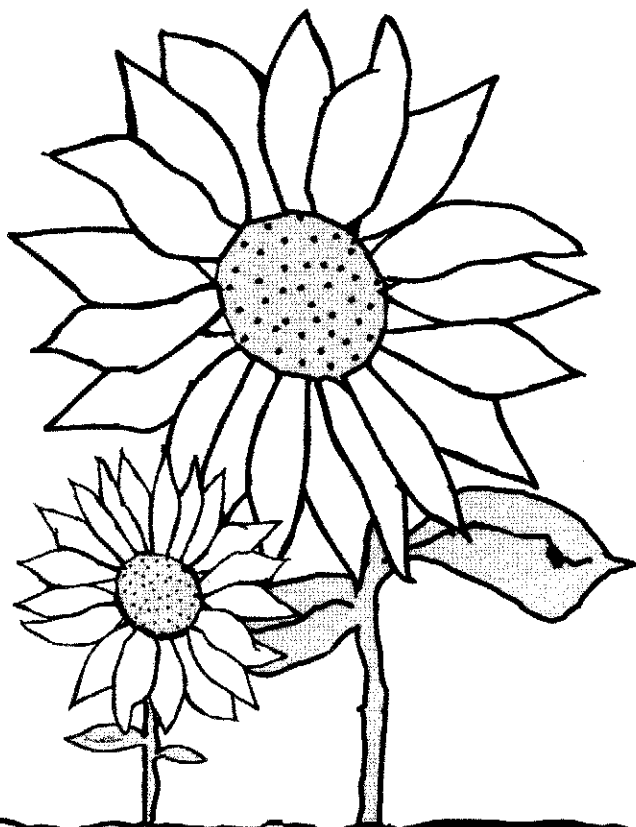


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R A I S I N G
C H I L D R E N
T O X I C F R E E



Herbert L. Needleman, M.D., and Philip J. Landrigan, M.D.

How to Keep Your Child Safe from Lead, Asbestos,
Pesticides, and Other Environmental Hazards

Foreword by
T. BERRY BRAZELTON, M.D.

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SUGGESTIONS FOR THE SAFE USE OF PESTICIDES IN THE HOME

No use of pesticides is completely safe. Infants and children are especially vulnerable to certain pesticides. Therefore, whenever possible, do not use pesticides at all. However, if you must use pesticides, follow these common-sense rules.

- **Purchase.** Find out about the substance before purchase. Is it approved by the EPA? Is the EPA reviewing it for health risks? Is it legal to apply the pesticide in the desired area? Are there other alternatives? Are there other formulations? Is it a fire hazard? How long is it effective? Is the pesticide suitable for the pest you want destroyed? To avoid storage health hazards, purchase only the amount you need to do the job.
- **Directions.** Read the directions on the container carefully *before purchasing*, again before using, and follow them, especially the safety precautions. If directions call for rubber gloves, masks, protective clothing, or goggles, leave this application to certified experts or use a less potent substance.
- **Spraying.** A 48-hour prenotification should be given prior to pesticide application to multiple-family dwellings. Inform your neighbors when you plan to use lawn-care pesticides or to treat for termites or roaches. Avoid spraying into the wind so that you do not inhale the sprays and dust. It is best to stay out of sprayed areas for at least the rest of the day. Work in well-ventilated areas. If spraying outdoors, close windows and keep children and pets indoors. Chemicals sprayed into the air or onto the ground can drift or wash into nontargeted areas.
- **Smoking.** Do not smoke while spraying or dusting. Some of the chemicals are flammable and you may inhale poisons along with the smoke or your hands may carry the pesticide to your mouth.
- **Play areas.** Children should not be allowed on a lawn or in a garden after the use of pesticides until the area has been watered and all residues washed into the ground and dried. All odor of pesticide should have disappeared before children are allowed to return. The usual instructions permitting reentry into the area one to two hours after spraying are inappropriate especially for crawling infants and toddlers.
- **Pregnant women.** Pregnant women should leave any area where a pesticide is being used and should not return until the chemical has dried completely and there is no odor remaining (usually at least eight hours).
- **Health problems.** Chemically hypersensitive individuals should be forewarned about the use of pesticides. Persons with known diseases of organs such as the kidneys or liver should be excluded from exposure to pesticides that affect those organs. The package directions should list the symptoms of an adverse effect of the pesticide.

