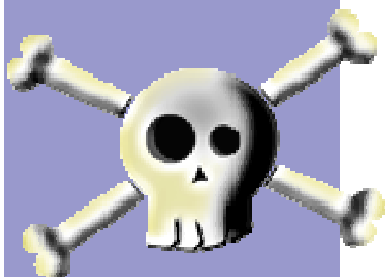


Science

Toxic Exposures & Dose Additive Effects

“The researchers’ uncovered significant dose-related decreases in motor activity at below-threshold levels for each pyrethroid.”



Each day, people are exposed to a myriad of potentially toxic chemicals in low doses, such as having a workplace or home sprayed for bugs, outdoor environmental pollution, and the use of cleaning chemicals, personal care products, and fragrances.

Previously, scientists have studied each chemical exposure separately and set safe exposure limits for individual products. With people are increasingly becoming ill from low-dose chemical exposure, scientists are just beginning to understand that this may not be effective.

Wolansky and colleagues hypothesized that that the cumulative neurotoxic effects of pyrethroid mixtures in rats could be predicted using the default dose-addition theory.

The researchers’ uncovered significant dose-related decreases in motor activity at below-threshold levels for each pyrethroid.

Not only do various exposures accumulate, but similar exposures may have more than an additive effect. In some cases, two exposures may act synergistically to produce more of an effect than simply that of two individual substances added together. It’s an increased potency at a lower dose and this may account for an epidemic of reports of chemical sensitivity and toxic reactions.

Chemicals have become ubiquitous in the environment. Even people who avoid the use of any toxic

chemical product find they cannot avoid being exposed to neurotoxic chemicals such as the use of pesticides in public places, herbicide use in parks, and others’ use of perfume, scented lotions, and use of clothing laundered in fragranced detergent.

Anytime air is shared, such as in a school, workplace, or movie theatre, everyone in the room is subject to exposure to the products everyone else has used or worn.

A conscious effort is needed by a vast majority of people to reduce everyone’s exposure.

Most of us don’t even realize that our shampoo, lotion, and after shave is scented or that the pesticide we applied yesterday will persist in our home for months where our children and pets crawl and rest.

Beginning at home, unscented laundry and personal care products are a great start. Pests can be controlled by natural means and keeping the home clean and free of debris. Weeds can be pulled, weed whacked, or mowed.

Health begins at home!

Reference

Wolansky, MJ, Gennings, C, DeVito, MJ, and Crofton KM. Evidence for Dose Additive Effects of Pyrethroids on Motor Activity in Rats. *Environmental Health Perspectives*. doi: 10.1289/ehp.0900667 (available at <http://dx.doi.org/>) Online 8 June 2009