

Talking Points Supporting Policy to Protect Children Child Safe Schools, Playgrounds and Athletic Fields

Health Effects of Pesticides to Children

- Children take in more pesticides relative to their body weight than adults and are less able to detoxify harmful chemicals.
- Children also come into closer contact with chemicals than adults, as a result of crawling behavior and hand to mouth activities
- Of the 30 most commonly used lawn pesticides, 16 are possible and/or known carcinogens, 17 have the potential to disrupt the endocrine (hormonal) system, 21 are linked to reproductive effects and sexual dysfunction, 12 have been linked to birth defects, 14 are neurotoxic, 25 can cause kidney or liver damage, and 26 are sensitizers and/or irritants. (See: [Health Effects of 30 Commonly Used Lawn Care Pesticides](#))

Conclusions of numerous peer-reviewed scientific studies on children and pesticides can be found through the fact sheet: [Children and Pesticides Don't Mix](#). Key examples include:

- A 2013 study suggests that preconception pesticide exposure, and possible exposure during pregnancy is associated with an increased risk of childhood brain tumors.
- Green KR, Peters S, Bailey HD. 2013) Exposure to pesticides and the risk of childhood brain tumors. *Cancer Causes Control*. <https://www.ncbi.nlm.nih.gov/pubmed/23558445>
- In 2015, WHO found that there was sufficient evidence of carcinogenicity in experimental organisms to classify glyphosate, the active ingredient in the most popular lawn care brand (Roundup) as “probably carcinogenic to humans” (Group 2A). WHO also found that 2,4-D- found in many ‘weed and feed’ products- is possibly carcinogenic
 - See [World Health Organization Determination of Glyphosate as a Probable Human Carcinogen](#) and view [World Health Organization’s determination that 2,4-D is a possible carcinogen](#)
- A 2004 study finds that young infants and toddlers exposed to herbicides (weedkillers) within their first year of life are 4.5 times more likely to develop asthma by the age of five, and almost 2.5 times more likely when exposed to insecticides.
 - Salam, MT, et al. 2004. “Early Life Environmental Risk Factors for Asthma: Findings from the Children’s Health Study.” *Environmental Health Perspectives* 112(6): 760.
https://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display/files/fileID/13987
- A 2002 study finds children born to parents exposed to glyphosate (Roundup®) show a higher incidence of attention deficit disorder and hyperactivity.

- Cox C. 2004. Journal Of Pesticide Reform Vol. 24 (4) citing: Garry, V.F. et al. 2002. “Birth defects, season of conception, and sex of children born to pesticide applicators living in the Red River Valley of Minnesota.” Environmental Health Perspectives 110 (Suppl. 3):441-449.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1241196/>

Quote from American Academy of Pediatrics

<http://pediatrics.aappublications.org/content/early/2012/11/21/peds.2012-2757>

“Children encounter pesticides daily and have unique susceptibilities to their potential toxicity. Acute poisoning risks are clear, and understanding of chronic health implications from both acute and chronic exposure are emerging. Epidemiologic evidence demonstrates associations between early life exposure to pesticides and pediatric cancers, decreased cognitive function, and behavioral problems.” ~Abstract

Quote from American College of Obstetricians and Gynecologists Report on Environmental Chemicals and Reproductive Health

<http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Health-Care-for-Underserved-Women/Exposure-to-Toxic-Environmental-Agents>

“Prenatal exposure to certain chemicals has been documented to increase the risk of cancer in childhood; adult male exposure to pesticides is linked to altered semen quality, sterility, and prostate cancer; and postnatal exposure to some pesticides can interfere with all developmental stages of reproductive function in adult females, including puberty, menstruation and ovulation, fertility and fecundity, and menopause.” ~Abstract

Presidents’ Cancer Panel Report on Reducing Environmental Cancer Risk:

<http://deainfo.nci.nih.gov/advisory/pcp/annualReports/>

“Leukemia rates are consistently elevated among children who grow up on farms, **among children whose parents used pesticides in the home or garden,** and among children of pesticide applicators. Because these chemicals often are applied as mixtures, it has been difficult to clearly distinguish cancer risks associated with individual agents.” ~p44

