

FACT SHEET

EPA MUST FINALIZE BAN OF TOXIC PESTICIDE CHLORPYRIFOS TO PROTECT CHILDREN'S HEALTH

The health of children must not be put at risk from eating fruits and vegetables or drinking tap water.

KEY FACTS

- **Chlorpyrifos (“klor-PEER-a-foss”) is a toxic pesticide that poses serious threats to children’s health.** Even low-level exposure during pregnancy may increase risk of lifelong impairments such as learning disabilities, attention problems, and lowered IQ in children.
- **A ban is needed to protect our food and drinking water.** In November 2016, EPA found that (1) chlorpyrifos contaminates the national food supply at levels that threaten children’s health; (2) there is no safe level of chlorpyrifos in drinking water; and (3) the greatest risks are to agricultural communities and workers confronted with contaminated fields, air, and dust in addition to water and food.
- **To protect our nation’s families, the EPA proposed a ban on all agricultural uses of chlorpyrifos in October 2015 and confirmed the urgency of a ban in November 2016.** The agency was under a court order to take final action to address the safety of chlorpyrifos by March 31, 2017.
- **EPA scientists have already found that chlorpyrifos is not safe. Yet Administrator Scott Pruitt announced on March 29, 2017, that he was reversing course and would not finalize the ban, in direct contradiction of the EPA’s conclusions.** Pruitt wants further study until 2022, and chlorpyrifos use would continue during this period.

Chlorpyrifos is an organophosphate insecticide. Widespread use in agriculture has led to extensive water contamination and toxic residues on fruits and vegetables.¹ Because of risks to children’s health, the EPA banned household use in 2000, but more than five million pounds of the insecticide are applied annually across the United States to a variety of crops including apples, oranges, broccoli, berries, and tree nuts.²

Testing finds evidence of chlorpyrifos in the bodies of U.S. women and children, and studies show that levels are linked with eating conventionally grown fruits and vegetables.^{3,4} Early-life exposure to chlorpyrifos is troubling because the developing brain is highly susceptible to neurotoxic effects, which appear to be irreversible.⁵ Of particular concern are prenatal exposures, which are linked to lower IQ levels and reduced memory function in children.^{6,7}

THE EPA’S REVIEW FINDS THAT CHLORPYRIFOS IS DANGEROUS AND NEEDS TO BE BANNED

The EPA’s November 2016 assessment of chlorpyrifos found that multiple studies link low-level exposures during pre-natal development and early childhood to disrupted brain development—leading to long-term mental and motor delays, lower IQ, poorer memory, and learning disabilities, as well as behavioral problems like attention deficit hyperactivity disorder (ADHD).^{8,9,10} The EPA further found that using chlorpyrifos on food crops results in unsafe exposures through contaminated food and drinking water.¹¹ The assessment showed that agricultural communities face the greatest risks due to worker exposure and air contamination.¹² The EPA’s economic analysis indicates that there are readily available, feasible alternatives for most chlorpyrifos uses.¹³

Unsafe chlorpyrifos residues contaminate the food supply

The EPA found that chlorpyrifos residues on food, including fruits and vegetables, are harmful when exposures take place during early life development, making exposure to pregnant women and children unsafe.¹⁴ As shown in Figure 1, the EPA’s analysis found residue exposures far above the threshold level of concern for harming health—in some cases, up to 140 times the threshold, an exceedance of 14,000 percent! This analysis clearly shows that a chlorpyrifos ban is essential to make the food supply safe for pregnant women and kids.

Some of children’s favorite fruits are widely contaminated by chlorpyrifos residue, as illustrated in Table 1.

