

# Work-Related Asthma in Utah

## What is work-related asthma?

Work-Related Asthma (WRA) is asthma that is caused or triggered by conditions or substances in the workplace. There are two main types of WRA: 1) pre-existing asthma that is triggered or made worse by exposure to one or more substances in the work environment, and 2) asthma that is caused by exposure to substances in the work environment.<sup>1</sup> There are currently about 390 substances known to cause new onset WRA. The Association of Occupational and Environmental Clinics maintains a list of these substances at <http://www.aoec.org/tools.htm>. See Table 1 for common examples.

Work-related asthma may not appear for weeks or months following exposure, as it takes time for the body to become sensitive to the substance(s) causing asthma. Once asthma has developed, symptoms may occur at lower levels of exposure to the substance(s).

Workers most likely to develop the disease are those with a personal or family history of allergies or asthma and frequent exposure to highly sensitizing substances. But the disease can also develop in persons with no known allergies.

Some occupations where employees are at high risk for developing work-related asthma include: animal handlers, farmers, bakers, food processors, and health care workers.<sup>2</sup>

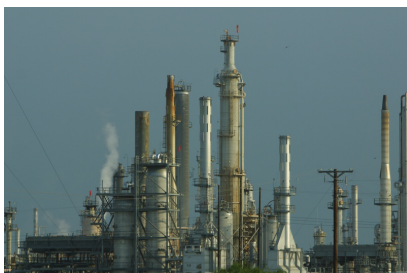


Table 1:  
Work-related Asthma Triggers

Type of Substance	Examples
Air pollutants	tobacco smoke, diesel exhaust, aerosol agents, dusts, gases and vapors
Dusts (organic/inorganic)	wood, rock, coal, protein dusts, silica, asbestos, latex
Fumes and vapors	chemicals, cleaning materials, welding, solvents, isocyanates, anhydride from heating and cooling metals quickly
Molds	all varieties
Pollens	trees, flowers, weeds
Gases	formaldehyde, ammonia, chlorine, sulfur dioxide, ozone, nitrogen oxides
Mists	paints, lacquers, varnishes, hair spray, pesticides, cleaning products, acids, etc



# Work-Related Asthma in Utah

## What does work-related asthma look like in Utah?

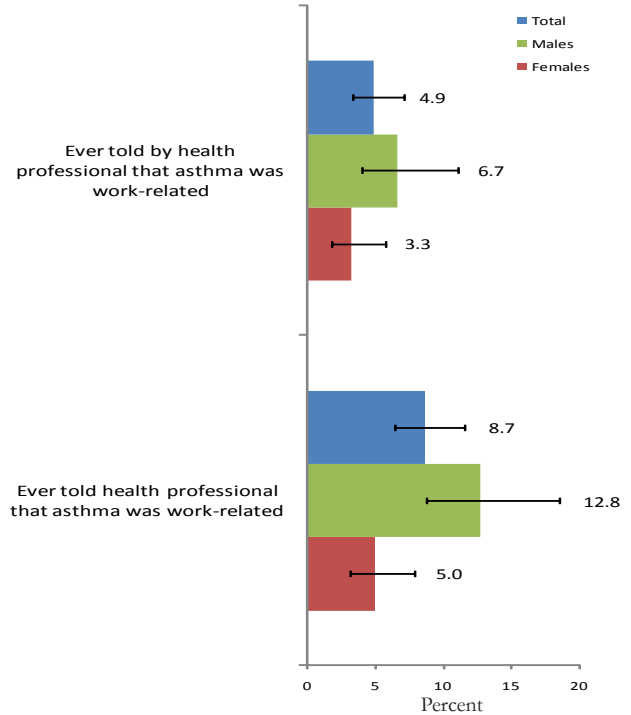
The prevalence of work-related asthma in Utah was assessed by asking the adult working population who had ever been diagnosed with asthma if their asthma was caused or worsened by their current or previous job.

Overall, 4.9% of respondents with lifetime asthma said that a health professional had told them their asthma was work-related, and 8.7% said they had told a health professional that their asthma was work-related. A significantly higher percentage of males had told a health professional that their asthma was work-related (12.8%) when compared to females (5.0%).

Among adults who were ever diagnosed with asthma, 24.6% believed their asthma was caused by their jobs and 36.0% believed their asthma was made worse by chemical, smoke, fumes or dust in a current or previous job. Approximately one-fifth of individuals who have ever been diagnosed with asthma reported having left a job because it caused or worsened their asthma symptoms (22.1%). There were no significant differences by sex.

