

2/20/2020

Senate Committee on Environment and Natural Resources

RE: HB 4109, in support

To Senator Dembrow, Vice-chair Baertschiger and Members of the Senate Committee on Environment and Natural Resources:

Thank you for the opportunity to provide written testimony in support of HB 4109. This is Dr Randall Phelps. I am a Developmental-Behavioral Pediatrician and Associate Professor of Pediatrics at Oregon Health and Science University.

In my practice as a Developmental-Behavioral Pediatrician, I review the history of prenatal exposure to medications or drugs which affect the brain, because we know that even very low doses of such substances, which may have little or no effect on the mother, may be severely detrimental to the development of the fetus.

That is why I am writing to you in support of HB 4109. As a pediatrician, I support Oregon adopting a phase out on Chlorpyrifos, an organophosphate insecticide. I am in support of restrictions on aerial spraying, establishment of a safety buffer from spraying near schools, and longer time-limits after spraying before farmworkers re-enter sprayed area.

Chlorpyrifos is designed to destroy insects by affecting their nerve function. People and insects use many of the same chemical nerve signals, such as acetylcholine. The licensing of most pesticides may require toxicity testing, but very rarely requires developmental toxicity testing to protect children. This is in spite of the fact that many pesticides are relatives of nerve gas, and are well known to impact neurotransmitter function. The burden of proof of safety has been left to the community. Fortunately, the scientific community has taken up this responsibility, to determine whether the use of pesticides have adverse effects on the development of children.

We need to know the answers to two questions: one, are pesticides, such as Chlorpyrifos, as currently applied, now detectable in the body fluids of pregnant women?; and two, do these chemicals, at the concentrations found in the body fluids of expectant mothers, adversely impact the development of children? These questions have now been answered, by independent scientific investigations, and the answers are “yes” and “yes”.

To summarize several studies: Detectable levels of Chlorpyrifos metabolites have been found in the urine of pregnant women, and in umbilical cord blood, and in meconium (newborn feces). In other words, it is well established that Chlorpyrifos crosses the placenta and is thus able to harm a fetus. The populations enrolled in these studies included urban residents and residents of predominantly agricultural communities. These studies were well designed, using large

populations and controlling for factors such as income and education. When exposed children are compared to children without exposure, dose-related effects are found in the exposed children. Children exposed prenatally to Chlorpyrifos have abnormal newborn reflexes, lower scores on cognitive testing, increased symptoms of poor attention and of hyperactivity, and increased autism symptom scores.

In summary, it has been established that current practices of pesticide usage lead to maternal exposure, and thus, fetal exposure to known neurotoxins. This level of exposure, which may not cause symptoms in the mother, or obvious symptoms in her children, does have subtle, but measurable, significant, and clinically relevant effects on fetuses, infants, and children.

I urge you to protect Oregon's children and help them reach their full potential as contributing members of society. As policy makers, you have a special opportunity to protect the children of Oregon. Please pass legislation to phase out Chlorpyrifos and to implement the reasonable and moderate safety measures included in HB 4109. Thank you.

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**References:**

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- (2) Young, JG, Eskenazi B, Gladstone EA et al. (2005) Association between *in utero* organophosphate pesticide exposure and abnormal reflexes in neonates. *Neurotoxicology* 26: 199-209.
- (3) Eskenazi B, Marks AR, Bradman, A et al. (2007) Organophosphate pesticide exposure and neurodevelopment in young Mexican-American children. *Environmental Health Perspectives* 115: 792-798.
- (4) Rauh, VA, Garfinkel, R, Perera, FP et al. (2006) Impact of prenatal chlorpyrifos exposure on neurodevelopment in the first 3 years of life among inner-city children. *Pediatrics* 118: e1845-1859.