

Pesticides: their inequities and harms to children's health

An introduction to pesticides

- Pesticides are chemical products derived from fossil fuels that kill pests and diseases, such as weeds, insects, rodents and soil-borne diseases
- About 200 million pounds of pesticides are applied per year in California¹ – 4.5 times the national average²
- Pesticides are predominantly used in agriculture³, and are also used in urban areas, including in nearly 75% of US households⁴

Pesticide exposure threatens children's health

- Children's developing brains and bodies are particularly vulnerable to the health impacts of pesticides⁵
- Pesticides exposure has been linked to a wide range of illnesses and diseases in children, including but not limited to: brain tumors and other cancers^{6, 7}, autism⁸, birth defects⁹, and respiratory disease¹⁰
- Rural children are particularly at risk; they experience not only pesticide exposure from residues on food and applications in schools, parks and homes, but they also face exposure when pesticides contaminate water supplies or drift from nearby agricultural fields¹¹

Pesticide exposure is a racial injustice

- Research using CalEPA data found that pesticides are one of the top two pollutants in California with the greatest racial and ethnic disparities¹²
- Pesticide health impacts disproportionately affect farmworkers and their families, the majority of whom are Mexican immigrants¹³
- A 2014 Department of Public Health study found that Latinx children are 91% more likely than white children to attend a school near high pesticide use¹⁴
- Rural Latinx children can also experience socioeconomic stressors that exacerbate health harms from pesticides¹⁵

Recommendations

- Fix and expand the Department of Pesticide Regulation's (DPR's) schools' regulation
 - DPR began mandating 25 feet to a quarter-mile pesticide buffer zone around schools in 2017. However, the regulation is mostly unenforceable because of a lack of necessary information in farmers' pesticide use reports. DPR must immediately fix this regulation and expand the buffer zones
- Implement AB 652 (Lee), which would establish an environmental justice advisory committee at DPR, to create structural accountability at DPR to the families that are the most impacted by pesticide exposure
- Adopt meaningful state-wide targets to reduce pesticide use and toxicity – such as mirroring the EU's target to reduce pesticide use and toxicity by 50% by 2030
- Implement DPR's Sustainable Pest Management Roadmap
- Increase technical assistance and incentives to farmers to adopt diversified agroecological practices that do not rely on hazardous agrochemicals like pesticides

¹ California Department of Pesticide Regulation. (2023). Pesticide Use Reporting (PUR). <https://www.cdpr.ca.gov/docs/pur/purmain.htm>.

² Ferguson, R., Dahl, K., & DeLonge, M. (2019). Farmworkers at Risk: The Growing Dangers of Pesticides and Heat. Union of Concerned Scientists. <https://www.ucsusa.org/resources/farmworkers-at-risk>.

³ Donley, N., Bullard, R. D., Economos, J., Figueroa, I., Lee, J., Liebman, A. K., ... & Shafiei, F. (2022). Pesticides and environmental injustice in the USA: root causes, current regulatory reinforcement and a path forward. *BMC Public Health*, 22(1), 1-23.

⁴ U.S. Environmental Protection Agency. (2010). Pesticides. www.epa.gov/pesticides.

⁵ Liu, J., & Schelar, E. (2012). Pesticide exposure and child neurodevelopment: summary and implications. *Workplace health & safety*, 60(5), 235-242.

⁶ Lombardi, C., Thompson, S., Ritz, B., Cockburn, M., & Heck, J. E. (2021). Residential proximity to pesticide application as a risk factor for childhood central nervous system tumors. *Environmental research*, 197, 111078.

⁷ Park, A. S., Ritz, B., Yu, F., Cockburn, M., & Heck, J. E. (2020). Prenatal pesticide exposure and childhood leukemia—a California statewide case-control study. *International journal of hygiene and environmental health*, 226, 113486.

⁸ von Ehrenstein, O. S., Ling, C., Cui, X., Cockburn, M., Park, A. S., Yu, F., ... & Ritz, B. (2019). Prenatal and infant exposure to ambient pesticides and autism spectrum disorder in children: population based case-control study. *bmj*, 364.

⁹ Calvert, G. M., Alarcon, W. A., Chelminski, A., Crowley, M. S., Barrett, R., Correa, A., ... & Evans, E. (2007). Case report: three farmworkers who gave birth to infants with birth defects closely grouped in time and place—Florida and North Carolina, 2004–2005. *Environmental Health Perspectives*, 115(5), 787-791.

¹⁰ Raanan, R., Harley, K. G., Balmes, J. R., Bradman, A., Lipsett, M., & Eskenazi, B. (2015). Early-life exposure to organophosphate pesticides and pediatric respiratory symptoms in the CHAMACOS cohort. *Environmental health perspectives*, 123(2), 179-185.

¹¹ Marquez, E. & Schafer, K. (2016). Kids on the Frontline. Pesticide Action Network North America. <https://www.panna.org/wp-content/uploads/2016/04/KOF-report-final.pdf>.

¹² Cushing, L., Faust, J., August, L. M., Cendak, R., Wieland, W., & Alexeeff, G. (2015). Racial/ethnic disparities in cumulative environmental health impacts in California: evidence from a statewide environmental justice screening tool (CalEnviroScreen 1.1). *American journal of public health*, 105(11), 2341-2348.

¹³ Donley, N., Bullard, R. D., Economos, J., Figueroa, I., Lee, J., Liebman, A. K., ... & Shafiei, F. (2022). Pesticides and environmental injustice in the USA: root causes, current regulatory reinforcement and a path forward. *BMC Public Health*, 22(1), 1-23.

¹⁴ The California Department of Public Health and the Public Health Institute. (2014). Agricultural Pesticide Use Near Public Schools in California. <https://www.phi.org/thought-leadership/agricultural-pesticide-use-near-public-schools-in-california/>.

¹⁵ U.S. Environmental Protection Agency. (2008). Concepts, Methods and Data Sources for Cumulative Health Risk Assessment of Multiple Chemicals, Exposures and Effects: A Resource Document. <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=190187>.