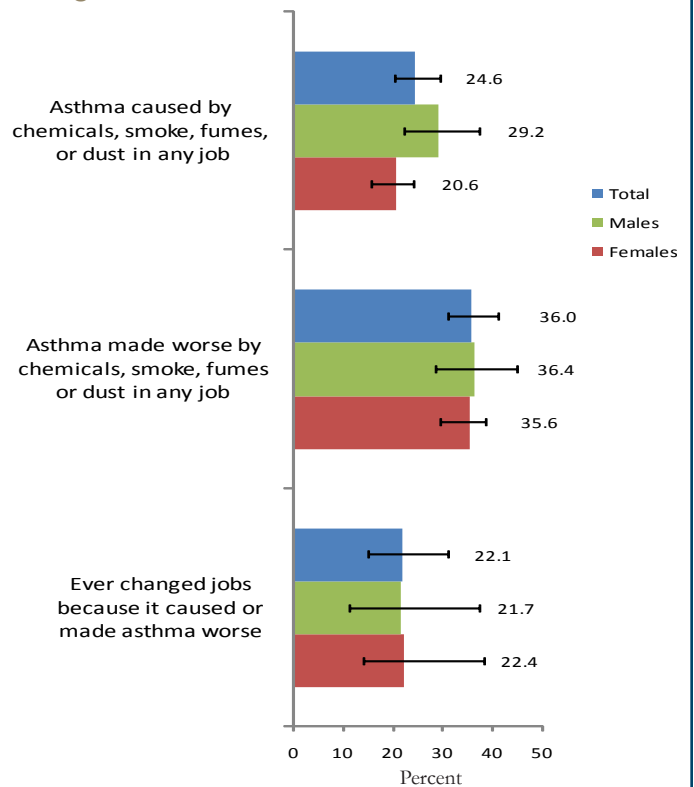


## Prevalence of Work-Related Asthma Among Adults with Lifetime Asthma, Utah, 2007-2008



Source: 2007-2008 BRFSS Call-back Survey combined. Crude prevalence.

## Prevalence of Work-Related Aggravated Asthma Among Adults with Lifetime Asthma, Utah, 2007-2008



Source: 2007-2008 BRFSS Call-back Survey combined. Crude prevalence.

# Work-Related Asthma in Utah

## Area

Work-related asthma was analyzed by area to compare the burden of work-related asthma in urban versus rural and frontier areas. Each of the areas are defined as:

**Urban** = 100 persons or more per square mile.

**Rural** = more than 6 but fewer than 100 persons per square mile.

**Frontier** = 6 or fewer persons per square mile.

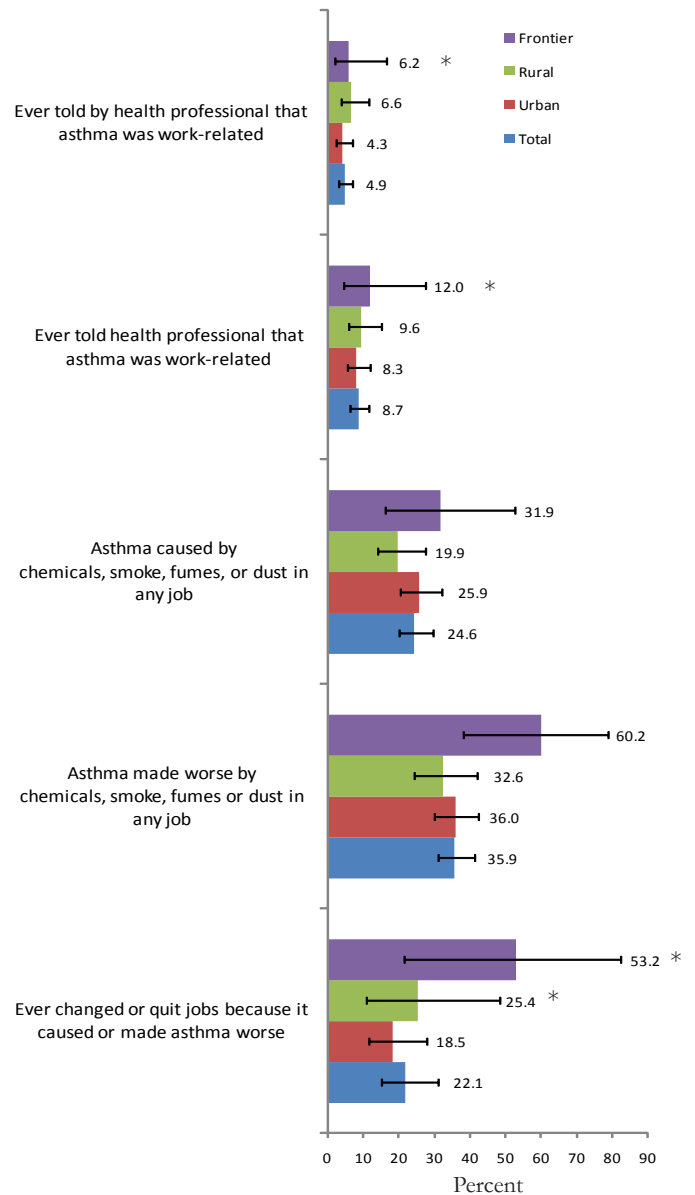
The percentage of adults who reported that a health professional told them their asthma work-related was 4.3% from urban areas, 6.6% from rural and 6.2% from frontier areas, with no significant differences between areas. Data suggest that a higher percentage of adults (53.2%) in frontier areas had changed or quit their jobs due to work-related asthma when compared to rural (25.4%) and urban (18.5%) areas and a higher percentage believed their asthma was made worse by exposure to chemicals, dust, etc. in their jobs when compared to rural. However, the differences between areas were not statistically significant.

