



# Cornell University Program on Breast Cancer and Environmental Risk Factors in New York State (BCERF)

February 1999  
FACT SHEET #21

## Avoiding Exposure to Household Pesticides: Protective Clothing

*It is important to take proper precautions to minimize your exposure to pesticides, because direct or repeated exposure can cause harmful health effects. This fact sheet summarizes the steps you can take to minimize your exposure to pesticides by wearing the right protective clothing. Choosing to wear protective clothing and properly cleaning pesticide soiled clothing, can reduce you and your family's exposure to pesticides.*

### Choose the best pest control method

Choosing the best method for controlling pests in your home or garden is important. Your local Cooperative Extension Educator can help you choose the best solution to control unwanted weeds, insects, molds or rodent pests. Not all solutions rely on chemically based pesticides. One example is Integrated Pest Management (IPM), which emphasizes biological controls and observation to control pest problems, using pesticides only when necessary. If you decide to use a chemically based pesticide, make sure it will get rid of the specific pest, and only buy enough to do the job.

### Read the label

The label is your first and best source of information on the proper use of the product. The label can give information on the types of protective clothing and eye protection you should wear when using the product.

- **Look for Signal Words: Caution, Warning and Danger**  
The label may have signal words describing the level of hazard to your health presented by the product. The federal government has defined these words so that the least hazardous products are labeled with the word **Caution**, products with greater risk with **Warning** and the most hazardous with the word **Danger**. These signal words are a good initial indicator of the level of precaution you should take.
- **Follow the Label's Directions and Cautions**  
Many labels contain "Precautionary Statements" such as "Hazardous to Humans and Domestic Animals." This statement may include information on the need for adequate ventilation and how long you should avoid a treated area. Carefully read this section of the label. Always follow the

"Directions for Use" on the product label, since misuse can lead to unnecessary and potentially harmful exposure to the pesticide.

### Example of a precautionary statement

Hazardous to Humans and Domestic Animals  
**Caution:** Harmful if absorbed through the skin. Avoid contact with the skin, eyes or clothing. Wear gloves during application. Wash hands thoroughly with soap and water after handling.

### • Know the Ingredients

The label will list the product's ingredients. Look at both the active ingredient (the pesticide) and any solvent used in the product. In the case of organic solvents, also called "petroleum distillates," you should take steps to protect yourself from both the solvent and the pesticide.

### Take time to prepare

- **Notify Your Family or Housemates**  
Before using a pesticide, tell the rest of your family or household to stay away from the treated area and when it is safe to re-enter the treated area. This will help to reduce their exposure to the pesticide.
- **Keep Children and Pets Away**  
Children and pets should be kept out of the area where a pesticide is being used, for their safety and yours. For instance, animals and children that play in areas which are newly treated with pesticides may expose themselves to the chemicals and may also bring the pesticides into the home on their clothing, shoes and hands (feet or fur).



## Dressing for the task

The label provides important guidelines for how to dress for the task. Your choice of protective clothes depends on the type of work that you will be doing. Spraying a fruit tree is quite a different task from placing an ant trap, but both require the right protective clothing and practices to minimize exposure.

It is best to keep a separate set of work clothes just for when you handle pesticides. Protective clothing should cover the areas of your body that are easily damaged or come into the most contact with the pesticide. These areas include the eyes and skin, especially the skin on the hands and feet.

Pesticides can be absorbed through the skin  
**REDUCE YOUR RISK - COVER UP**

### • Protect Your Hands

Wear gloves to keep the pesticide off your skin. Many dishwashing and yard work gloves do not provide enough protection for working with pesticides.

The best gloves for working with pesticides are unlined neoprene or nitrile rubber gloves.

✓ Rubber gloves are the best choice when working with pesticides. Look for rubber gloves made of **nitrile** or **neoprene**. They provide the best barrier to pesticides and solvents in the product. The gloves should be unlined, so that the lining will not absorb the chemicals or hold them against the skin.

