



School Pesticide Monitor

A Bi-Monthly Bulletin on Pesticides and Alternatives
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Prenatal Pesticide Exposure Linked to Lower IQ in School-Aged Children

Three independent investigations have found that prenatal exposure to organophosphate (OP) pesticides are linked to IQ deficits in school-age children. The three studies were conducted at the School of Public Health at the University of California, Berkeley, the Mailman School of Public Health at Columbia University, and Mount Sinai School of Medicine and were all published in the journal *Environmental Health Perspectives*.

All three studies involved cohorts of women enrolled during pregnancy. The Berkeley and Mount Sinai investigators measured OP pesticide

breakdown products in the pregnant women's urine, while the Columbia investigators measured the OP pesticide chlorpyrifos in umbilical cord blood. Intelligence tests were administered to children of these mothers between ages 6 and 9 years at Mount Sinai and at age 7 years at Berkeley and Columbia.

Although the study findings are not directly comparable, all three investigations found evidence linking prenatal OP pesticide exposures with adverse effects on cognitive function that continued into early childhood.

"It is well known that findings from individual epidemiologic studies may be influenced by chance and other sources of error. This is why researchers often recommend their results be interpreted with caution until they are supported by similar findings in other study populations," said *Environmental Health Perspectives* Editor-in-Chief Hugh A. Tilson. "As a group, these papers add substantial weight to the evidence linking OP pesticides with adverse effects on cognitive development by simultaneously reporting consistent findings for three different groups of children."

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Sixth Graders Urge Community to Stop Cosmetic Pesticide Use

Two streets in Camden, Maine—William Glen and Azalea—will be painted green on the Citizens for a Green Camden map in the town office window. More importantly, hazardous and unnecessary lawn chemicals will not come in contact with children and pets in this part of town and the chemicals will not seep into the nearby Megunticook river after a rain.

Sixth-grader Eliza Robinson of Camden, Maine talked to every homeowner on two streets receiving assurances that they will not use cosmetic pesticides on their lawns. Ms. Robinson is one of a dozen middle school students who is a part of Kids for a Greener Camden. The group spread out throughout the town to convince different streets to

stop the spray, and Eliza's were the first to be completed.

The students are a part of a sub-group of the project's sponsor, Citizens for a Green Camden. The goal is for the entire town of Camden to be free of dangerous and unnecessary lawn chemicals. The sixth grader said that she pointed out to the homeowners that Megunticook River flows behind their homes.

"It makes a cycle," she said. "Say you're a fisherman and put pesticides on your lawn. Then it runs down into the river and you get a fish that has pesticides in it, and it all comes back to you."

Chemical lawn pesticides are scientifi-

cally linked to numerous health problems in people, especially children and their pets. They are known to be toxic to the nervous and immune system, endocrine disruptors, and tied to respiratory effects such as asthma. Alternative practices that rely on maintenance techniques and soil health that prevent unwanted insect and weeds are far more effective than their chemical counterparts.

Previous initiatives by the group, Citizens for a Green Camden, have helped eliminate the use of pesticides on town-owned property including parks and on playing fields.

If you live in Camden and want to adopt

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California Once Again Introduces Legislation to Ban Pesticides in Schools

To help protect children from exposure to pesticides, California State Senator Mark DeSaulnier joined with Pesticide Watch and Californians for Pesticide Reform to pursue Senate Bill 394, *The Healthy Schools Act of 2011*. If enacted, this bill will prohibit the use of a pesticides that contain ingredients known and listed by California to cause cancer or reproductive toxicity. It also mandates that at least one staff person from each school be trained in appropriate use of pesticides.

This is a new attempt to pass legislation since then-Governor Schwarzenegger vetoed *The Healthy Schools Act of 2010* (SB 1157) which passed the State Assembly in 2010. This new bill allows only self-contained baits, gels, and pastes for crack and crevice treatments or spot treatments on school sites.

"The risk for our children is just too great," said Sen. DeSaulnier. "Schools are a place of learning and growth that must be free of dangerous toxins. This bill recognizes that there is nothing

more important to California families than the health of our children."

According to the Centers for Disease Control and Prevention, children between the ages of six and eleven have the highest levels of pesticides in their bodies when compared to any other age category. Some specific pesticides have been found at levels 200% higher in children than adults.

Pesticide exposure is known to cause acute symptoms, such as nausea, headache, dizziness, asthma attacks, and respiratory irritation, which are often diagnosed as flu symptoms. Pesticides have also been linked to chronic effects such as developmental and reproductive problems, learning disabilities like ADHD and autism, nervous system disorders, immune deficiency, and cancer. Visit Beyond Pesticides' Pesticide Induced Disease Database for more information on pesticides and disease.

Children's exposure to pesticides has contributed to a rise in a variety of

chronic illnesses and fatal diseases. In the last twenty years, asthma among children has more than doubled and is now the leading cause of missed school days in California. From 1977 to 1994, learning disabilities among children rose 191%, with brain cancer in children up 40% from 1973 to 1994.

"This legislation ensures that California school children and teachers are provided with a safer and greener learning environment," said Paul Towers, state director of Pesticide Watch. "With the right training and support, healthy schools are within reach."

"California used to be the state others turned to as a model for ensuring the health of kids in school," said Sarah Aird, State Field Campaigner/Organizer, Californians for Pesticide Reform. "Although some California schools are reaping the health benefits and financial advantages of green pest control, as a state we've fallen behind the cutting edge. It's time for California to take the lead again. This bill would do that."

Prenatal Exposure

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The Berkeley study, examining families in the intensive agricultural region of Salinas Valley, California, found that IQ levels for children with the most OP exposure were a full seven IQ points lower than those with the lowest exposure levels. The Berkeley team also found that every tenfold increase in measures of organophosphates detected during a mother's pregnancy corresponded to a 5.5 point drop in overall IQ scores in the 7-year-olds.

This is a very significant drop. In com-

parison, lead poisoning can result in a drop of two to three IQ points is cause for grave concern.

The findings of the three studies support the suggestions of recent research on a phenomenon known as "inverse dose response." This refers to the idea that it is often the timing of chemical exposure that is most important, rather than the actual degree of exposure. The studies found that exposure to OPs while a child was still in the womb correlated to lower IQ scores, but exposures during early childhood,

even at higher amounts, did not result in similar findings.

Organophosphates, derived from World War II nerve agents, are a common class of chemicals used in pesticides and are considered to be among the most likely pesticides to cause an acute poisoning. Organophosphate pesticides are extremely toxic to the nervous system, as they are cholinesterase inhibitors and bind irreversibly to the active site of an enzyme essential for normal nerve impulse transmission.

Sixth Graders

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a street to green, email kidsforagreene@camden@gmail.com or see [\[zensforagreencamden.org\]\(http://zensforagreencamden.org\) for more information on how to get involved.](http://www.citi-</p></div><div data-bbox=)

Want to help get toxic pesticides out of your schools and community but don't

live in Maine? See our Tools for Change page at www.beyondpesticides.org/doorway/activisttools.htm for resources and ideas or send an email to Beyond Pesticides at info@beyondpesticides.org.