

Exposure to Pesticides and Solvents Increases Parkinson's Disease Risk

Written by Nina Lincoff | Published on 28 maggio 2013

The downside to bug-free fruit may be an increased risk of developing Parkinson's disease.



Weeds and insects aren't necessarily desirable when it comes to our produce and gardens—have you ever chomped down on an apple only to find a worm? But the chemicals used to kill pests in fields and planters may be harming your health as well.

After analyzing 104 studies, researchers from the [University Hospital San Matteo Foundation](#) in Pavia, Italy, found that exposure to pesticides targeting weeds and insects in farming was associated with a 33 to 80 percent increase in the risk of developing Parkinson's disease.

The researchers decided to take a closer look at the impact of pesticides, which are designed to kill things like insects and weeds but not to endanger human consumers or workers, when they noticed more and more patients reporting pesticide exposure.

“In every day clinical practice we frequently see patients reporting such exposure. Accordingly, it appears quite obvious to look at these exposures as risk factors,” said study author Emanuele Cereda, MD, Ph.D., in an interview with Healthline.

Parkinson's disease (PD) is a chronic, degenerative neurological disease that affects up to 1.5 million Americans, according to the [Parkinson's Action Network](#). PD causes a disruption in the physical, cognitive, and psychological pathways in the brain. Among the most common symptoms of PD is hand tremors, but the disease can quickly cause more serious afflictions, such as dementia and loss of motor skills.

While there is no known cure for the disease, a family history of PD is a good way to predict a patient's potential risk. However, PD can be triggered by environmental factors as well, so a purported 80 percent increase in disease risk because of exposure to pesticides is alarming.

“A genetic predisposition may increase the risk brought on by these exposures. Once penetrated in our body, pollutants are metabolized by our enzymatic detoxification systems to be eliminated,” Cereda said. Enzymatic systems in our bodies, mainly located in the liver, are designed to cope with exposure to chemicals, but unfortunately for those with a predisposition to PD, it's possible that the enzymes are altered because of a genetic mutation. “Their function [is] less effective in lowering the concentrations [of chemicals] and limiting their detrimental effects,” Cereda said.

Check Your Labels

If day-to-day pesticide use is an unavoidable part of your life, Cereda emphasizes the importance of knowing exactly what you're being exposed to.

“When a label on a certain category of products tells you that the content may be toxic, please be aware that the warning has been put there for a reason,” Cereda said. “Accordingly, the use of protective equipment and compliance with suggested, or even recommended, preventive practices should be emphasized in every high-risk working category.”

To limit your risk, know what's in the pesticides you're using. It's best to use [protective equipment](#), such as long-sleeved shirts and pants, chemical-resistant gloves, and eye goggles, and to observe all safety precautions.

Cereda's team found that PD risk increased after exposure to any type of pesticide, herbicide, insecticide, or solvent, but the risk ranged from 33 to 80 percent depending on the type of chemicals used. They observed no increased risk from fungicides, rodenticides, organochlorines, organophosphates, dichloro-diphenyl-trichloroethane (DDT), maneb, or mancozeb.

Cereda says that the lack of health research funding from pesticide manufacturers is unbelievable. “Commonly, the sources of funding in the studies we retrieved and included in the meta-analysis were health or health-related institutions, private foundations (mainly Parkinson's disease foundations), or government companies,” he said.

Therein lies the real, legal question: if you manufacture a chemical, are you responsible for its health effects?