“Fertilizers, herbicides, and pesticides used for residential and other landscaping purposes (e.g., parks, golf courses), in some represent a considerable component of water contamination because they seep into groundwater and run off into streams, rivers, and other drinking water supplies. About a quarter of the pesticides used annually in the U.S. are for landscaping purposes. Landscaping workers who apply these chemicals to lawns and other non-agricultural sites can sustain high levels of exposure, with cancer risks similar to those of farm workers. Homeowners can be exposed to fertilizers, herbicides, and insecticides when mowing residential lawns after chemicals have been recently applied and by handling and applying chemicals themselves. **Children may be exposed when playing in areas where chemicals**

have been applied. In addition, individuals can be exposed to these chemicals by swimming in or eating seafood from contaminated bodies of water.” ~p56

Quotes from EPA: Pesticides and Their Impact on Children: Key Facts and Talking Points

<https://www.epa.gov/sites/production/files/2015-12/documents/pest-impact-hsstaff.pdf>

- “Due to key differences in physiology and behavior, children are more susceptible to environmental hazards than adults.”
- “Children spend more time outdoors on grass, playing fields, and play equipment where pesticides may be present.”
- “Children’s hand-to-mouth contact is more frequent, exposing them to toxins through ingestion.”

Also see:

See attached pdf letter from Dr. Phillip Landrigan of Mt. Sinai Hospital in support of an ordinance restricting cosmetic pesticide use in Montgomery County, Maryland

[Pesticide Induced Diseases Database](#)

- Provides a wide range of peer reviewed literature on pesticide hazards categorized by health effects and diseases that are all too common in today’s world.

EPA failures in pesticide regulatory process and reasons for states and localities to act:

1. EPA only tests the active ingredient in pesticide formulations. Despite the fact that a pesticide product can contain multiple ingredients, the agency does not look at what are known as "synergistic impacts." [Science shows](#) that combinations of active ingredients can increase or decrease the toxicity of a product, but this impact is simply not evaluated by the agency.
2. EPA does not test the toxicity of "inert ingredients" or combinations of inert ingredients and active ingredients, despite the fact that they may comprise up to 99.9% of a pesticide formulation. Beyond Pesticides' and allies have sued the agency to require disclosure, but [legal maneuvering](#) has kept consumers in the dark.
3. EPA often registers pesticides through a program called "conditional registration." In these cases, the agency permits a pesticide to go to market without all of its required data on health and environmental impacts because the agency assumes that no harm will come as it waits for this data. Time and time again, EPA has been criticized for this practice, including in a [report from the Government Accountability Office](#). The agency wrote: “Specifically, EPA does not have a reliable system, such as an automated data system, to track key information related to conditional registrations, including whether companies have submitted additional data within required time frames.” Past incidents like the herbicide [Imprellis](#), or insecticide [flubendiamide](#) show the danger this program can cause.

Environmental Impacts of Pesticides

- Of the 30 most commonly used lawn pesticides, 19 are detected in groundwater, 22 are toxic to birds, 29 are toxic to bees, and all 30 are toxic to fish and aquatic organisms.
 - See: [Environmental Effects of 30 Commonly Used Lawn Care Pesticides](#)

Pollinators:

- Honey bees and other pollinators account for 1 in 3 bites of food, but recent science shows these beneficial species are under threat from a class of systemic, persistent insecticides called neonicotinoids.
 - Beyond Pesticides. Honey Bees and Pesticides. 2013. <http://www.beyondpesticides.org/assets/media/documents/pollinators/documents/HoneybeesPesticides.pdf> (additional talking points)
- In 2014-2015 (the latest available data), beekeepers in New Hampshire lost 50.8% of their honey bee colonies. This is unsustainable and is over the national average for that period – 42.1%, which is itself unsustainable, as beekeepers have a difficult time absorbing losses greater than 15% each year. Losses over 30% have occurred every year since 2006.
 - Bee Informed Partnership. 2014-2015. Losses by State. <https://beeinformed.org/wp-content/uploads/2015/09/LossesByState-RF.pdf>
- A wide range of systemic neonicotinoids are registered for use on turf. Studies show these chemicals can be taken up by nearby plants and exuded in the pollen, nectar, and dew droplets honey bees and other pollinators feed on.
 - Mogren C and Lundgren J. 2016. Neonicotinoid-contaminated pollinator strips adjacent to cropland reduce honey bee nutritional status. Scientific Reports 6, Article number: 29608 <http://www.nature.com/articles/srep29608>
- Systemic pesticides like the widely used neonicotinoid class of insecticides, have been shown, even at low levels, to impair foraging, navigational, and learning behavior in bees, as well as suppress their immune system to the point of increasing their susceptibility to pathogens and disease
 - Harriott, N. 2014. Bees, Birds and Beneficials: How fields of poison adversely affect non-target organisms. Pesticides and You. Vol. 33, No. 4 Winter 2013-14. <http://www.beyondpesticides.org/assets/media/documents/infoservices/pesticidesandyou/documents/BeesBirdsBeneficials.pdf>
- [International Union for the Conservation of Nature's Task Force on Systemic Pesticides](#)
 - A series of peer-reviewed studies from a group of international scientists regarding the threat systemic pesticides pose to biodiversity and ecosystems.

