



# California Asthma Facts

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## Work-Related Asthma

### What is Work-Related Asthma?

In California, an estimated 137,000 adults have work-related asthma (WRA), defined as asthma that is triggered by exposures in the workplace. This includes new asthma that develops due to conditions at work, as well as pre-existing asthma that is worsened by workplace exposures. There are over 350 recognized asthma triggers in the workplace including many chemicals used in manufacturing, paints and cleaning products, dusts from wood, grain, and flour, latex gloves, certain molds, animals, and insects. Asthma is suspected to be work-related when there is a correlation between development of asthma symptoms and exposure at work or worsening of asthma symptoms upon returning to work after being away for several days.

Addressing many of the exposures, occupations and industries at highest risk for WRA may help prevent other cases of asthma that are not work-related. For example, exposures in schools affect workers such as teachers or janitors, as well as children. Similarly, exposures affecting nurses in a health care setting may also affect patients.



Paints may contain asthma-causing chemicals that can affect workers and others nearby.



Many cleaning products contain chemicals that can trigger asthma. Workers using cleaning products are at risk, as are people in areas where cleaning products are used.

### Prevalence of Work-Related Asthma

A variety of studies show workplace exposures are responsible for up to 29% of all asthma cases among adults. The American Thoracic Society estimates that more than one out of seven adults with asthma in the U.S. has asthma related to their work<sup>1</sup>. Despite this fact, studies show that health care providers often do not recognize adult asthma as being work-related<sup>2-3</sup>. To estimate the extent of work-related asthma in California, the Occupational Health Branch of the California Department of Health Services added two questions to the 2001 California Behavioral Risk Factor Surveillance System survey<sup>4</sup>. Overall, 7.5 percent of Californian adults reported having current asthma. In addition, 7.4 percent of the adults with current asthma may have asthma related to their work. However, this likely represents an underestimate since many health care providers and patients don't recognize asthma as being work-related.

This issue of *California Asthma Facts* focuses on work-related asthma in California.



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## Surveillance of Work-Related Asthma

California is one of several states to receive funding from the National Institute for Occupational Safety and Health to conduct surveillance of WRA. The California Department of Health Services' Sentinel Event Notification System for Occupational Risks (SENSOR) program was developed to identify primary and secondary cases of WRA, characterize exposures and disease, and devise prevention strategies.

California law requires that physicians file a Doctor's First Report of Occupational Injury or Illness (DFR) for each case of suspected illness or injury caused on the job. The SENSOR program collects and analyzes DFRs for cases of WRA. Once cases are identified, telephone interviews are conducted to collect more detailed information about occupational and non-occupational risk factors. Educational materials are provided to workers and worksite investigations are conducted at selected high-risk worksites. Findings from all these efforts are compiled and analyzed to identify approaches for prevention.

From 1993 through mid-2003, 3,188 cases of WRA were identified from DFRs. Approximately half of these cases could be reached by telephone for an interview to collect additional data.

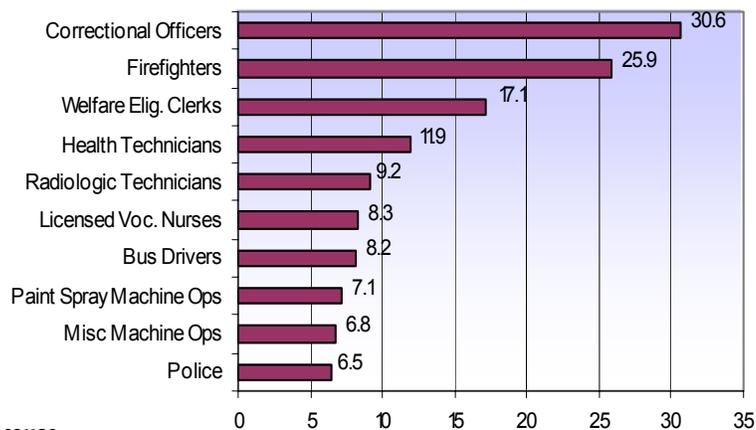


Many different types of wood are sensitizers and can cause asthma in workers exposed to wood dust. Once sensitized, numerous different exposures may trigger asthma in a worker.