The EPA concludes there are no safe levels of chlorpyrifos in drinking water¹⁸

Chlorpyrifos enters water supplies primarily through spray drift and field runoff that flows into groundwater and surface waters, threatening drinking water across all 50 states.¹⁹

For more information, please contact:

Jennifer Sass
jsass@nrdc.org
<https://www.nrdc.org/experts/jennifer-sass>

www.nrdc.org/policy
www.facebook.com/nrdc.org
www.twitter.com/nrdc

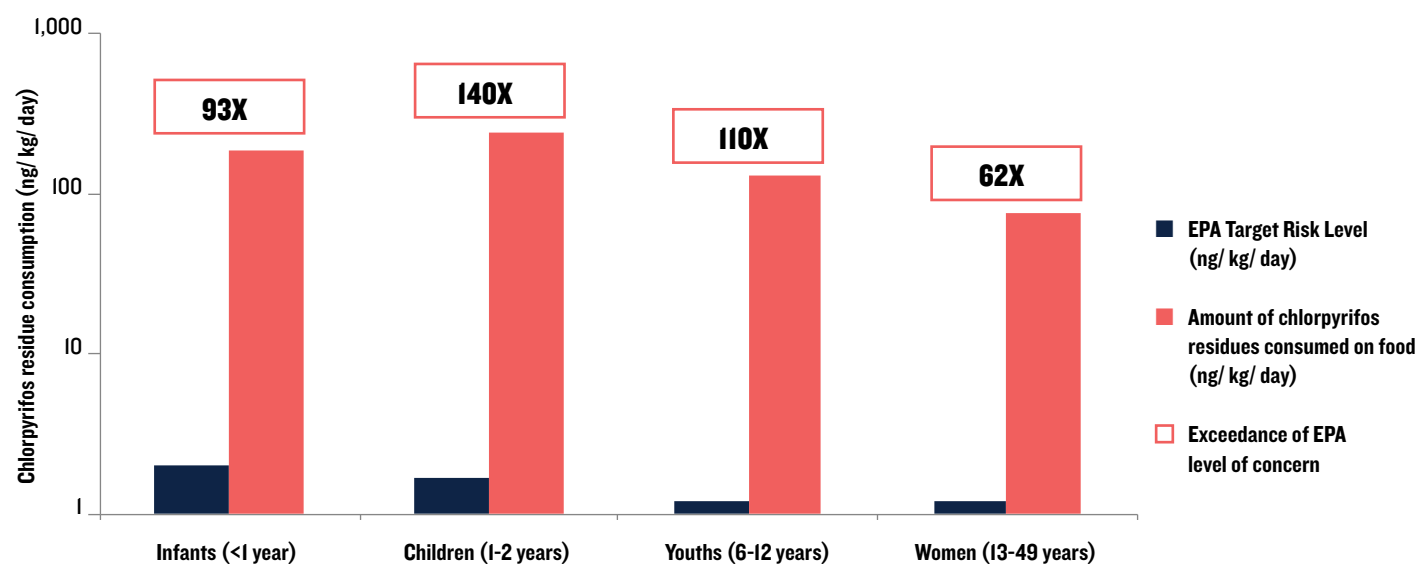
TABLE I: POPULAR FRUITS CONTAMINATED BY CHLORPYRIFOS		
Fruit	Chlorpyrifos residue detected (USDA testing)	Percent of U.S. crop treated with chlorpyrifos (EPA analysis)
Apples	Yes	55%
Peaches/Nectarines	Yes	25%/10%
Citrus	Yes	Oranges: 20%
Berries	Yes	Strawberries: 20%
Grapes	Yes	10%
Melons	Yes	<2.5%

Fruits commonly consumed by children, detection of chlorpyrifos residues by the U.S. Department of Agriculture (USDA) Pesticide Data Program testing on ready-to-eat fruit (i.e., peeled as needed), and the percent of the U.S. crop treated with chlorpyrifos.^{16,17}

TOXIC RESIDUES = WIDESPREAD HEALTH RISKS FROM FOOD AND WATER

Given the EPA's findings that chlorpyrifos is not safe, U.S. pesticide laws including the Food Quality Protection Act do not allow its continued use. To protect families, the EPA must move forward and finalize the proposed ban. We also urgently need action from states and businesses to support healthier farming practices.

