NON-ACUTE PESTICIDE EXPOSURE & CHILD HEALTH

A pesticide is any substance or mixture of substances intended for preventing, destroying, or mitigating any pest. Children and pregnant women are uniquely vulnerable to toxic effects from exposure to pesticides. Some of the widely used pesticides of concern in the United States include the herbicide glyphosate, organophosphate insecticides (e.g., chlorpyrifos, malathion), carbamate insecticides (e.g., carbaryl, propoxur), neonicotinoid insecticides (e.g., imidacloprid, thiamethoxam), and pyrethroid insecticides (e.g., permethrin, cypermethrin). Chronic or repeated low-dose exposures are common. There is growing evidence on the relationship between this non-acute pesticide exposure in early life and adverse neurocognitive and neurobehavioral outcomes (ADHD, autism) in children. Additional associated morbidities include cancer (brain tumors, leukemia) and adverse birth outcomes (reduced intrauterine growth, preterm birth, congenital anomalies, fetal death).

Risk Identification as Part of Routine History Taking

Questions about pesticide use can inform potential for risk

01
Do you use or store pesticides anywhere in or around your home?

02
Does anyone in your home work with pesticides?

03
Do you live near an area frequently treated with pesticides?

Risk Reduction Based on Patient Risk & Concerns

Primary care providers are well-positioned to provide anticipatory guidance so that patients and families can limit pesticide exposure to prevent adverse health outcomes.

Many states require health care providers to report confirmed and suspected pesticide exposure. Find out if this is a requirement in your state -- and who to report to -- here.

After reporting, consider contacting your local PEHSU for consultation on pediatric pesticide exposure cases.
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<th>PESTICIDE EXPOSURE</th>
<th>WHAT WE KNOW</th>
<th>WHAT TO TELL PATIENTS &amp; FAMILIES</th>
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<td>FROM DIET</td>
<td>- The AAP recommends choosing organic produce as a way to reduce childhood pesticide exposure, but emphasizes that a diet high in fruits &amp; vegetables (either conventionally or organically grown) is most important for children's health when cost &amp; availability are factors. - Organic diets are associated with significant reductions in urinary excretion of several pesticide metabolites and parent compounds in children and adults.</td>
<td>- Choose organic when possible, but not at the expense of a diet rich in a variety of fresh produce. - Wash produce under running water – don't soak or dunk. - Scrub firm fruits &amp; vegetables. - Throw away outer layers of leafy vegetables. - Trim skin and fat from poultry, fish &amp; meats. - Here are links to the Environmental Working Group's (EWG) lists that may help consumers decide which organic produce to consider purchasing.</td>
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<td>IN HOMES, SCHOOLS &amp; DAYCARES</td>
<td>- Most U.S. homes have measurable levels of insecticides on the floors which may serve as a source of exposure to occupants, particularly young children. - Results achieved by using chemical pesticides alone are generally temporary, and repeated treatments are usually required. - Nontoxic or low-toxicity pest control methods are available for all common pest problems. - Many exposures result from inappropriate pesticide use. The label is the law. Reading pesticide product labels can help consumers choose the appropriate product and use it safely.</td>
<td>- Learn about the basics of Integrated Pest Management (IPM) on the EPA's Citizen's Guide to Pest Control and Pesticide Safety. Information on pest-specific problem management can be found at the University of California IPM site. - Keep pesticides out of reach and/or in a locked cabinet/shed, keep in original containers with labels intact, never reuse or repurpose old containers. - Remove children, pets, and toys prior to indoor application, and do not return until the amount of time specified on label. - Keep children away from pets after applying flea-control medication until dried, or as advised on label. - If hiring a pest control company, only hire one that is state licensed. Ask for the name, ingredients, and toxicity of products they may use.</td>
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References


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