

**Pesticide-Associated Illnesses and Injuries Reported In California Schools<sup>1,2</sup>  
by Exposure Category, Pesticide Type and Illness Symptoms  
2009**

Exposure <sup>3</sup>	Systemic/Respiratory <sup>4</sup>			Topical <sup>4</sup>			TOTAL
	Antimicrobials <sup>5</sup>	Cholinesterase Inhibitors <sup>5</sup>	Other Pesticides <sup>5</sup>	Antimicrobials <sup>5</sup>	Cholinesterase Inhibitors <sup>5</sup>	Other Pesticides <sup>5</sup>	
Drift	3	7	5	1	0	4	20
Residue	2	0	0	0	0	0	2
Direct Spray/Squirt	0	0	0	4	0	0	4
Spill/Other Direct	1	0	1	15	0	0	17
Other	1	0	0	0	0	0	1
<b>TOTAL</b>	<b>7</b>	<b>7</b>	<b>6</b>	<b>20</b>	<b>0</b>	<b>4</b>	<b>44</b>

<sup>1</sup> **Source:** California Department of Pesticide Regulation, Pesticide Illness Surveillance Program.

<sup>2</sup> **Associated With:** Includes cases classified as definitely, probably or possibly related to pesticide exposure

**Definite** : High degree of correlation between pattern of exposure and resulting symptomatology. Requires both medical evidence (such as measured cholinesterase inhibition, positive allergy tests, characteristic signs observed by medical professional) and physical evidence of exposure (environmental and/or biological samples, exposure history) to support the conclusions.

**Probable** : Relatively high degree of correlation exists between the pattern of exposure and the resulting symptomatology. Either medical or physical evidence is inconclusive or unavailable.

**Possible** : Health effects correspond generally to the reported exposure, but evidence is not available to support a relationship.

<sup>3</sup> **Type of Exposure:** Characterization of how an individual came in contact with a pesticide. Exposure categories not listed on the table indicate there were no illnesses that occurred under that category.

**Drift** : Spray, mist, fumes, or odor carried from the target site by air. Drift must be related to an application or mix/load activity.

- Residue : The part of a pesticide that remains in the environment for a period of time following an application or drift. This includes odor after the completion of an application.
- Direct Spray/Squirt : Material propelled by the application or mix/load equipment. Contact with the material can be by direct projection or ricochet. This includes exposure of mechanics working on application or mix/load equipment when the material is forced out by pressure.
- Spill/Other Direct : Any of the following: 1) Contact made during an application or mixing/loading operation where the material is not propelled by the equipment; 2) Expected direct contact during use (e.g. washing dishes in a disinfectant solution); 3) Leaks, spills, etc. not related to an application.
- Ingestion : Intentional or unintentional oral ingestion.
- Multiple : Contact with pesticides occurred through two or more mechanisms.
- Other : Other known route of exposure not included in other exposure categories. This includes, but not limited to: 1) Residue from a spill and 2) Exposure to smoke or pyrolytic products from a fire where pesticides are burning.
- Unknown : Route of exposure is not known.

**<sup>4</sup>Type of Illness:** Categorization of the type of symptoms experienced.

- Systemic : Any health effects not limited to the respiratory, skin and/or eye. Cases involving multiple illness symptom types including systemic symptoms are included in the systemic category.
- Respiratory : Health effects involving any part of the respiratory tree.
- Topical : Health effects involving only the eyes and/or skin. This excludes outward physical signs (miosis and lacrimation) related to effects on internal bodily systems. These signs are classified under ‘Systemic.’
- Asymptomatic : Exposure occurred, but did not result in illness/injury. Cholinesterase depression without symptoms falls in this category.

<sup>5</sup> **Type of Pesticide:** Type of pesticide based on functional class.

Antimicrobials : Pesticides used to kill or inactivate microbiological organisms (bacteria, viruses, etc.).

Cholinesterase Inhibitors : Pesticides known to inhibit the function of the cholinesterase enzyme.

Other Pesticides : Any pesticide that is not an antimicrobial or cholinesterase-inhibiting pesticide.

**Whom to Contact:**

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**About the Pesticide Illness Surveillance Program Data**

Pesticide-related illnesses have been tracked within the state of California for more than 50 years. The California Environmental Protection Agency, Department of Pesticide Regulation (DPR) maintains a surveillance program which records human health effects of pesticide exposure. The Pesticide Illness Surveillance Program (PISP) documents information on adverse effects from pesticide products, whether elicited by the active ingredients, inert ingredients, impurities, or breakdown products. This program maintains a database, which is utilized for evaluating the circumstances of pesticide exposures resulting in illness. This database is consulted regularly by staff who evaluate(s) the effectiveness of the DPR pesticide safety programs and recommend changes when appropriate.