✗ Plain latex dishwashing gloves do not protect against many pesticide products.

Wash your rubber gloves to remove the pesticides. While they are still on your hands, wash the gloves with soap and water under a garden hose or at an outside sink. Then, rinse the gloves thoroughly with water. Rinse the inside of the gloves. Check the gloves for leaks by filling them with water and holding them shut for a few seconds. Check for leaks in the fingertips. If there is a leak in the gloves cut the fingertips off and throw the gloves in the trash. If the gloves pass inspection then hang them outside by the fingertips on a line to dry. Do not turn the gloves inside out. Always wash your bare hands with soap and water after removing the gloves.

✗ Cotton gardening and work gloves should not be worn when working with pesticides. The cotton of the glove can absorb the pesticide and hold it against your skin.

✗ Leather gloves should not be worn when working with pesticides. They are difficult to decontaminate and are porous allowing pesticides to easily pass through the leather to your skin.

Several products that are commonly used throughout the house or on pets contain pesticides. These include: flea shampoos, roach traps, pest strips and rodent bait. When using these products protect yourself by wearing a pair of rubber gloves. Always wash your hands thoroughly after using these products.

### • Protect Your Eyes

Protect your eyes when working with pesticides. Not only can the pesticide damage eyes, but also the solvents used to dissolve the ingredients may be harmful.

✓ Goggles are the best choice for eye protection. Look for goggles without air holes. Small holes along the side can allow fumes or mist from a pesticide product to become trapped inside the goggles.

Safety glasses are acceptable if the label requires “eye protection” but does not specify “goggles.” Safety glasses should not be confused with regular vision correction glasses or sunglasses. Safety glasses are typically plastic glasses covering the eye area and with brow and side guards on the frame for extra protection.

### • Protect Your Feet



Feet are heavily exposed to pesticides in many uses. Dusting lawns and spraying bushes and trees produces a wide area of application that you walk through as you work. Keeping your feet

covered is very important, especially since the skin on the feet easily absorbs chemicals. Always wear long socks and boots.

✓ The best material for boots is rubber. The rubber provides a barrier to both water- and solvent-based pesticides. Unlined rubber boots will not absorb the chemicals or trap them against the skin. Boots should reach up to mid-calf or the knee. Rubber shoes are the next best choice.

Removing pesticides from a pair of rubber boots or shoes is done by washing them with soap and water under a garden hose or outside in a sink. Rinse the boots thoroughly and stand them in the sun to dry.

Alternatives to rubber boots or shoes provide less protection and present greater problems in decontamination. A possible

alternative is a pair of canvas tennis shoes. They can be washed with the other clothing you wore to apply pesticides.

⊘ Never wear leather sneakers, shoes or hiking boots when applying pesticides. Pesticides can penetrate the leather. Once a pesticide is in the leather, it is very difficult to remove.

⊘ Never apply pesticides without protecting your feet.

No bare feet



No sandals



#### • Protect Your Skin

✓ The skin is the primary route of pesticide exposure. Covering your arms and legs is important when protecting yourself against exposure to pesticides. After you have completed a task that requires the use of a pesticide, always take a shower and wash your hair thoroughly.

✓ Wear long pants to cover your legs. Heavy twill or denim pants work well. Do not wear pants made of a loosely woven fabric.

⊘ Never wear shorts when working with pesticides. In tests of sprayed pesticide application, the area of the body with one of the highest exposures to pesticides was the thigh.



✓ Wear a long sleeve shirt of chambray or a medium weight cotton to protect your arms. To protect your chest and neck, button the shirt up to the neck.

⊘ Never apply pesticides bare-chested or while wearing a sleeveless or midriff-baring shirt.

✓ Add another layer of clothing for heavy or long exposure to a pesticide. Coveralls provide an added layer of protection between you and the pesticide. They come in several forms. One type of coverall is a disposable one-time use garment, usually made of Tyvek® or a similar material. Coveralls may also be purchased as cotton twill or cotton/polyester twill jumpsuits that can be laundered and added to your set of pesticide designated work clothing.