### Key findings include:

- ◆ The overall rate of WRA was 2.1/100,000 workers.
- ◆ The three industries with the highest rates were local and interurban passenger transportation (13.9/100,000); manufacturing of lumber and wood products (7.7/100,000); and electric, gas and sanitary services (6.5/100,000).
- ◆ The three occupations with the highest rates were correctional officers (30.6/100,000); firefighters (25.9/100,000); and welfare eligibility clerks (17.1/100,000). Three of the ten occupations with the highest rates were in the health care industry (Figure 1).
- ◆ Cases were classified according to national guide lines for WRA: 63 percent were new onset asthma and 37 percent were work-aggravated asthma.
- ◆ The most common exposures identified were dust, indoor air, mold, unknown chemicals, and cleaning chemicals.
- ◆ The most common exposures to sensitizing agents were formaldehyde, isocyanates, latex, redwood dust, and glutaraldehyde.

**Figure 1. Top Ten Occupations with Highest Rates\* of Work-Related Asthma in California-SENSOR Program, 1993-2003**



\*Rates calculated per 100,000 workers.

The consequences of WRA can be severe (see Case Report). Among all cases reported through DFRs with work status indicated, 57 percent were either unable to perform their usual work or had to perform modified work. Among interviewed cases, 28 percent reported that they were still exposed to the substances associated with their breathing problems. Among those no longer exposed, 34 percent reported they had left their job, either from being fired, or voluntarily to stop exposure. A majority of interviewed cases (61 percent) reported that co-workers also suffered from breathing problems. The mean number of co-workers with breathing problems was seven, while the median was three. In addition, asthma is estimated to be responsible for approximately 2.5 million lost work days nationally.

### Case Report

David Brown (not his real name) was 55 years old and had worked as a custodian for a large urban school district for 18 years when he was assigned to clean a building at a high school that contained large amounts of graffiti. He used several different graffiti-removal products for up to four hours a day, five days a week. Frequently, he had to clean graffiti in tight, poorly ventilated spaces, such as bathroom stalls and stairwells. He never received any information on the cleaning chemicals he used or how to use them safely. He developed wheezing, coughing and chest tightness. His symptoms were worse while he was using the chemicals to clean graffiti. His doctor gave him a diagnosis of work-related asthma. Even after he quit his job on his doctor's advice, his symptoms continued.

## Preventing Work-Related Asthma

The primary treatment for WRA is removal from the source of exposure. The chance for recovery after exposure ceases is significantly affected by the amount of time from exposure to diagnosis. The majority of people who develop occupational asthma fail to fully recover, even after several years without exposure. A number of studies have shown that 50 - 60 percent of workers are still symptomatic three to four years after exposure has ended<sup>5-7</sup>.

It is critical that asthma prevention be thought about comprehensively, and that prevention strategies be targeted to address all those affected by particular exposures. If a worker develops asthma on the job, this may signal that others are also at risk from the same exposures. Primary prevention involves eliminating exposure to asthma triggers **before** asthma develops.

Physicians play a crucial role in preventing WRA. Identifying cases promptly is critical to stopping exposure and significantly improving the chance for recovery. It is important for all clinicians to be aware of the prevalence and consequences of WRA, to ask patients about exposures in the workplace, and to file a Doctor's First Report whenever the condition is identified or suspected. For more information about WRA in California, to learn more about the SENSOR program, or to obtain more information on occupational exposures, please visit our website: <http://www.dhs.ca.gov/ohb/OHSEP/asthma.htm>.

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## California Asthma Facts

The California Department of Health Services has worked with leading asthma organizations, agencies, and public interest groups throughout the state to develop an integrated plan, *The Statewide Strategic Plan for Asthma in California*, to address the asthma epidemic in California. Please visit the *California Breathing* website for more information:

[www.californiabreathing.org](http://www.californiabreathing.org)

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