



## No. 25: Developing a Pesticide Exposure History

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### BACKGROUND

When exposure to pesticides (insecticides, herbicides, fungicides, rodenticides, etc.) is suspected as a cause of or contributing factor in a medical problem, a detailed and accurate exposure history is critical to a correct diagnosis. Definitive diagnostic laboratory tests do not exist for most classes of pesticides at present, therefore, the exposure history, combined with knowledge of the potential toxicity of the pesticide in question, is often the only tool the clinician has.

Few exposure history questionnaires in general use are specific to pesticides. Additionally, the clinician may occasionally confront cases whose exposure is not occupational but instead from the patient's general surroundings. This pamphlet presents questions that should be helpful in addressing both of these situations in enough detail to provide the clinician with an accurate picture of pesticide exposure.

### REQUIRED TOXICOLOGICAL TESTING

The U. S. Environmental Protection Agency (EPA) regulates the use of pesticides in the United States. Before a pesticide can be approved for use, acute, subacute, chronic, and subchronic tests must be submitted as part of the battery of tests required.

### PESTICIDE INGREDIENTS

#### Active Ingredients

Active ingredients in pesticides are simply the compounds that are responsible for the desired action against the pest (*e.g.*, death, interference with feeding or maturation, sterilization, etc.). The active ingredient(s) in a pesticide product may also have the potential to cause illness or injury in humans.

It can be very difficult to document exposure to a particular pesticide or group of pesticides. While common or chemical

names of active ingredients are necessary to investigate potential toxic effects associated with a product, often, an individual will know only the product's brand or trade name. Ask the patient to bring in a copy of the pesticide label, which is required to list all active ingredients in the product. Pesticide handlers may not be able to recall the trade name of every product they have used. Consumers often do not know the names of products they have used or have had applied to their surroundings. Individuals not occupationally exposed may not know whether a pesticide was, in fact, applied.

If the patient is able to supply a trade or brand name, consult the *Crop Protection Handbook* (published yearly by Meister Publishing Company) or contact your local Extension office, listed in the blue pages of your telephone book, or at [extension.umd.edu/locations](http://extension.umd.edu/locations) for help in ascertaining the common name. If the patient is unable to supply even a trade name for the product, ask whether the product was an herbicide, insecticide, fungicide, etc. (or, "Was the product applied to control a weed? An insect pest? A plant disease?"), then contact Extension for help in determining what chemicals may have been applied to the site in question at that particular time. If you are unable to determine the exact ingredients of the product, correctly identifying the class of chemical (*e.g.*, organophosphate, pyrethroid, thiocarbamate, chlorophenoxy, etc.) will help you to figure out whether the symptoms reported are likely to be associated with the chemical.

### **Inert Ingredients**

Along with active ingredients, pesticide products also contain inert ingredients that

are added to improve handling characteristics of the mixture (*i.e.*, emulsifiers, spreading or sticking agents, etc.). These inert ingredients, however, may still have the potential for harmful effects in humans and may be the actual cause of some medical problems related to exposure to a pesticide product.

The label is required only to list the amount of inert ingredients; to protect patents, the actual identification of inerts on the label is not required. EPA has developed a list of acceptable inert ingredients that pesticide manufacturers may use without a requirement for submission of further data, and a list of inert ingredients which require further data to be submitted before the product can be approved for use. At the time of this leaflet's most recent update, the Agency was discussing providing more transparency about specific inerts used in pesticide products.

### **NON-PESTICIDE SUBSTANCES**

Even if the patient can document exposure to the pesticide(s), consider other causes for the symptoms. Pesticide handlers often are also exposed on the job to solvents, paints, degreasers, and disinfectants. Many of these chemicals have the potential to cause adverse effects on their own. Heat stress, which shares some symptoms with acute organophosphate poisoning, is also a risk for some pesticide applicators. Likewise, consumers are exposed to household chemicals, various compounds at work, and chemicals associated with hobbies such as glues and epoxies (through arts and crafts, model building, carpentry projects, etc.), solvents and paints (from household projects, boat or car maintenance), etc.

# PESTICIDE EXPOSURE HISTORY

Patient's name \_\_\_\_\_

Birth date \_\_\_\_\_ Sex: M F \_\_\_\_\_

## I. Symptom Profile

### A. Symptom Description

1. Describe the symptoms you are experiencing:

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### B. Symptom History

1. When did these symptoms begin? \_\_\_\_\_

2. Did the symptoms stop or lessen when the exposure stopped?

No Yes N/A: exposure has not stopped

3. Have you had these symptoms before?

No Yes → Did any medical personnel make a diagnosis at that time?

No Yes → What was the diagnosis?

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4. Do you feel better

- during the week
- on weekends
- at other times → Explain when:

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## II. Lifestyle Profile

### A. Occupational Profile for Individuals Exposed to Pesticides at Work (Patients *not* occupationally exposed to pesticides should skip to Section II. C.)

