

PS-002. Pesticide Exposure and Asthma

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Exposure to pesticides can trigger or exacerbate asthma, induce bronchospasm, or increase bronchial hyperreactivity. Pesticides that inhibit cholinesterase can provoke bronchospasm through increased cholinergic activity. At high doses, certain pesticides can act as airway irritants. Low levels that are insufficient to cause acute poisoning can trigger severe reactions in those without a previous diagnosis of asthma. Pesticides linked to asthma, wheezing, and hyperreactive airway disease include: 1. The antimicrobials chlorine and chloramine; 2. the fumigants metam sodium and ethylene oxide; 3. the fungicides captafol, chlorothalonil, maneb/mancozeb and other ethylenbisdithiocarbamates; 4. the herbicides alachlor, atrazine, EPTC, and paraquat; 5. and the insecticides carbofuran, chlorpyrifos, dichlorvos, malathion, pyrethrins, pyrethrum, and synthetic pyrethroids. The Children's Health Study, a population-based study in southern California, found that children diagnosed by the age of five were more likely to have asthma if exposed to pesticides. Wheezing in Iowa farm children was associated with herbicide exposure, but most studies show farmers' children to be at lower risk of allergic disease, including hay fever. SENSOR (Sentinel Event Notification System For Occupational Risks) found that 3.4% of 534 cases of work-related asthma in Michigan and New Jersey, were pesticide related. 2.6% of 1101 cases of occupational asthma reported in California, Massachusetts, Michigan, and New Jersey were pesticide related. Dyspnea and cough were found in over 78% of workers on apricot farms where large amounts of sulfur were used. Some household aerosol sprays trigger symptoms and impair lung function in asthmatics, and use of mosquito coils inside the home was associated with a higher prevalence of asthma.

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