

# Pesticide Drift Exposure

## INFORMATION FOR HEALTH CARE PROVIDERS

This fact sheet is about accidental exposure to pesticides due to **pesticide drift**.  
**If you need immediate assistance in evaluating a potentially serious pesticide exposure,**  
contact the MN Poison Control System at 1-800-222-1222.

### What to know before talking with patients

Pesticides are chemicals used to prevent, kill, repel or control insects, plants, microorganisms or animals that are harmful or a nuisance. Insecticides, herbicides, fungicides, antimicrobial pesticides and rodenticides are types of pesticides intended to kill, control, repel or prevent a specific pest. Pesticides can be used on farms, in homes, businesses, and public places. People may be exposed to pesticides through direct use of products or through air, water, soil and treated materials.

**Pesticide drift** is the movement of pesticide dust or droplets through air at the time of application or shortly after that spreads the pesticide beyond the intended area of application. For instance, a field or ditch may be sprayed on a windy day and the pesticide blows onto adjacent properties or roads. Pesticide drift is a violation of Minnesota law.

The possibility for drift exposure depends on many factors, including pesticide formulation, application method, air temperature, wind speed, wind direction, and humidity. People affected may or may not be aware of their exposure. The amount of actual exposure is difficult to estimate and most often is not measurable.

Currently, available data does not give us clear information about how often exposures are taking place in Minnesota.

### Principles of Management

Pesticide drift exposure is likely to be transient and dilute.

Most commonly, people can experience irritation of eyes and mucous membranes, rhinitis, cough, respiratory distress, and burning or itching skin, sometimes with the development of dermatitis. They may describe an unusual odor or taste. Children are more likely to become ill, as are people with underlying illness, especially asthma or COPD. In rare cases, serious acute toxicity may present as respiratory distress, seizures, or vomiting.

### Decontamination & Airway Protection

For critically ill patients:

- Decontamination should occur at the same time as stabilization and airway protection.

Most patients exposed to drift will not be critically ill. For those patients:

- Remove patient from exposure

- Decontaminate the patient
  - Remove their clothing. Contact the Minnesota Department of Agriculture (MDA) for storage instructions which may include storing unwashed clothing in a plastic bag in a freezer without food or other items that could be contaminated.
  - Wash exposed areas with soap and water. Pay special attention to fingernails, as particles may lodge there.
  - If eye exposure has occurred, irrigate with clean, cool water, remove contact lenses and continue flushing for 10-15 minutes. Consult ophthalmology if eye irritation is present.

## History and Examination

Take a careful exposure history including any recent residential pesticide or other chemical use in or around the home. If symptoms are present, consider evaluating the possibility of pesticide exposure even if the patient isn't aware of any specific exposure, especially in those individuals who are considered to be more sensitive to pesticides such as children or pregnant women. A detailed exposure history form can be found in the US Environmental Protection Agency's "Recognition and Management of Pesticide Poisoning" manual, Appendix A.

Document any pertinent objective findings on examination.

- Document –
  - symptoms reported (photographs of injuries/rash may be helpful), where and when the suspected exposure occurred, and whether anyone else present has symptoms,
  - what they experienced (what they saw/felt/smelled/tasted) and how they responded,
  - whether this has happened before, and if symptoms occurred in previous incidents.
- Ask the patient if they know the name of the pesticide involved in the exposure.
- Do a complete review of systems. As a group, pesticides can affect all organ systems. Patients may not recognize that symptoms are related to exposure.

As with any illness, personal and family medical history can help determine prognosis and monitoring needs.

## Diagnostic testing

Diagnostic testing is not usually helpful for patient care. However, in some cases it is useful to determine if pesticide exposure has occurred.

- Clothing may be tested by MDA under certain circumstances. If clothing has been washed, it cannot be used for residue testing; however, residue may also be found on shoes or hats. MDA testing is for law enforcement purposes only.
- Obtain and freeze a urine sample for possible testing. Blood may rarely be useful. If testing blood for organophosphates, use 1 red-top serum tube and 2 lavender-top K2EDTA tubes. MDA does not perform urine or blood testing.
- The National Pesticide Information Center (800-858-7378; 8:00am - 12:00pm PST) keeps a list of pesticides that may be analyzed in clinical laboratories. This site also includes active ingredient facts sheets which include a section on signs and symptoms resulting from short-term exposure.



**Call the Minnesota Poison Control System  
24/7 at 1-800-222-1222.**

The MN Poison Control System can help determine if special measures or tests are needed. Most poisonings will require only symptomatic, supportive treatment. However, antidotes are available for some severe pesticide exposures. Poison Control staff will also record the zip code where the exposure occurred. This helps track drift exposures in Minnesota.

## Encourage patients to report their exposure

Contact MDA at 651-201-6333 (8 am to 4 pm) or online at

<https://www.mda.state.mn.us/pesticide-fertilizer/pesticide-and-fertilizer-misuse-complaint-form>

MDA investigates pesticide exposures to help Minnesotans use pesticides safely. All pesticide drift incidents should be reported to MDA, even if they originated from a non-agricultural application. Although reporting will not guarantee an investigation or mitigate an exposure that has already occurred, it may help reduce future exposures. You may designate a nurse or department assistant to make the report with the patient.

MDA cannot investigate complaints without sufficient information to indicate that a pesticide may have been used in violation of law. All complaints are required by law to be submitted in writing and may be provided anonymously. Once violations are proven, MDA may take action against the applicator. These actions can range from written warnings to financial penalties. In rare cases, the MDA may initiate proceedings to revoke or suspend applicator licenses. MDA investigates complaints for law enforcement purposes and cannot assist patients with claims for damages related to pesticide use.

MDH Emergency Contacts: MN Duty Officer are available in the case of an emergency or incident. The Minnesota Duty Officer Program provides a single answering point for local and state agencies to request state-level assistance for emergencies, serious accidents or incidents, or for reporting hazardous materials and petroleum spills. The duty officer is available 24 hours per day, seven days per week. Contact information is (651) 649-5451 or 1(800) 422-0798

## Resources:

- [Minnesota Poison Control Center \(http://www.mnpoison.org/\)](http://www.mnpoison.org/)
- [Minnesota Department of Agriculture: Regulations, Inspection & Enforcement \(https://www.mda.state.mn.us/pesticide-fertilizer/regulation-inspection-enforcement\)](https://www.mda.state.mn.us/pesticide-fertilizer/regulation-inspection-enforcement)
- [US Environmental Protection Agency's "Recognition and Management of Pesticide Poisoning" manual, Appendix A \(http://www.epa.gov/sites/production/files/documents/rmpp\\_6thed\\_appendixa.pdf\)](http://www.epa.gov/sites/production/files/documents/rmpp_6thed_appendixa.pdf)
- [National Pesticide Information Center: Pesticides and Human Health \(http://npic.orst.edu/health/humhealth.html\)](http://npic.orst.edu/health/humhealth.html)
- [Minnesota Department of Agriculture: Filing a Written Pesticide/Fertilizer Misuse Complaint \(https://www.mda.state.mn.us/pesticide-fertilizer/pesticide-and-fertilizer-misuse-complaint-form\)](https://www.mda.state.mn.us/pesticide-fertilizer/pesticide-and-fertilizer-misuse-complaint-form)
- [MDH Emergency Contacts: Minnesota Duty Officer \(https://www.health.state.mn.us/communities/environment/pesticide/emergency.html\)](https://www.health.state.mn.us/communities/environment/pesticide/emergency.html)