

PROMOTING HEALTHY ENVIRONMENTS FOR CHILDREN

Pesticides



KEY POINTS

A pesticide is a substance or mixture of substances intended to reduce the impact of insects, animals, unwanted plants, fungi, or other microorganisms.

- Pesticides are used widely in homes, businesses, and agriculture.
- When used appropriately, pesticides can have beneficial effects, including assisting in the prevention of the spread of disease and improving crop yields.
- Because of their widespread use (in homes, yards, schools, and parks) and pervasive presence in the environment and food supply, most children are exposed to pesticides, including during critical periods of development. Pesticides can be toxic to children and adults.
- Children in agricultural communities are at increased risk of exposure due to proximity to agricultural fields and take-home exposures from caregiver's work.
- Parents and families can take steps to help reduce children's potential exposure to pesticides.
- Research indicates that there may be life-long consequences resulting from exposure to certain pesticides.

CLINICAL GUIDANCE

Children can inhale, ingest, or touch pesticides leading to clinical effects.

- Low-dose chronic exposures during early life (preconception, pregnancy, early childhood) has been linked to neurocognitive and neurobehavioral deficits, childhood cancers (leukemia, brain cancer), and adverse birth outcomes such as reduced growth and preterm birth.
- Symptoms of an acute pesticide poisoning depend on the specific pesticide but can include headache, dizziness, tremors, fever, miosis, nausea, abdominal pain, flulike symptoms, and diarrhea with possible anxiety and restlessness.

When an acute poisoning is suspected or has occurred:

- Regional Poison Centers can help with patient evaluation and management. Contact <https://www.poison.org> or 800-222-1222.
- Serious poisonings should be managed with the guidance of a medical toxicologist and/or the regional Poison Center.
- The label of the chemical should be obtained whenever possible. The US EPA-mandated label contains concise information on ingredients, symptoms and signs, treatment guidelines, and a toll-free number for manufacturer assistance.
- In an agricultural exposure, the local county cooperative extension service may be able to provide valuable information about the local crops, chemical usage patterns, and modes of application.
- The identification and elimination of the source of the exposure may prevent future exposures of other children and adults.

Prevention is key!

- Inform families about [Integrated Pest Management](#) (IPM). IPM is an approach to controlling pests with a mix of nonchemical methods and safer chemicals, to provide the least toxic pathway to pest control.
 - Key steps of IPM include sealing cracks and holes that serve as pest entryways, storing food in sealed containers, cleaning up spills, and removing clutter (hiding places for pests).
 - If chemical treatments are needed, choose less-toxic options and time their use to be most effective (and when children are not present).
- Encourage safe pesticide practices, including:
 - Follow all instructions on the label of any pesticides used.
 - Store pesticides safely: keep in an area that children cannot access and do not put pesticides in unmarked containers, or in food or drink jars.
 - Do not use bug bombs or foggers inside the home.
 - For lawns and gardens, use nonchemical pest control methods whenever possible.
 - Keep children and their toys indoors when there is nearby aerial spraying or spraying that may drift near the home.
 - Do not enter a field that has been posted with signs indicating pesticide treatment.
 - Children and teenagers should avoid work that involves mixing or spraying pesticides.
 - If working with or exposed to pesticides, change clothes and wash with soap and water before picking up or playing with children.
 - Do not use pesticides from work in or around the house.
 - Dispose of pesticides safely.
 - Work with schools to ensure safer pesticide use practices.
- When shopping for fresh produce, consider choosing organic foods (when possible) to decrease risk of exposure, as children and adults who eat organic foods have lower levels of pesticide metabolites in their system.
- Wash all fruits and vegetables with running water before consuming.

ADDITIONAL INFORMATION

With the exception of poison baits, as little as 1% of pesticides applied indoors reach the targeted pest. The rest may contaminate surfaces and air in the treated building. Outdoor pesticides may fall on nontargeted organisms, plants, animals, and outdoor furniture and play areas. Material from the outdoor environment can be tracked indoors and add to exposure from dust, floors, and carpets. Pesticides applied outdoors may contaminate groundwater, rivers, or wells.

FOR MORE INFORMATION

The following resources offer additional information regarding pesticides:

- [Pediatric Environmental Health, 4th Edition](#) – AAP Policy Manual
- [Citizen's Guide to Pest Control and Pesticide Safety](#) – US EPA
- [Do you really need to use a pesticide?](#) – US EPA
- [Recognition and Management of Pesticide Poisonings, 6th Edition](#) – US EPA
- [National Pesticide Information Center](#)
- [Texas Agricultural Extension Service, Physician's Guide to Pesticide Poisoning](#)