

Our environment is critical to our health. What are we putting into it?

The wide-scale use of chemical pesticides, designed to repel, incapacitate, or kill weeds and pests in agriculture, or for cosmetic uses on lawns, gardens, parks and golf courses, have unintended impacts by [inundating our environment](#)¹, contaminating wildlife, our [food](#)², waterways, drinking [water](#)³, and even finding their way into our [bloodstream](#)⁴ and [breast milk](#)⁵.

A [recent UN report](#)⁶ outlines how pesticides adversely impact our human rights to health and a healthy environment, explaining that national and international legislation fails “to protect humans and the environment from hazardous pesticides... and to effectively apply the precautionary principle” (resisting the introduction of new products with disputed or unknown ultimate consequences). The many useful recommendations in the UN report, to protect human health and the environment, are actively being stifled by pressure from the chemical pesticide industry.

Certain pesticides endanger our food supply, for example, neonicotinoids (neonics) that are thought to be [disabling our bee population](#)⁷ and therefore wiping out the pollinators crucial for our food production, not to mention the "superweed" crisis brought on by glyphosate pesticides. Recent research shows that pesticides residues are [found in most non-organic foods](#)⁸, from our cereals to nutraceuticals and [baby foods](#)⁹. Since pesticide legislation [has been identified](#)¹⁰ as the major challenge in striving towards global health, [food safety and security](#)¹¹, we need to work in our city to reduce pesticide use as much as possible.

Our health, and the health of our communities, are on the line here. Exposure to avoidable environmental pollutants, including pesticides, can cause oxidative stress in cells that hamper fetal development and make our children [more prone to disease](#)¹². Children interact with their physical environment in a very different manner than adults, and so are [uniquely susceptible](#)^{13,14} to environmental toxicants. I have watched a toddler in a city space rip out grass and pop it in their mouth, adjacent to a herbicide application sign that went unnoticed by his mother, and many pesticides are prone to drift in strong Saskatchewan winds, even when applied carefully.

But it's not just our little ones — we adults are far from immune. In your daily life, it is likely that you are unwittingly exposed to numerous harmful pesticides. [One recent study](#)¹⁵ describes how environmental toxins, including pesticides, can short circuit our stress response pathways and lead to psychological disorders, which should be especially disturbing in the midst of multiple Canadian mental health crises.

Organochlorinated and organophosphate (glyphosate, found in Roundup) pesticides act as endocrine disruptors, causing oxidative stress to our cells that [can lead to](#)¹⁶ [disrupted metabolism](#)¹⁷, breast cancer, ovarian problems, cancer of the testes, thyroid eruptions, Alzheimer disease, schizophrenia, and nerve damage. Exposure to pesticides further increases the risk of multiple myeloma, [cancer of the white blood cells](#)¹⁸, blood cancer that originates in the bone marrow, ageing of [stem cells](#)¹⁹ that are needed to regenerate our organs, and [Parkinson's disease](#)²⁰ thought to be partially brought on by oxidative

stress. This is one of the things we have studied in my laboratory – the oxidative stress caused by common pesticides²¹.

Remember, it's not just disease that threatens our health — we also need clean food, water and air to live healthily. [The ecological impact on our environment is enormous](#)²², underscoring the need to keep our environment clean and consider alternatives to chemical pesticides. There are many alternatives without such harmful impacts. The ancient practice of bacterial pesticides ultimately led to the development of our 20th century genetically modified Bt (*Bacillus thuringiensis*) pesticide that we use in the city. The use of phytochemicals (biologically active compounds from plants) and essential oils also [originated in ancient times](#)²³, with renewed contemporary interest including antibacterial, antifungal and pest deterrent properties for air quality, agricultural food preservation, [pesticides and insecticides](#)²⁴. Many of these alternatives, including the precautionary principle, are clearly outlined in the [UN report](#)⁶. These options are usually inexpensive and accessible — we only need the political will to enact them.

Reducing pesticides makes dollars and sense. Toxic chemicals, including pesticides are tied to [almost 340 billion](#) in annual US spending, for costs to the health system and lost wages — almost double that of the European Union which better limits exposure through more stringent regulations. So armed with all of this information, why are we not protecting our environment for future generations, ensuring our health legacy and our provincial financial stability by eliminating or reducing chemical pesticide use? We need to be thinking upstream, using the precautionary principle before releasing pesticides into the environment and limiting the use of pesticides.

There is a great deal we can do in our lives to reduce chemical pesticide exposure, including alternative methods for lawn and garden care. Let's make this motion a first step towards a healthier Regina.

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