**SUGGESTIONS FOR THE SAFE USE
OF PESTICIDES IN THE HOME (cont.)**

- *Furniture.* Cover furniture and wading pools. Cover or remove bird-baths, dog dishes, and fish pools before spraying.
- *Fruits and vegetables.* Avoid spraying fruits and vegetables ready for harvest and allow the full time recommended between spraying and picking for consumption. Wash, scrape, and peel appropriate vegetables and fruits before eating them.
- *Wash hands.* Wash your hands and those of your children thoroughly after using pesticide and especially before eating or smoking.
- *Contamination of skin and clothes.* Avoid getting pesticides on your skin or your child's skin. If they are spilled on the skin, wash off immediately and thoroughly for at least fifteen minutes and change clothing. Change clothing and bathe thoroughly at the end of each operation involving pesticides. If clothing becomes contaminated, wash and launder the contaminated clothes before wearing. Do not wear contaminated clothing into your home. Avoid wearing leather when using pesticides, because exposed leather is impossible to decontaminate and must be discarded.
- *Storage.* Store the pesticide in its original container, with the original intact label, in a safe locked compartment, away from children and pets. *Never* transfer containers. Containers used for mixing are considered contaminated.
- *Disposal.* "Empty" containers are never completely empty. Contact the Department of Health or the EPA about proper method of disposal. Destroy empty containers immediately. Wash out the container twice before placing it in the trash and punch holes in the top and bottom.

RECOMMENDATIONS WHEN PURCHASING CHEMICAL LAWN-CARE SERVICES

We strongly advise that you and your neighbors *not* use chemical lawn services. The immaculate, perfectly green lawn is not a necessary component of human existence, and the chemicals used to achieve it are extremely toxic to you and your children. But if you must . . .

- Written contracts should be obtained with written notice prior to spraying in subsequent seasons, if an automatic renewal policy exists. Oral agreements are not sufficient or valid. Prior notification is important to allow time to remove toys, cover lawn furniture, pet-food dishes, and wading pools, and warn individuals with chemical hypersensitivity.
- Obtain information before application of lawn-care substances: names of pesticides to be applied, precautions to be taken to ensure safety for family members, pets, label warning, time and date of spraying. Many companies provide Pesticide Fact Sheets. Are there nontoxic alternatives without pesticides?
- Give advance notice to neighbors, including all the information you have received, and post warnings on treated lawns. This is particularly important if neighbors are chemically sensitive individuals.
- Pesticides should not be applied under adverse conditions—for example, during high winds.
- Check if the applicators are trained and certified.
- Know the potential acute and chronic health effects of the pesticides to be used.
- Is the EPA presently testing the product for any health risks?
- How long should residents wait after pesticide application before using the premises? Are there specific recommendations for the reentry of children and pregnant women to the premises?
- Does the lawn-care service company carry liability insurance to cover claims for personal injury? Check your homeowner's insurance for "pollution exclusion" clause which excludes coverage for environmental damage.
- Outdoor lawn pesticide applications should have signs indicating "pesticide treated area" with international "Do Not Walk on the Grass" symbol for at least 24 hours. Notices should be placed 24 to 48 hours in advance of spraying. They should contain the date of the application, the name(s) of active pesticide ingredient(s), the name and phone number of applicator, and proposed date of the next application.

**STEPS PARENTS (AND TEACHERS) CAN TAKE
TO REDUCE SCHOOL PESTICIDE USE***

- Meet with your school principal and grounds maintenance personnel. Ask about current pesticide use practices:
 - Which weed and insect pests are present (if any)?
 - What chemicals or other means are used to control them?
 - When and how often are pesticide applications done (on a schedule or only when a pest problem is present)?
 - Who makes the decision about whether to use pesticides?
 - Who does the actual application (school personnel or outside contractors)?
 - Is there a written record of reasons and justification for pesticide use?
 - Are alternatives considered?
 - Is advance notice given of treatment? To parents? To teachers?
 - Is there an appeals process if parents wish to challenge a proposed use of a pesticide?
 - Are treated areas posted?
 - Are adequate records kept of pesticide application?
 - Is the school nurse trained to recognize pesticide poisonings?
- If you are not satisfied with the answers you receive, express your concerns to the school superintendent, school board, and school district management. Raise your concerns to the Parent-Teacher Association, and find other allies among the parents and teachers. NCAP can help you with information about the particular pesticides being used.
- Do your research, and go to meetings prepared to suggest a nonchemical policy alternative. Read NCAP's *Planning for Nonchemical School Ground Maintenance* (see page 129 for ordering information). Alternative controls are available for most weed and insect problems. Preventing the conditions that lead to pest problems is often the most successful (and least toxic) way to get rid of a pest problem.
- Work to get a standing citizens committee set up to oversee the development and implementation of the new policy. Involve as many interested parties as possible, and be sure that the committee meets regularly to review the progress and setbacks as the new policy is carried out.
- It may be desirable to consult (or even hire) an integrated pest management specialist when developing a policy for your district. Such a specialist can tailor a grounds or interior maintenance plan to the specific needs and conditions of your area. If your school district is small, consider getting several districts to jointly sponsor the visit of such an expert, to help defray costs.

