



Reducing **Low-Dose Pesticide Exposures** in **Infants** and **Children**

Clinical Response: Advice to Parents and Patients

Despite persistent uncertainties about the precise nature of threats to children’s health from individual pesticides, the data available suggest that precaution is needed. We know that children are exposed to numerous pesticides and often at higher levels than adults. We know that children can experience different toxicities than adults, which may result in permanent adverse effects on health. Current experience suggests that as other individual chemicals undergo careful scrutiny similar to that given to CPF, “safe” exposure levels for children are likely to fall below current standards for conventional pesticides. Further, little attention has been given to the effects of specific pesticide products which can include up to 99% inert—and potentially toxic—ingredients. Even more uncertainty surrounds the effects of exposures to chemical mixtures.¹⁸ It is reasonable, therefore, for clinicians to encourage their patients to minimize pesticide exposures as much as possible, particularly to pregnant women, infants, and small children, and to support community-based and legislative activities that will reduce pesticide use whenever possible.

Actions to Take at the Individual Level

- Eliminate all pesticide use for cosmetic purposes in the home and yard. In particular, eliminate all calendar-based pesticide use, including weed killers.
- Practice integrated pest management at home. Integrated pest management is a comprehensive, common-sense, and inexpensive approach to pest management that emphasizes preventing pest infestations and minimizes use of toxic chemicals.
 - ▶ Prevent infestations by carefully maintaining household structures such as screens, foundations, doors, faucets, and drains.
 - ▷ Trim plants and shrubs to keep them at least one foot away from buildings.
 - ▷ Remove piles of scrap wood, mulch, or leaves from around the outside of the house.
- ▶ Drain standing water and wear protective clothing to avoid mosquitoes.⁹⁸
- ▶ Limit food to kitchen and dining areas.
- ▶ Clean cooking and eating areas often and store foods in pest-proof containers.
- ▶ Dispose of trash regularly and often.
- ▶ Use chemical pesticides **ONLY** as a last resort for serious infestations.
 - ▷ Never use foggers or broadcast methods.
 - ▷ Never use outdoor or agricultural chemicals in the home.
 - ▷ Avoid use of no-pest strips, crack-and-crevice treatments,⁵³ and other forms of chemical pesticides that can present ongoing exposure sources.
 - ▷ Always use the least toxic chemical available in the most contained form, such as bait stations in child-resistant packaging.
 - ▷ Always follow directions on the package completely.
- Wash all fruits and vegetables before cooking or eating. Studies show that up to 90% or more of many pesticide residues on the surface of foods can be removed by peeling or discarding outer leaves and carefully washing with clean water and a scrub brush.^{41,55} Some foods, however, have been treated with systemic pesticides that cannot be removed by washing.
- When available, consider choosing USDA-certified organic foods.⁹² This program was launched in October 2002. In order to use the official USDA seal, food must be produced without conventional pesticides in addition to several other restrictions and pass government certification. A \$10,000 fine can be assessed for each violation by people selling or labeling products as “USDA organic” without satisfying USDA standards. Children eating substantial amounts of organic fruits and vegetables have been shown to have measurably lower pesticide exposures than children eating conventionally grown foods.²²





Actions to Support at the Community Level

- Advocate for integrated pest management in all school buildings, pre-kindergarten through university, as well as daycare centers, playgrounds and parks, and public buildings.⁹⁷
- Develop programs to reward landlords for practicing integrated pest management with local recognition, free advertising, or certificates of merit.¹⁵
- Insist on prior notification of pesticide use in or around public schools, public buildings, utility easements, etc. Support mandatory neighborhood notification laws at the city, county, and state level.
- Encourage institutions that feed children to offer organic foods, especially fruits and vegetables.
- Lobby local grocers to carry organic foods.

Actions to Advocate at the State/Federal Level

- Advocate for child-protective pesticide laws and regulations.
 - ▶ Support strict implementation of the Food Quality Protection Act.
 - ▶ Support a federal School Environmental Protection Act.
 - ▶ Support international treaties to limit persistent organic pollutants.
- Advocate for strong biomonitoring and environmental public health tracking programs.

INTEGRATED PEST MANAGEMENT

Integrated pest management (IPM) combines several types of pest management and control techniques. The goal of IPM is to employ strategies that are more efficient, healthier, and more environmentally sustainable in the long run. Unlike conventional pest management practices, IPM does not turn to chemical applications first. Managing pests is the first step in establishing a safe and practical pest control system. The EPA suggests the following:

1) Set an action threshold

Establishing the point at which a pest population becomes economically or environmentally detrimental is the first step in an IPM system. Mere cosmetic damage to fruits, vegetables, ornamental plants, or home lawns may not be serious enough to warrant control.

2) Monitor and Identify pests

Not all pests need to be controlled. Many organisms pose no threat to your home or garden, and some can be helpful in fostering plant growth or controlling other pest populations.

3) Prevent pest populations

Prevention is different depending upon the setting. In the house, preventing access and eliminating food and water sources are key. In the yard or garden, supporting a plant community that is not susceptible to harmful pests is an easy way to prevent pests from appearing in the first place. Know what plants are in your garden. Investigate the suitability of plants to your area. Look into planting varieties of plants that resistant to typically harmful pests.

4) Control

When prevention fails and dangerous pests reach the action threshold, control measures need to be taken. IPM can involve the use of chemicals, but always the least risky, most targeted to the pest, timed for the most effect in the pest lifecycle, and by the most contained distribution method. (See Resources for details.)



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