles County is considered “park poor,” with [82% of these areas located in communities of color](#).

What can be done?

Local officials in counties already plagued by poor air quality should focus on improving ventilation and filtration systems in schools and homes, planting trees and adding shade cover in schools, encouraging public education around use and access to air purifiers, and discouraging the use of gas stoves and other appliances and products that contribute to indoor air pollutants, especially during these high pollution

events. California should invest in policies that make it easier for schools in low-wealth communities to access the capital they need to take on these large facility investments. And, we need policies and practices in place to ensure that the communities most vulnerable to extreme heat with the oldest and least-advanced school facilities get priority access to the funding and resources they need to install energy-efficient HVAC systems, trees, and shade.

Healthy housing policies that reduce indoor pollutants and increase thermal comfort in rental housing are crucial for reducing climate-driven health disparities in children. For example, California should continue to invest in Asthma Home Visiting Services, especially for vulnerable communities whose housing may have asthma triggers.

Simultaneously, the State must do more to substantially reduce greenhouse gas emissions while investing in adaptation and resilience. Policies and funding such as [SB 867](#), a potential 2024 Climate Resilience Bond, should focus on reducing heat and air quality inequities and assisting California residents with the fewest resources. Power systems should avoid rolling blackouts in vulnerable communities and ensure that there are multiple, easily accessible community [resilience hubs](#) with air-conditioned spaces, clean air, and culturally competent programs and social services for families. Policies like [SB 394](#), a potential bill to begin a master planning process for climate resilient schools, would support schools in being these resilience hubs so that students have access to safe and comfortable temperatures and air quality and can continue to learn no matter the weather.

Learn More:

Research:

- [American Academy of Pediatrics- Environmental Health](#)
- [Regional Asthma Management & Prevention](#)
- [Climate-Resilient California Schools from the Climate Ready Schools Coalition and Stanford Medicine](#)

Data and Resources:

- [CalEnviroScreen 4.0](#)
- [Tracking California](#)
- [SmokeReadyCA](#)
- [Health, Wildfires and Climate Change in California](#)
- [Statewide Equity and Pollution-Burden Analysis](#)

[HR 123 \(Reyes\)](#) recognized October as Children’s Environmental Health Month, and in order to raise policymaker awareness of the environmental issues threatening children’s health in California, this document was prepared as part of a legislative briefing in 2023 co-sponsored by: Children Now; Environmental Working Group; Families Advocating for Pesticide and Toxic Chemicals; Regional Asthma Management & Prevention; and Undaunted K12

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