* This list is produced with the permission of NCAP, the Northwest Coalition for Alternatives to Pesticides.

**STEPS PARENTS (AND TEACHERS) CAN TAKE
TO REDUCE SCHOOL PESTICIDE USE (cont.)**

- Remember that your school grounds and maintenance staff must be involved in the development of any new policy. They are the ones who will have to make the policy work, and they will work harder for the success of a program if they have a sense of participation in it. Otherwise, they may feel that the new policy is unnecessary, impractical, or forced on them by others. After the policy is developed, make sure all existing and new staff are trained in its principles. Encourage ongoing training and celebrate program milestones.
- Don't forget to involve the teachers and students. Helping implement a grounds design and school maintenance policy can be a rewarding educational experience. Students can be involved in digging weeds and beds, planting trees and shrubs, etc., for a low-maintenance landscaping project, while learning about insects and natural predators, the toxic effects of chemicals, and environmentally sound ways of managing our natural resources.
- There are many other products used in schools that are, or may contain, hazardous materials. These include plywood and particle board (containing formaldehyde), asbestos, wood preservatives (especially those containing TBT or PCP), paints and additives, urethane, etc. Working with your school's PTA, principal, maintenance staff, and district purchasing department, take inventory of these items, and then research less toxic alternatives. You may want to ask your school district to do air testing for formaldehyde levels.

The application of pesticides to control termites is an inherently dangerous procedure. We realize that in some areas of the country, particularly in the southern states, it is absolutely necessary to control termites in order to keep houses from collapsing. However, the procedure must always be carried out with great care and only by licensed applicators. Parents should make sure that no chlordane is used for termite control and that the chemicals being used are not carcinogenic for their children. The only effective way to obtain this information is to actually examine the labels on the chemicals that are to be used and, when in doubt, check these labels with the EPA.

Parents who live in agricultural areas and near farmlands should pay close attention to scheduled pesticide flyovers. Children should be kept indoors whenever possible during such spraying.



APPENDIX 1 THE HOUSEHOLD INVENTORY*

HOUSEHOLD QUESTIONNAIRE



THE HOUSE/THE APARTMENT

- | | |
|---|---|
| 1. How old is your house? | 1. Almost all homes built before 1945 contain leaded paint. If paint is intact and is not flaking, peeling, or chalking, it does not present a current risk. |
| 2. Are there surfaces with peeling paint? | 2. If surfaces are peeling or flaking, the paint should be tested and then removed by an experienced contractor. The improper removal of paint can increase the amount of lead in the dust of the home and sicken workers and residents. When lead paint is being re- |

This appendix is based on material developed by Sophie Balk, M.D., Assistant Professor of Pediatrics, Albert Einstein College of Medicine. The original material appeared in the manual "Kids and the Environment—Toxic Hazards," edited by the Children's Environmental Health Network, California Public Health Foundation. The sponsors for this project were the Agency for Toxic Substances and Disease Registry and the California Department of Health Services.

moved, residents should be relocated, the rooms being treated should be isolated, and no one should move back in until the area has been cleaned thoroughly and tested for safety.

- | | |
|---|---|
| 3. Are the windowsills peeling? | 3.-4. Windowsills and window wells are often sites of high lead content. |
| 4. Do the window wells contain solid material? | |
| 5. Is the plumbing more than 40 years old? | 5.-8. Older homes are more likely to have lead pipes and newer homes may have lead in the water supply due to leaded solder joints that have not had a chance to be coated by dissolved minerals. |
| 6. Is the plumbing less than 5 years old? | |
| 7. Do you have lead pipes? | |
| 8. Has your water been tested for lead? | |
| 9. Do you have a basement? | 9.-10. If the pipes are insulated, the insulation may contain asbestos. |
| 10. Are the basement pipes insulated? | |
| 11. Are any of the ceilings covered with sprayed-on or troweled-on material? | 11. These substances have in the past contained asbestos. |
| 12. Are there sleeping or playing areas in the basement? | 12. Basements are the site of radon entry into the home. Basement bedrooms or playrooms increase exposure time to radon if it is present. |
| 13. Are there cracks in the basement floor?
Walls?
Gaps between basement ceiling and walls? | 13. Cracks or gaps provide entry to radon gas. They can be readily and inexpensively repaired. |
| 14. Do you have one or more working fireplaces?
Does smoke enter the room when you use it? | 14. Fireplaces that are inadequately ventilated are sources of indoor air pollution. |

