

To: The Senate Environment and Natural Resources Committee

From: Dr. Randy Phelps, Associate Professor of Pediatrics, School of Medicine, OHSU

Subject: Support for SB 853

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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 SB 853 and HB 3058. As a pediatrician, I am interested in having Oregon adopt a ban on chlorpyrifos, an organophosphate insecticide and restricting another class of neurotoxins, neonicotinoids, to only licensed and trained users.

For example, it is well known that alcohol consumption during pregnancy, which has only a mild effect on the mother's adult brain, can cause severe disability in her child. Prenatal exposure to medications prescribed for neurological or psychiatric conditions, such as medications for epilepsy, can cause severe disability.

Similarly to intoxicating drugs and psychiatric medications, many pesticides have effects on human nerve function. Organophosphate pesticides, such as Chlorpyrifos, are 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. 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 effect on development of children.

We need to know the answers to two questions: one, are these chemicals, such as Chlorpyrifos, an organophosphate pesticide, 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 organophosphate metabolites have been found in the urine of pregnant women, and in umbilical cord blood, and in meconium (newborn feces). 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 organophosphates have abnormal newborn reflexes, lower scores on cognitive testing at 3 years of age, increased symptoms of poor attention and of hyperactivity, and increased autism symptoms, such as avoiding eye contact, rocking of head and body, and being unresponsive to affection.

A large portion of our state budget goes to education and social services, and a large proportion of those budgets go to special education needs and support services for people with disabilities. We cannot afford to manage state lands in such a way that increases the need for special education services.

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 does not cause symptoms in the mother, or obvious symptoms in her children, does have subtle, but measurable, significant, and clinically relevant effects on 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 ban chlorpyrifos.

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