

WHITE-TAILED DEER EXPOSED TO NEONICOTINOIDS

The birth defects on wild and domestic animals are not being reported on national news. The birth defects are relatively high in prevalence on both wild and domestic animals, and most concerning on newborn children, so should warrant being reported to the public.

Nearly all white-tailed deer tested recently in Minnesota had neonicotinoid pesticides in their spleens. Those are the same pesticides that are causing birds and bees to get lost or quickly die when exposed, especially the insecticide called imidacloprid [5]. Scientists reported three years ago that a high prevalence of tested white-tailed deer in Minnesota had neonicotinoid pesticides in their spleens [1]. In 2021, 94% of the deer spleens tested positive for neonicotinoids, again especially imidacloprid [2]. Neonicotinoids or neonics are insecticides that are toxic to vertebrates [4] and invertebrates [6]. In North Dakota, harvested wild deer tested had an average of 3.5 times more imidacloprid in their spleens [3] than the captive deer used in the SDSU study [4], who were intentionally given the pesticide.

The expanding use of neonicotinoid insecticides is contaminating the food and water ingested by all animals because it falls in rain and snow on foliage and into surface water everywhere. Exposure can lead to organ damage, birth defects, lethargy and mortality in vertebrates, as well as mortality in most invertebrates necessary for human and other vertebrate survival [3][5].

All of this testing and research on white-tailed deer happened because of the birth defects that were brought to the attention of the Montana Department of Fish, Wildlife and Parks (MDFWP) in 1996 by biologists who worked for MDFWP. Those birth defects were subsequently reported in studies and have prompted a much wider concern and larger amount of testing and research in other states than they ever did here in Montana [7][8].

Most concerning for people, especially pregnant mothers, a new study was published that shows neonicotinoid insecticides and their metabolites are able to go through the human placenta to expose the fetus whenever the mother is exposed [9]. If imidacloprid can do that on a pregnant human, it certainly can do the same on other pregnant mammals.

An even more recent and extremely concerning study was done on infants to determine neonicotinoid exposure levels in newborn humans [16]. The study found that neonicotinoids, especially imidacloprid, was at significant levels in breast milk (0.27 ng/mL), infant formula (0.22), and tap water (0.028). A higher

median concentration of neonicotinoids were in infants' blood samples than in urine samples [16].

All recent testing shows alarming levels of imidacloprid in white-tailed deer, in human mothers to be and in newborn children. In addition, thousands of studies show imidacloprid has dire effects on developing young, newborns and adults of other vertebrates and most invertebrates. Since birth defects and mortality was shown to be in direct correlation with the imidacloprid levels in the spleens of white-tailed deer [4], it is highly likely that imidacloprid exposure is having similar effects on human fetuses and newborns. Newborn humans were observed to be born with the same or very similar birth defects found on deliberately exposed white-tailed deer in the same time period as the deer were born with those birth defects. Thus, the research strongly suggests neonicotinoids, especially imidacloprid, should never have been used and should no longer be used anywhere.

Another concerning new study regarding human mothers and babies who are exposed to the world's most used herbicide, glyphosate, was also published not long ago [10]. This was stated by the researchers about the study, "This groundbreaking study builds on growing research that has linked glyphosate to birth defects, miscarriage and infertility in animal studies. Yet the EPA still allows more than 250 million pounds of glyphosate to be sprayed on American farmlands each year!" This study indicates that researchers are seeing very similar health issues and mortality in human newborns to those reported on wildlife and human newborns in this 2015 study [11]. We hypothesize that the imidacloprid and glyphosate are working synergistically in exposed animals to cause far greater cellular damage than either toxin alone.

The phosphonate, N-(phosphonomethyl)glycine, known as glyphosate, is a broad-spectrum systemic herbicide and crop desiccant. A study done in 2015 implicated glyphosate in causing prion diseases, including CWD because glyphosate is a mineral chelator and disrupts the mineral balance [12]. Originally patented as a metal chelator, glyphosate binds to essential minerals in the soils, thereby reducing their uptake by plants, which is why it kills plants. Glyphosate falling in rain and snow on all the plants that wild ungulates eat reduces the minerals in the plants ingested [13], simultaneously resulting in exposure to glyphosate and compounding the mineral deficiency in the exposed grazing animals [11]. Ironically, if the animal does receive adequate manganese in its diet, exposure to the glyphosate disrupts bile acid homeostasis promoting a toxic accumulation of manganese in the brainstem [12]. This can result in animals developing prion diseases like Chronic Wasting Disease (CWD) and bovine spongiform encephalopathy (BSE), which are serious health concerns for wildlife, domestic livestock, and humans [12].

Glyphosate was also patented as an antibiotic, which stimulates populations of oxidant microorganisms and suppresses reducing microorganisms in the soil. This is another mechanism for decreasing the availability of manganese, iron, zinc, and other essential micronutrients to plants and to the animals that eat the plants [12]. The resulting mineral imbalance causes numerous health issues, birth defects [11] and likely prion diseases [12].

In the mid 1980s, autism was not very common. Now autism prevalence is 1 of every 36 babies born and increasing every year. Glyphosate has been shown to cause autism like symptoms in exposed study animals [14] and seriously disrupt the microbiota in invertebrates and vertebrates [15].

If you are interested in seeing photos of the birth defects that are happening to wildlife, especially mammals and birds, I have a website with photo documents showing photos of the birth defects on multiple vertebrate species. My website is (www.judyhoy.com). When it comes up, scroll down to PDFs to Download and click on that to find the PDF photo documents. Our studies are also there, as well as the SD study that was published in Nature.

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<https://www.mprnews.org/story/2022/08/23/data-show-increasing-insecticide-levels-in-minnesota-deer>

2. Paul Richards, "Biologists in Minnesota are Finding More Insecticides in Whitetail Deer Than Ever Before," Field & Stream, August 29, 2022.
<https://www.fieldandstream.com/conservation/whitetail-deer-insecticide-exposure/>

3. Rob Beer, "Study shows widespread neonicotinoid exposure in Minnesota white-tailed deer," Twin Cities, March 1, 2021.
<https://www.twincities.com/2021/03/01/study-shows-widespread-neonicotinoid-exposure-in-minnesota-white-tailed-deer/amp/>

4. E. H. Berheim, et al. "Effects of Neonicotinoid Insecticides on Physiology and Reproductive Characteristics of Captive Female and Fawn White-tailed Deer, March 14, 2019. <https://doi.org/10.1038/s41598-019-40994-9>

5. Mia Rabson, "No doubt that neonicotinoids are killing birds, bees, scientists say," CBC News, September 17, 2019.

<https://www.cbc.ca/news/politics/pesticide-bee-bird-deaths-neonicotinoids-1.4296357>

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Glyphosate facts:

- Nearly 1 lb of glyphosate for every person in the US is sprayed per year.
- It's water soluble, so our rain and groundwater are also contaminated.
- It's a patented antibiotic by Monsanto, killing off the beneficial microbes and promoting the growth of the pathogens.
- It binds crucial biologically important metals, such as zinc, magnesium and manganese.
- It's used off-label as a crop desiccant (drying agent), which means at harvest, crops like oats, wheat and legumes take up whopping amounts of glyphosate.
- Roundup-Ready crops are GMO and do not die when sprayed.