

What about pesticide exposures in older adults?

Some groups of people, such as older adults, people with health conditions, those who are pregnant, or infants and children, may be more sensitive to pesticides. The size of the elderly population is increasing. Recent studies show that by the year 2030 one out of every five Americans will be age 65 or older.¹ This fact sheet provides a summary of factors that could increase the pesticide risk for older adults.

Can pesticides enter the body more easily as people age?

In order for a pesticide to affect you, it must be absorbed into your body by swallowing it, breathing it, or getting it on your skin. As we grow older, the chances of absorbing pesticides into the body may increase for several reasons.

The outer layers of our skin become thinner as we age. Because of this, pesticides that are absorbed through the skin of young, healthy adults may enter more quickly through the skin of older adults.² This may cause an older person to absorb more of a pesticide compared to a younger person, even if the amount of pesticide that contacts the skin is the same.

The thinner skin of older adults is also more easily damaged upon contact with a pesticide. This damaged skin, however, is slower to become red or irritated. It may take longer for older adults to realize that they need to wash harmful chemicals from their skin simply because it takes longer for the skin to react to the pesticide.³ Because older adults may be exposed for longer periods, they may absorb more pesticide than a younger person would.



As we age, our nervous system changes in ways that can affect how easily we notice changes to our surroundings through our sense of smell, touch, or taste.³ Because of this, aging may also affect how quickly we respond to odors and skin sensations. Slower response times may make it difficult for older adults to determine when they are being exposed to a pesticide. Older adults may absorb more pesticides into their bodies simply because they may be exposed for longer periods.

Why is it harder for older adults to remove pesticides from their bodies?

The ability of the heart to move blood around the body declines as we age.⁴ This reduces blood flow to the liver and kidneys, which also decrease in size as we grow older. Reduced blood flow and decreases in liver and kidney size can work together to slow the break down and removal of pesticides from the body.^{2,3,5}

Does aging effect how the body stores pesticides?

People tend to gain body fat and lose lean muscle as they age. The body stores many pesticides in fat before they are removed from the body by the liver or kidneys. Pesticides that are stored in fat can build up in larger quantities in the bodies of older adults. Because of this, older adults may experience health problems from pesticide exposures that may not cause problems for younger adults.^{2,5}

The body also stores pesticides in the blood and other body fluids. Such pesticides may stay in the bodies of older adults longer if aging kidneys are not as effective in removing them.³

NPIC fact sheets are designed to answer questions that are commonly asked by the general public about pesticides that are regulated by the U.S. Environmental Protection Agency (US EPA). This document is intended to be educational in nature and helpful to consumers for making decisions about pesticide use.

What effects could result from pesticide exposures in the elderly?

Older adults may be more likely to have health problems after a pesticide exposure and may need more time to heal for the following reasons.

- The liver and kidneys become less able to remove pesticides from the body as we age. Pesticides may speed up aging of the liver or kidneys if these organs are injured during an exposure.^{2,5} Older adults may become even less able to remove pesticides from the body after the liver or kidneys are impacted.
- The longer a pesticide stays in the body, the more likely it is to build up to levels that may cause injury.² Older adults may have health problems after a pesticide exposure simply because their bodies can no longer remove pesticides quickly.
- Chemicals such as prescription drugs or pesticides can react with each other once they are inside the body. These chemical reactions may cause unexpected health effects in older adults for two reasons. First, older adults may take more prescription medications than younger people. Second, chemicals stay in the bodies of older adults longer, so they have more time to react. Both of these reasons increase the chance that a drug will interact with a pesticide that enters the body.²

What other factors can increase pesticide risk for older adults?

Older adults may take more prescription drugs than younger people.² Most pesticides are broken down and removed from the body by the liver and kidneys. These organs also remove prescription drugs from the body. The liver and kidneys may become less able to remove pesticides from the body if someone is taking several types of prescription drugs.⁵ Older adults are also more likely to suffer from diseases of the liver, kidneys or other organs that help remove pesticides from the body.⁵ Disease can reduce the ability of older adults to remove pesticides from the body and may increase pesticide risk.

What precautions can help elderly people minimize the chance of having a problem?

Older adults can reduce their pesticide risk by [minimizing their exposure](#) to pesticides, choosing pest control measures that do not involve pesticides or by selecting less toxic pesticide products. Consider using an [Integrated Pest Management \(IPM\)](#) approach to pest control. If you want to know more about IPM or about the toxicity of a pesticide product, call [NPIC](#) at 1-800-858-7378.

Anytime you use a pesticide, be sure to read and follow the label instructions. The label will include important information for protecting yourself, such as protective clothing that should be worn when applying the product. Wash your hands, face, and clothing after you finish handling a pesticide.

If pesticides are being used near you, ask for details about the activity, such as where it is happening, how much area is being treated, and what pesticide is being used. Ask the person who is using the pesticide what precautions you should take, such as leaving the area for a period of time.



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OLDER ADULTS AND PESTICIDES

TOPIC FACT SHEET

If you have been exposed to a pesticide, take note of the situation in which it happened. The length and amount of exposure are important details for understanding your risk. Read the first aid statement on the product label, and follow the instructions. Again, call NPIC if you need assistance at 1-800-858-7378.

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