



June 27, 2017

Scott Pruitt  
Administrator  
Environmental Protection Agency  
1200 Pennsylvania Ave. NW  
Washington, DC 20460

Dear Administrator Pruitt:

The American Academy of Pediatrics is a nonprofit professional organization of 66,000 primary care pediatricians, pediatric medical specialists, and pediatric surgical specialists dedicated to the health, safety, and well-being of infants, children, adolescents, and young adults.

The Environmental Working Group is a nonprofit advocacy organization dedicated to protecting public health and the environment. EWG has a long history of advocating for safer chemical policies and reducing the use of dangerous pesticides like chlorpyrifos.

We are writing to express concern at the agency's recent reversal on its proposal to revoke tolerances for chlorpyrifos. In particular, we are deeply alarmed that the EPA's decision to allow the continued use of chlorpyrifos contradicts the agency's own science and puts developing fetuses, infants, children, and pregnant women at risk.

### **Children are Uniquely Vulnerable to Risks from Pesticides**

Children are not small adults – they have key neurological, physical, developmental, and behavioral differences from adults that make them uniquely vulnerable to chemical exposures. By size and weight, children drink more, breathe more, and have more skin surface area to body weight relative to adults, making their bodies more sensitive to pesticides and other chemicals. Their brains and nervous systems are still making connections and maturing, processes that are particularly sensitive to interference by pesticides. Children come into contact with pesticides daily through air, food, dust, and soil, and on surfaces through home and public lawn or garden application, household insecticide use, application to pests, and agricultural product residues.<sup>1</sup>

Epidemiologic studies associate pesticide exposure with adverse birth outcomes, including preterm birth, low birth weight, congenital abnormalities, pediatric cancers, neurobehavioral and cognitive deficits, and asthma. The evidence is especially strong linking certain pesticide

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<sup>1</sup> American Academy of Pediatrics, *Policy Statement: Pesticide Exposure in Children*, 130 Pediatrics e1757, e1757-58 (2012), <http://pediatrics.aappublications.org/content/pediatrics/130/6/e1757.full.pdf>

exposure with pediatric cancers and permanent neurological damage.<sup>2</sup> Some birth cohort studies of American children have found associations between pesticide exposure and neurobehavioral and cognitive defects like lower IQs, autism, and attention deficit disorders.<sup>3</sup>

### **Chlorpyrifos Poses Specific Risks to Children**

There is a wealth of science demonstrating the detrimental effects of chlorpyrifos exposure to developing fetuses, infants, children, and pregnant women. Like other organophosphate pesticides, chlorpyrifos interferes with enzymes in the nervous system. Symptoms in people acutely overexposed to chlorpyrifos can range from runny noses and drooling to nausea, vomiting, headaches, muscle cramps, and even loss of coordination. Severe poisoning can cause unconsciousness, convulsions, difficulty breathing, paralysis and death.<sup>4</sup>

Chronic chlorpyrifos exposure in utero is associated with changes in social behavior, brain development, and developmental delays.<sup>5</sup> A long-term Columbia University study following children born before and after a ban on in-home use of chlorpyrifos took effect found that the children born before the ban had much higher exposure levels, tended to be smaller, have poorer reflexes, and weigh less.<sup>6</sup> Toddlers with higher exposures were behind in both motor and mental development by age three. They were also greater than five times more likely to be on the autism spectrum, greater than six times more likely to have ADHD-type symptoms, and greater than 11 times more likely to have symptoms of other attention disorders.<sup>7</sup> The Columbia study<sup>8</sup> and similar long-term studies conducted at the University of California, Berkeley, and the Icahn School of Medicine at Mount Sinai in New York City<sup>9</sup> found lower IQs for children with prenatal chlorpyrifos exposure.

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<sup>2</sup> *Id.* at e1759-60.

<sup>3</sup> *Id.* at e1760.

<sup>4</sup> National Pesticide Information Center, Chlorpyrifos, <http://npic.orst.edu/factsheets/chlorpgen.html> (last visited April 13, 2017).