#### • Protect Your Head

✓ Always wear a broad brimmed rain hat when tasks require applying pesticides over head, like spraying fruit trees. A broad brimmed hat will protect your head and the back of your neck. Wash the hat with soap and water the same way as your boots and hang it to dry.

⊘ Straw gardening hats and baseball-type caps do not provide adequate protection for your head and neck.

#### • Protect Your Lungs

✓ Use appropriate breathing protection when working with a powdered or granular pesticide. Unless the label requires a specific respirator, wear a fine mist filter mask with two rubber bands that fasten it around the head, a metal nose flange, and a rubber or foam seal. Make sure that the seal is fitted to your face with no gaps and that the metal nose flange is formed to the bridge of your nose. One band of the mask passes over the crown of the head and the other passes behind the neck.

If a product label specifies you need a respirator for breathing protection, make sure you use the type that is recommended. Follow the directions that come with the respirator for proper use, fit and maintenance.

⊘ Never wear surgical masks or dust filters for protection. They gap, allowing powders to enter the mask area and get into your nose and mouth.

#### Clothing clean-up

Always wash your clothing immediately after using a pesticide. Wash pesticide-soiled clothing separately from ANY other laundry. This is important to prevent spreading pesticides to your family's clothing. Follow these guidelines:

##### • Remove Soiled Clothing

Promptly remove all clothing (outerwear, underwear, socks and washable shoes) worn during pesticide application for laundering. Do not wear clothing into living or food preparation areas. If you can't wash your clothes immediately store them in a closed plastic bag, away from family and pets. Always wash them before wearing them again.

##### • Pre-Rinse Soiled Clothing

Place the clothes in a basin containing a pre-rinse solution, or on a clothes line outdoors where they can be rinsed with a hose. They can also be pre-rinsed in the washing machine.

**Always wash your pesticide application clothing separately from any other laundry**



- **Wash Your Work Clothes**

The washing machine is the best method available for removing pesticides from soiled clothing. The best results for removing pesticide residue from clothing come with a combination of:

- the **HIGHEST** water level
- the **HOTTEST** water setting
- the **LONGEST** agitation time
- the **FULL** recommended amount of detergent

- **Decontaminate the Washing Machine**

Remove the clothes from the washing machine. Leave the washer on the current settings, and add more detergent to the drum. Run the washing machine with only soap and water. This will clean the drum and prevent contamination of future loads of laundry.

- **Hang Work Clothes to Dry**

Hang your pesticide work clothes outside to dry. Hanging clothes to dry outside allows any lingering chemical to be exposed to the sunlight, which helps to break down the chemicals found in many pesticides. If the clothes cannot be dried outside then place on a clothes-horse inside to dry.

⊘ Never place clothing that has been used to apply or work with pesticides in the dryer. This increases the risk of contaminating other articles of clothing.

- **Storing Laundered Clothes**

Store your cleaned pesticide clothing separately from other clothes.

This information is provided as a guide for protective clothing that should be worn when applying pesticides in or around the home and garden. Always read the pesticide label prior to handling or using any pesticide. The label provides the necessary information relative to the product's use, restrictions and recommended proper personal protective equipment. Individuals who are employed as mixers, loaders, or pesticide applicators need further instruction on the correct use of pesticides.


For more information about pesticides and personal protective equipment, contact Cornell University's **Pesticide Management Education Program (PMEP)**.  
PMEP, 5123 Comstock Hall, Ithaca, NY 14853  
Phone: 607 255-1866, Fax: 607 255-3075  
URL: <http://pmep.cce.cornell.edu/>

**A bibliography on *Avoiding Exposure to Household Pesticides: Protective Clothing* is available on the BCERF web site: <http://www.cfe.cornell.edu/bcerf/>**

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