

## Pesticides, outdoor

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| Human Health Risk  | M |
| Ecological Risk    |   |
| Socioeconomic Risk |   |

Pesticides include any compounds employed to destroy, prevent, or control pests. By their very nature, these chemicals present some risk of environmental harm. Approximately 600 substances are registered as pesticides, each having different chemical, physical, and toxicological characteristics. Pesticides of every major chemical class may be detected in New Jersey ground and surface waters, a result of widespread use on croplands, lawns, gardens, golf courses, rights-of-way, and parks. Pesticides that have long been banned, such as DDT, are still detected in New Jersey surface water samples. The presence of pesticides in surface and ground water supplies poses risks to human health when these sources are used for drinking water. Most New Jersey residents obtain drinking water from public water supplies, about half rely on surface water sources, and half on ground water sources for raw water. In rural areas in the southern part of the state, many people rely on private wells that tap into ground water. There is a potential for any of these drinking water supplies to become contaminated with pesticides.

### What's at risk?

The general population is potentially exposed. Because private wells are not monitored, households with private wells are at increased risk. Particularly vulnerable to contamination are shallow wells located in areas with high pesticide use. Infants, children, and the elderly may be at increased risk from the effects of pesticide contamination. Individuals with compromised immune systems or chronic lung disease or nervous system dysfunction are also at increased risk.

### What are the human health impacts in New Jersey?

More research is needed to address the data gaps that make it impossible to quantify exposure levels and impacts of that exposure for the New Jersey population. There are currently no estimates regarding the incidence of pesticide-related illness, nor a means for assessing the severity of health effects. However, hundreds of thousands of pounds of chemicals are applied commercially in New Jersey, with the additional volume of usage by private citizens going unreported. Most pesticides have not been fully evaluated with respect to the potential for endocrine disrupting effects at low, chronic levels of exposure (see summary on Endocrine Disruptors), rather, evaluations for potential health effects have been heavily based on high dose animal studies. Pesticide use also carries a

risk for acute effects resulting from misuse or accidental poisoning. Several thousand calls related to pesticides are placed annually to the New Jersey Poison Information and Education System.

### What are the socioeconomic impacts in New Jersey?

The socioeconomic TWG estimated impacts from pesticide exposures from all sources. Using national estimates, at least \$8 million in medical costs may be expected as a result of increased childhood cancers and accidental poisonings related to pesticide exposures. Studies have shown that most people worry about pesticide residues in food. Potential loss of biodiversity may also contribute to an aesthetic impact. Overall, socioeconomic risks from pesticides are considered high, but there are significant uncertainties.

### What's being done?

Pesticide use is regulated, but current levels of contamination are occurring as a result of legal use. Reducing the risks associated with pesticides in drinking water will require changes in regulations controlling their use, as well as changes in agricultural practices that reduce application rates and control runoff.