## Income/ Education

Data analyses of work-related asthma by income and education show no significant differences except for those who reported having ever quit or changed jobs because it caused or made their asthma worse.

A higher percentage of adults in the <\$20,000 (44.8%) and \$20,000-\$49,000 (36.3%) income brackets reported having quit or changed their jobs because of asthma than those in the \$50,000+ bracket (8.2%).

Prevalence of Work-related Asthma Among Adults with Lifetime Asthma by Area, Utah, 2007-2008.

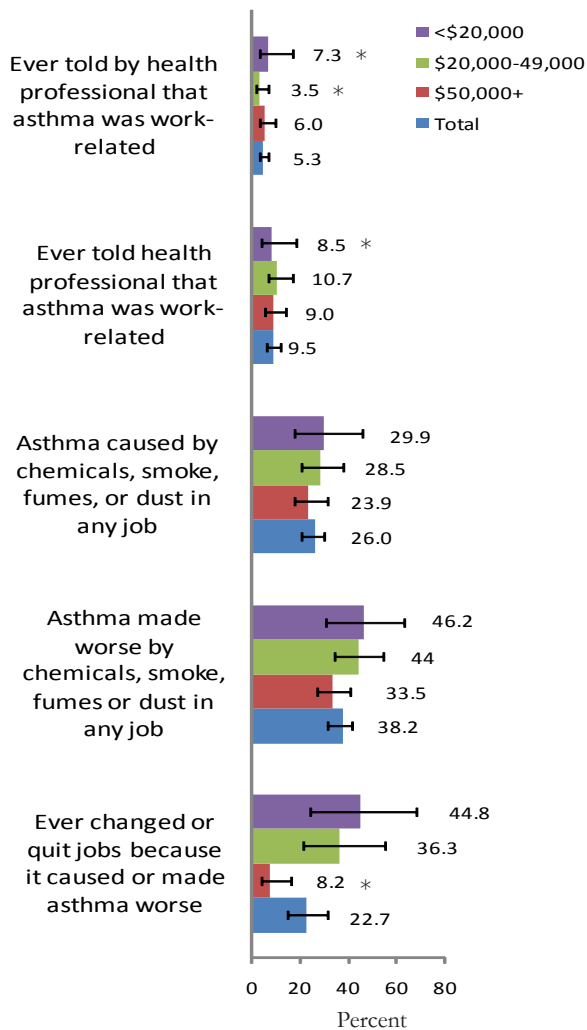


Source: 2007-2008 BRFSS Call-back Survey combined.  
 \*The estimate has a coefficient of variation greater than 30% and does not meet UDOH standards of reliability