Please fill in the table below, listing all jobs you have worked, including short-term, seasonal, part-time employment, and military service. Begin with your current or most recent job. Use additional paper if necessary. Under “Exposures,” list the pesticides (insecticides, herbicides, weed killers, fungicides, rodenticides, bird killing agents, etc.) you mixed, applied, or otherwise handled during each employment period.

Dates of Employment	Job Title and Description of Work	Exposures

**B. Occupational Exposure Inventory for Individuals Exposed to Pesticides at Work**  
(Patients *not* occupationally exposed to pesticides should skip to Section II. C.)

1. Have you ever missed work for more than one day because of an illness related to work?

No    Yes → Describe the illness:

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2. Have you ever been advised to change jobs or work assignments because of any health problems or injuries?

No    Yes → Explain:

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3. Have you ever been diagnosed with pesticide poisoning, insecticide poisoning, organophosphate or carbamate poisoning, or told that your cholinesterase level was too low?

No    Yes → When? \_\_\_\_\_

→ At that time, were you told to stop working with organophosphate or carbamate insecticides (or to stop applying insecticides) for a period of time?

No    Yes → For how long did you have to stop working with insecticides?

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4. Has your work routine changed recently?

No    Yes → Explain:

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5. Are you responsible for mixing and/or loading concentrate pesticides?

No    Yes → Do you know the protective clothing and gear required on the pesticide label for mixing and loading the pesticides you use?

No    Yes → Do you always wear the required protective clothing and gear while mixing/loading pesticides?

No    Yes

6. Are you responsible for applying pesticides?

No    Yes → Do you know the protective clothing and gear required on the pesticide label for applying the pesticides you use?

No    Yes → Do you always wear the required protective clothing and gear while applying pesticides on the job?

No    Yes

7. Does your job require you to work with pesticides in an enclosed area (greenhouse, store room, etc.)?

No    Yes → Do you wear respiratory protection while in the enclosed area?

No	Yes → dust mask?	No	Yes
	→ respirator?	No	Yes
	→ goggles?	No	Yes

**C. Occupational Profile for Individuals Not Exposed to Pesticides at Work** (Patients who *are* occupationally exposed to pesticides should fill out Section II A and II B instead.)

The following questions refer to your current or most recent job:

Job title: \_\_\_\_\_

Type of industry: \_\_\_\_\_

Date job began: \_\_\_\_\_

Are you still employed in this job?    Yes    No → When did the job end?

\_\_\_\_\_

## D. Lifestyle Description

1. Do you live next to or near an industrial plant, commercial business, dump site, or nonresidential property?

No    Yes

2. Which of the following do you have in your home?

- |  |   |                                   |                                     |
|--|---|-----------------------------------|-------------------------------------|
| <input type="checkbox"/> air conditioner | <input type="checkbox"/> electric stove | <input type="checkbox"/> gas heat | <input type="checkbox"/> wood stove |
| <input type="checkbox"/> air purifier    | <input type="checkbox"/> gas stove      | <input type="checkbox"/> oil heat | <input type="checkbox"/> fireplace  |
| <input type="checkbox"/> humidifier      | <input type="checkbox"/> dehumidifier   |                                   |                                     |

3. Have you recently acquired new furniture or carpet, refinished furniture, or remodeled your home?

No    Yes

4. Have you weatherized your home recently?

No    Yes

5. Do you have any hobbies or crafts?

No    Yes → List:

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6. Do you work on your own car, boat, or other vehicle?

No    Yes

7. Have you ever changed your residence because of a health problem?

No    Yes

8. What is your drinking water source?

- a private well
- city water supply
- bottled water

9. Do you use pesticides (including bug killers, weed killers, fungicides, ant and roach sprays; pet flea and tick treatments; pet collars, powders, or shampoos; or other pesticides)?

No      Yes → inside the house/apartment?

No      Yes → how often?

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→ outdoors on the lawn or gardens?

No      Yes → how often?

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10. Do you think anything at work, school, or home could be causing or contributing to the symptoms you are experiencing?

No      Yes → Explain:

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### III. Pesticide Exposure Profile

#### A. Exposure Scenario

1. How did the exposure occur?

- Direct exposure (a pesticide was applied while you were in the spray area)
- Indirect exposure (a pesticide was applied while you were near the spray area)
- Exposure to residue(s) in a treated area
  - inside your home
  - in your yard
  - at school or work
  - other → Explain:

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- Exposure to residue(s) in food
- Exposure to residue(s) in drinking water
- Other → Explain:

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2. When did the exposure occur? \_\_\_\_\_

3. How long did the exposure last? \_\_\_\_\_

#### B. Exposure Inventory

1. List the pesticide(s) you were exposed to:

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2. How do you know that you were exposed to this/these pesticide(s)?

- You or a family member applied the pesticide
- The pesticide applicator (or the applicator's company) informed you that you were exposed to the pesticide(s)
- Other → Explain:

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