FIGURE I: THE EPA LEVEL OF CONCERN FOR CHLORPYRIFOS RESIDUE CONSUMPTION, COMPARED WITH AMOUNTS OF CHLORPYRIFOS RESIDUE CONSUMED ON FOOD, IN NANOGRAMS PER KILOGRAM OF BODY WEIGHT PER DAY FOR INFANTS, CHILDREN, YOUTHS, AND WOMEN.¹⁵



ENDNOTES

- 1 U.S. Environmental Protection Agency (hereinafter EPA), "Chlorpyrifos: Revised Human Health Risk Assessment for Registration Review," 2016, <https://www.regulations.gov/document?D=EPA-HQ-OPP-2015-0653-0454>.
- 2 EPA, "Chlorpyrifos: Ingredients Used in Pesticide Products," 2016, <https://www.epa.gov/ingredients-used-pesticide-products/chlorpyrifos>.
- 3 Centers for Disease Control and Prevention, *Fourth National Report on Human Exposure to Environmental Chemicals: Updated Tables*, vol. 1, January 2017, https://www.cdc.gov/biomonitoring/pdf/FourthReport_UpdatedTables_Volume1_Jan2017.pdf.
- 4 Lu, C., et al., "Dietary Intake and Its Contribution to Longitudinal Organophosphorus Pesticide Exposure in Urban/Suburban Children," *Environ Health Perspect* 116, no. 4 (2008):537-542, doi:10.1289/ehp.10912.
- 5 Rauh, V.A., et al., "Prenatal Exposure to the Organophosphate Pesticide Chlorpyrifos and Childhood Tremor," *Neurotoxicology* 51 (December 2015):80-86, doi:10.1016/j.neuro.2015.09.004.
- 6 Bouchard, M.F., et al., "Prenatal Exposure to Organophosphate Pesticides and IQ in 7-Year Old Children," *Environ Health Perspect* 119, no. 8 (August 2011):1189-95, doi:10.1289/ehp.1003185.
- 7 Rauh, V., et al., "Seven-Year Neurodevelopmental Scores and Prenatal Exposure to Chlorpyrifos, a Common Agricultural Pesticide," *Environ Health Perspect* 119, no. 8 (August 2011):1196-1201, doi:10.1289/ehp.1003160.
- 8 Rauh, V.A., et al., "Impact of Prenatal Chlorpyrifos Exposure on Neurodevelopment in the First 3 Years of Life Among Inner-City Children," *Pediatrics* 118, no. 6 (2006):e1845-59, doi:10.1542/peds.2006-0338.
- 9 Bouchard, M.F., et al., "Prenatal Exposure to Organophosphate Pesticides."
- 10 Rauh, V.A. et al., "Brain Anomalies in Children Exposed Prenatally to a Common Organophosphate Pesticide," *Proceedings of the National Academy of Sciences of the United States of America* 109, no. 20 (2012):7871-7876, <http://www.ncbi.nlm.nih.gov/pubmed/22547821>.
- 11 EPA, "Chlorpyrifos: Revised Human Health Risk Assessment for Registration Review," 2016, <https://www.regulations.gov/document?D=EPA-HQ-OPP-2015-0653-0454>.
- 12 Ibid.
- 13 EPA, "Analysis of the Small Business Impacts of Revoking Chlorpyrifos Food Tolerances," 2015, <https://www.regulations.gov/document?D=EPA-HQ-OPP-2015-0653-0437>.
- 14 EPA, "Chlorpyrifos: Revised Human Health Risk Assessment."
- 15 Ibid. Steady-state (21-day) food-only exposure estimates (at 99.9th percentile).
- 16 Herrick, K.A., et al., "Fruit Consumption by Youth in the United States," *Pediatrics* 136, no. 4 (2015):664-671, doi:10.1542/peds.2015-1709.
- 17 EPA, "Chlorpyrifos: Acute and Steady-State Dietary (Food Only) Exposure Analysis to Support Registration Review," 2014, <https://www.regulations.gov/document?D=EPA-HQ-OPP-2008-0850-0197>.
- 18 EPA, "Chlorpyrifos: Refined Drinking Water Risk Assessment for Registration Review," 2016, <https://www.regulations.gov/document?D=EPA-HQ-OPP-2015-0653-0437>.
- 19 EPA, "Quality Criteria for Water," *Postharvest Biol Technol.* 8, no. 3 (1996):237-238, doi:10.1016/0925-5214(96)90008-3.