<sup>5</sup> *Id.*

<sup>6</sup> Virginia A. Rauh, ScD., Discussion of Analyses of Prenatal Chlorpyrifos Exposure and Neurodevelopmental Outcomes, Columbia School of Children's Environmental Health, <https://archive.epa.gov/scipoly/sap/meetings/web/pdf/rauh.pdf> (last accessed April 13, 2007).

<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

<sup>9</sup> University of California Berkeley, Center for the Health Assessment of Mothers and Children of Salinas (CHAMACOS), <http://cerch.berkeley.edu/research-programs/chamacos-study> (last visited April 13, 2017). *See also* Engel SM, Bradman A, Wolff MS, Rauh VA, Harley KG, Yang JH, Hoepner LA, Barr DB, Yolton K, Vedar MG, Xu Y, Hornung RW, Wetmur JG, Chen J, Holland NT, Perera FP, Whyatt RM, Lanphear BP, Eskenazi B. Prenatal Organophosphorus Pesticide Exposure and Child Neurodevelopment at 24 Months: An Analysis of Four Birth Cohorts. *Environ Health Perspect.* 2016 Jun;124(6):822-30. doi: 10.1289/ehp.1409474. Epub 2015 Sep 29. PubMed PMID: 26418669; PubMed Central PMCID: PMC4892910. *See also* Engel SM, Wetmur J, Chen J, Zhu C, Barr DB, Canfield RL, Wolff MS. Prenatal exposure to organophosphates, paraoxonase 1, and cognitive development in childhood. *Environ Health Perspect.* 2011 Aug;119(8):1182-8. doi: 10.1289/ehp.1003183. Epub 2011 Apr 21. PubMed PMID: 21507778; PubMed Central PMCID: PMC3237356.

Children face unique exposure risks. EPA estimates that children ages 1 to 12 are exposed to significantly more chlorpyrifos through their diets per pound of body weight than adults.<sup>10</sup> Chlorpyrifos is authorized for use on nearly 50 food crops, including fruits, vegetables, and nuts. In annual tests for pesticide residues on conventionally grown produce, the U.S. Department of Agriculture found chlorpyrifos on commonly eaten fruits and vegetables, including in especially high concentrations on fruits like peaches and nectarines.<sup>11</sup>

Even low residues of exposures to neurotoxic pesticides such as chlorpyrifos contribute to aggregate risks. EPA's own calculations suggest that babies, children and pregnant women all eat much more chlorpyrifos than is safe. EPA has estimated that median or "typical" exposures for babies are likely five times greater than its proposed "safe" intake, and 11 to 15 times higher for toddlers and older children. Pregnant women are also impacted – a typical exposure is five times higher than it ought to be to protect her developing fetus from harm.<sup>12</sup> EPA's 2016 Risk Assessment found that chlorpyrifos causes harm to children's brains from prenatal exposures, and that this harm occurs at levels far lower than EPA's acute poisoning regulatory endpoint.<sup>13</sup>

### **EPA's Decision Contradicts the Agency's Science**

The Food Quality Protection Act (FQPA) takes an explicitly precautionary approach to pesticide safety and children's health. Under the FQPA, EPA must revoke permitted pesticide residue levels, or tolerances, if it determines those levels are no longer safe. Safe under the FQPA means that "there is a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue, including all anticipated dietary exposures and other exposures for which there is reliable information."<sup>14</sup> Thus, while uncertainty about a pesticide's safety can be the basis for removing tolerances, it cannot be the basis for continuing use of that pesticide and potentially exposing people to risk.

Additionally, EPA is required under the provisions of FQPA to give special consideration to in-utero exposures, and to children and infants, particularly with regards to neurological differences from adults, when evaluating pesticide safety. For that reason, the FQPA requires EPA to apply an additional tenfold safety factor to account for data gaps and potential pre- or postnatal toxicity to children.<sup>15</sup>

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<sup>10</sup> U.S. Environmental Protection Administration, *Chlorpyrifos Acute and Steady State Dietary (Food Only) Exposure Analysis to Support Registration Review*, EPA-HQ-OPP-2008-0850-0197 (Nov. 18, 2014), <https://www.regulations.gov/document?D=EPA-HQ-OPP-2008-0850-0197>.