15. Do you have a wood-burning stove? Is it properly vented?
15. Wood-burning stoves must be adequately vented or they can introduce carbon monoxide and other combustion products into the room.
16. Do you have storm windows?
16. Tightly sealed homes may have higher levels of indoor pollutants.
17. Has your house been treated for termites in the past 3 years?
- 17.-18. You should know the agent used and its toxic properties.
18. Do you know the agent used?

APPLIANCES

19. Do you have a gas stove?
- 19.-21. Natural gas stoves are a source of nitrogen dioxide (NO_2), a respiratory irritant. Stoves with a gas pilot are the worst offenders. If your home has such a pilot, we recommend turning it off and replacing it with a spark pilot or using a butane grill lighter or a match. Gas stoves are dangerous when used to heat the living space.
20. Does it have a pilot burner?
21. Do you use it for heat?
22. Do you use kerosene space heaters?
22. Kerosene space heaters add combustion products and particulates to the indoor air. Their use should be avoided. Quality electric or oil-filled radiators are nonpolluting.
23. Do you use a gas clothes dryer?
23. Gas clothes dryers should be adequately vented.
24. Do you have hot-air heat?
24. Hot-air heaters should be cleaned and inspected and their filters changed as recommended by the manufacturer.

- | | |
|---|--|
| 25. Do you have an electronic air precipitator? | 25. Some electronic precipitators can increase the amount of ozone in the residence. |
| 26. Do you have a furnace humidifier? | 26. Furnace humidifiers can be sources of airborne bacteria. |

GROUNDS

- | | |
|--|--|
| 27. Do you use pesticides on your lawn? | 27.-28. Some pesticides are neurotoxic; some are carcinogens. Attractive lawns can be had without wholesale use of these toxins. We do not recommend the use of proprietary lawn services. |
| 28. Do you use a proprietary lawn pesticide service? | |

CHEMICALS

- | | |
|--|---|
| 29. Do you store pesticides in the house? | 29.-30. Do not store pesticides in the house. Buy only as much as you need, and dispose of the rest in an environmentally safe manner. |
| 30. When you are through with them, do you dispose of them through a hazardous waste facility? | |
| 31. Do you keep old prescription drugs in the medicine cabinet? | 31. Dispose of old prescription drugs. |
| 32. Do you keep motor oil or gasoline in the house or garage? | 32.-33. These products should not be stored in the house, or in the garage if it is attached to the house. They are sources of indoor air pollutants. |
| 33. Do you keep solvents such as alcohol, toluene, dry-cleaning, or degreasing materials in the house? | |
| 34. Is your home insulated? Do you know what type of insulation? | 34. Formaldehyde is a component of urea-formaldehyde blown-in foam insulation. It can cause eye and respiratory irritation. If you have such insulation, or these symptoms, you may want to test your air |

for formaldehyde. EMSYS/Air Quality Research, P.O. Box 14063, Research Triangle Park, NC 27709, sells a home monitor.

SMOKING

35. Does anyone in the house smoke?
36. How many people?
37. What is the total number of packs consumed per day?
38. When driving with children, does anyone smoke in the car?
- 35.—38. The most important cause of indoor air pollution is smoking. Smoke-free homes breed healthier, smarter children.

HOBBIES

39. Are the following hobbies practiced in the home?
 Making fishing weights?
 Making self-loading bullets?
 Making stained-glass windows?
 Making pottery?
 Making jewelry?
39. These hobbies can release heavy metals or solvents into the air that are toxic to the hobbyist and others in the home. They should be carried out only in well-ventilated areas, away from children, and the hobbyist should change his or her clothes before entering the home.
40. Do you use any of the following products: toilet-bowl cleaners, room deodorizers, polishes, varnishes, or paint thinners?
40. The use of these products should be minimized. They should be stored outside the home.