Water Quality:

- Pesticides that are applied to turf make their way into children's drinking water. A 2010 study conducted by the New Hampshire Department of Environmental Services

detected pesticide residue in 14 of 92, or 24% of samples analyzed. Pesticide compounds were detected a total of 29 times for the sampling program.

- While concentrations found were relatively low (.1 to 11% of applicable drinking water standard), this does not indicate there is no concern. As mentioned earlier, children are far more susceptible to pesticide exposure, and EPA is not adequately assessing these risks. For children's drinking water, which kids are exposed to chronically, this level should be 0.
- The report concluded that "Schools should develop and implement integrated pest management program by combining the use of biological, cultural, physical, and chemical tactics in a way that minimizes economic, health, and environmental risks." This bill will help bring schools in alignment with this recommendation.
 - NH Department of Environmental Services. 2010. Pesticides and Drinking Water at NH Schools and Daycares.
<http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/r-wd-11-20.pdf>
- A National Water Quality Assessment Conducted by the United States Geological Survey detected insecticides and herbicides in urban areas in New Hampshire. The report noted, "Herbicides were detected in all but six sites, and the response of total herbicides with the urban index indicated that herbicide use increased with urban intensity."
 - Coles, J.F., Cuffney, T.F., McMahon, Gerard, and Beaulieu, K.M., 2004, The effects of urbanization on the biological, physical, and chemical characteristics of coastal New England streams: U.S. Geological Survey Professional Paper 1695, 47 p. http://pubs.usgs.gov/pp/pp1695/pp1695_report_new.pdf (See page 42)
- After the Canadian Province of Ontario implemented restrictions on the use of pesticides, a government report found a staggering decline in herbicide concentrations Median concentrations for herbicides 2,4-D, dicamba, and MCPP, commonly used by both private individuals and lawn care professionals, declined by 81%, 83%, and 71% respectively.
 - Ontario Ministry of the Environment. 2011. Pesticide Concentrations in Ontario's Urban Streams One Year After the Cosmetic Pesticides Ban.
http://www.landscapeontario.com/attach/1295274330.MOE_Update_-_Aaron_Todd.pdf

Alternatives to Pesticides are Effective, Economical, and Widely Available

- Limiting the use of toxic pesticides will incentivize a transition to safer, more effective long-term landscape management strategies.
- High quality lawns and landscapes can be maintained with practices that build soil health through natural fertilization and cultural practices, such as soil aeration, mowing height, and timing and volume of water.
- For example, research from the University of Maryland finds that mowing at the proper height alone can reduce weed and diseases by 50 to 80% in fescue grass.

- University of Maryland. 2016. Mowing/Grasscycling.
<https://extension.umd.edu/hgic/mowinggrasscycling-lawns>

Fact Sheets on Sustainable, Organic Land Care:

- [Organic Lawn Care 101](#)
 - A simple, straightforward introduction to organic lawn care that lays out the basics steps.
- [Read Your Weeds: A Simple Guide to Creating a Healthy Lawn](#)
 - This document delves into managing the source of weed problems (soil compaction, mowing height, pH, fertility, watering, or drainage), rather than treating symptoms – the weeds themselves.
- [Least Toxic Control of Weeds](#)
 - Provides examples of alternative products and practices to chemical-intensive lawn care. Non-comprehensive.
- In depth documents for organic lawn care
 - [Establishing sustainable lawns](#)
 - Runs through the ways to get started with organic land care, including grass seed decisions, soil testing, site preparation, and seeding or sod.
 - [Maintaining sustainable lawns](#)
 - Once established, provides detailed information on how to manage organic turf. Discusses the importance of soil testing, mowing height, aeration, proper watering, the use of compost or other natural fertilizers, grass seed, and weed tolerance. Also provides detailed information on managing common turf disease, weed, and pest problems. Proscribes non and least-toxic alternative materials to employ.
 - [Best Management Practices for Pesticide-Free, Cool-Season School Athletic Fields](#)
 - UCONN's working document to help school land managers address turf problems without the use of toxic pesticides.