<sup>11</sup> U.S. Dep't of Agriculture, Agricultural Marketing Service, Pesticide Data Program, <https://www.ams.usda.gov/datasets/pdp> (last visited April 13, 2017).

<sup>12</sup> U.S. Environmental Protection Administration, *Chlorpyrifos Acute and Steady State Dietary (Food Only) Exposure Analysis to Support Registration Review*, EPA-HQ-OPP-2008-0850-0197 (Nov. 18, 2014), <https://www.regulations.gov/document?D=EPA-HQ-OPP-2008-0850-0197>.

<sup>13</sup> U.S. Environmental Protection Administration, *Chlorpyrifos: Revised Human Health Risk Assessment for Registration Review*, EPA-HQ-OPP-2015-0653-0454 (Nov. 3, 2016), <https://www.regulations.gov/document?D=EPA-HQ-OPP-2015-0653-0454>.

<sup>14</sup> 21 U.S.C. § 346a(b)(2)(A)(ii).

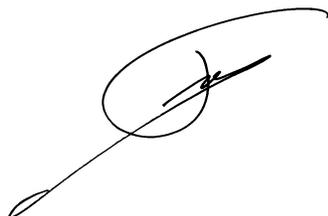
<sup>15</sup> 21 U.S.C. § 346a(b)(2)(C).

EPA has consistently found that chlorpyrifos is not safe, particularly in regard to in-utero exposure and exposures to children. In December 2014, EPA found unsafe drinking water contamination from chlorpyrifos as part of its risk assessment.<sup>16</sup> In October 2015, EPA proposed to revoke all tolerances because it could not determine that aggregate exposure to residues of chlorpyrifos were safe to children or the general population under the requirements of the FQPA.<sup>17</sup> In November 2016, EPA did yet another risk assessment using a more sensitive point of departure, determining the risks were even greater than previously thought and reiterating the need to revoke tolerances.<sup>18</sup>

We are deeply alarmed by EPA's decision not to finalize the proposed rule to end chlorpyrifos uses on food – a decision that was premised on the need for further study on the effects of chlorpyrifos on children before finalizing a rule. EPA's previous risk assessments and several consultations with EPA's Science Advisory Panel makes clear the potential for adverse health effects to children as a result of exposure to chlorpyrifos. The risk to infant and children's health and development is unambiguous. The clear statutory language of the FQPA requires that EPA revoke tolerances in the face of uncertainty. EPA has no new evidence indicating that chlorpyrifos exposures are safe. As a result, EPA has no basis to allow continued use of chlorpyrifos, and its insistence in doing so puts all children at risk.

We urge EPA to rely on the established science and to take action to revoke all tolerances for chlorpyrifos, as proposed in 2015. America's children today and in the future deserve and demand no less.

Sincerely,



Fernando Stein, MD, FAAP  
President  
American Academy of Pediatrics



Ken Cook  
President  
Environmental Working Group

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<sup>16</sup> U.S. Environmental Protection Administration, *Chlorpyrifos: Acute and Steady State Dietary (Food Only) Exposure Analysis to Support Registration Review*, EPA-HQ-OPP-2008-0850-0197 (Nov. 18, 2014), <https://www.regulations.gov/document?D=EPA-HQ-OPP-2008-0850-0197>.

<sup>17</sup> 80 Fed. Reg. 69,080, 69,081 (Nov. 6, 2015).

<sup>18</sup> U.S. Environmental Protection Administration, *Chlorpyrifos: Revised Human Health Risk Assessment for Registration Review*, EPA-HQ-OPP-2015-0653-0454 (Nov. 3, 2016), <https://www.regulations.gov/document?D=EPA-HQ-OPP-2015-0653-0454>.