Key Points on Cost of Alternatives:

1. Organic alternatives are cost effective. Take it from [Connecticut's Department of Energy and Environmental Protection](#): "If your lawn is currently chemically dependent, initially it may be more expensive to restore it. But in the long term, an organic lawn will actually cost you less money. Once established, an organic lawn uses less water and fertilizers, and requires less labor for mowing and maintenance." There's also research from [Harvard University](#), which has a long-standing [organic land care program](#). It's investigation determined that, ultimately, total operating costs of the organic maintenance program are expected to be the same as its prior the conventionally based program. In a 2009 New York Times article, the school determined that irrigation was reduced by 30%, saving 2 million gallons of water a year as a result of reduced irrigation needs. The school was also spending \$35,000/year trucking yard waste off site. The

university can now use those materials for composting and has saved an additional \$10k/year due to the decreased cost and need to purchase fertilizer from off-campus sources. As another source, see nationally renowned lawn care expert [Chip Osborne's report](#), which looks specifically at the cost of conventional and organic turf management on school athletic fields. The report concludes that once established, a natural turf management program can result in savings of greater than 25% compared to a conventional turf management program. There have been leaps and strides in the efficiency of organic systems since that report was first published.

Narrative for Discussing Alternatives:

You can maintain an aesthetically appealing lawn without the use of toxic pesticides. By focusing on natural systems, turf and landscapes build what's known as ecological resiliency. Resiliency is a term used to describe the ability for an environment to bounce back to its previous state after a disturbance. Organic land management requires a "systems approach," which incorporates preventive steps based on building soil biomass to improve soil fertility and turf grass health, organic products based on a soil analysis that determines need, and specific cultural practices, including mowing height, aeration, dethatching, and over-seeding. Organic turf management is a "feed-the-soil" approach that centers on natural, organic fertilization, microbial inoculants, compost teas, and compost topdressing as needed. This approach builds a soil environment rich in microbiology that will produce strong, healthy turf able to withstand stress. When properly maintained, organic lawns look just as appealing as a conventional, chemical based approach.

States/Communities to Point To:

New York

The [New York Safe Playing Fields Act](#) was passed in 2010 to protect children from unnecessary pesticide use. The law bans the use of pesticides, excepting products containing active ingredients listed as exempt under 25(b) of FIFRA and emergency exemptions determined by the county health department, on school playing fields and playgrounds. Schools were given a year transition period before the law came into effect in May of 2011.

Connecticut

In 2005, Public Act No. 05-252, An Act Concerning Pesticides at Schools and Day Care Facilities, was passed in Connecticut. That law bans lawn care pesticides on the grounds of children's day care centers and elementary schools, allowing integrated pest management (IPM) on playing fields for a three-year transition period. [In 2007](#) the ban was expanded to applying lawn care pesticides to school playing fields and playgrounds to schools with students through grade eight. In 2015, the state again [amended the law to include protections from pesticides for all municipal playgrounds in the state](#). ([Bill 1502](#) at Section 448 (p.563 at line 17579)

Dover and Keene, NH

Dover and Keene are part of a pilot project by Beyond Pesticides aimed at jumpstarting organic land care practices in the cities. As part of the program, Dover and Keene each committed two sites to transition from conventional to organic land care. Beyond Pesticides provided assistance by overseeing a comprehensive soil test for structural, chemical, and biological content of the soil, and brought in nationally renowned organic turf expert Chip Osborne to provide a site-walkthrough and training. This information was then taken and turned into a management plan for the two sites. We have heard positive feedback from this program to date, especially during the drought this past year.

Ogunquit and South Portland, ME

Voters in Ogunquit, ME went to the polls in June 2014 and passed [a historic pesticide ordinance](#). This ordinance amended a previous law that restricted pesticide use only on town-owned property, which made it the second town in the country to ban lawn care pesticide use on public and private property, and caught the attention of DownEast magazine, which awarded the town its [16th Down East Environmental Award](#). After Ogunquit's successful ordinance, [South Portland, ME](#) passed a similar bill, but went further in restricting all pesticide use, including least toxic and organic, near aquatic sites.

Marblehead, MA

Marblehead has been following [Organic Pest Management Regulations](#) since 2005 for all turf and land management. According to the regulations, the use and application of toxic chemical pesticides, either by Town of Marblehead employees or by private contractors, is prohibited on all Town-owned lands. The town employees who work with turf grass and the landscape receive education and training in natural, organic turf and landscape management.