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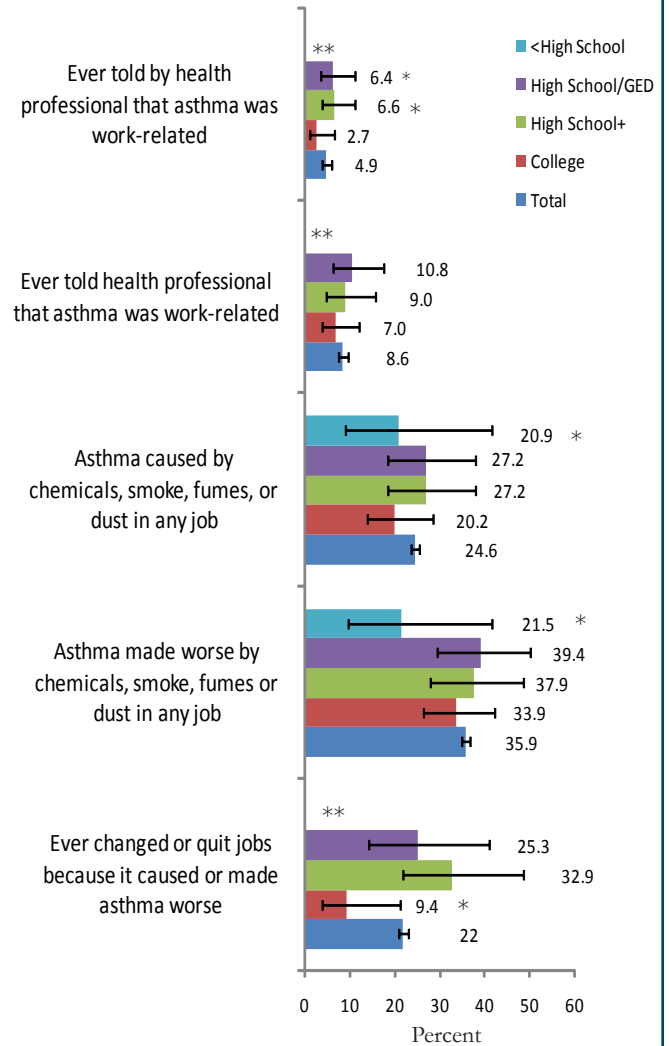
While not significantly different, it appears that those with High School/GED (25.3%) or High School+ (32.9%) education were more likely to change or quit jobs because it caused or made their asthma worse than those with a college education (9.4%).

## Prevalence of Work-related Asthma Among Adults with Lifetime Asthma by Income, Utah, 2007-2008



Source: 2007-2008 BRFSS Call-back Survey combined  
\*The estimate has a coefficient of variation greater than 30% and does not meet UDOH standards of reliability.

## Prevalence of Work-related Asthma Among Adults with Lifetime Asthma by Education, Utah, 2007-2008



Source: 2007-2008 BRFSS Call-back Survey combined  
\* The estimate has a coefficient of variation greater than 30% and does not meet UDOH standards of reliability.  
\*\*The estimate has a coefficient of variation greater than 50% and is not considered appropriate for publication.



# Work-Related Asthma in Utah

## Conclusion

Work-related asthma (WRA) continues to be a health concern in Utah, especially among those who are exposed to chemicals or other triggers associated with WRA. It is important to identify those occupations at high risk for WRA and work to reduce exposures and properly protect individuals from developing WRA.

Some significant findings from this report include:

- More than twice as many males (12.9%) reported having told a health professional their asthma is work-related when compared to females (5.0%)
- Approximately one-fifth of adults who have ever been diagnosed with asthma reported having left a job because it caused or worsened their asthma symptoms (22.1%).
- More adults in the <\$20,000 (44.8%) and \$20,000-\$49,000 (36.3%) income brackets report having to quit or changed their jobs because it caused or worsened their asthma than those in the \$50,000+ bracket (8.2%).

This information can help determine which occupations should be targeted for interventions related to WRA. It is critical for the Utah Asthma Program continue to conduct surveillance on WRA to understand the burden in Utah and to provide additional information about the impact of WRA on Utahns.

## References

<sup>1</sup>Milet M, Tran S, Eatherton M, Flattery J, Kreutzer R. "The Burden of Asthma in California: A Surveillance Report." Richmond, CA: California Department of Health Services, Environmental Health Investigations Branch, June 2007.

<sup>2</sup>American Lung Association, Occupational Asthma. [http://www.lungusa.org/site/c.dvLUK9O0E/b.23034/k.B4D1/Occupational\\_Asthma.htm](http://www.lungusa.org/site/c.dvLUK9O0E/b.23034/k.B4D1/Occupational_Asthma.htm). Accessed September 29, 2009.

## Work-related asthma resources

- American Lung Association [www.lungusa.org](http://www.lungusa.org)
- Asthma and Allergy Foundation of America [www.aafa.org](http://www.aafa.org)
- Asthma Program, Utah Department of Health [www.health.utah.gov/asthma](http://www.health.utah.gov/asthma)
- American Academy of Family Physicians – Patient Education <http://familydoctor.org>
- Canadian Centre for Occupational Health and Safety [www.ccohs.ca/oshanswers/diseases/asthma.html](http://www.ccohs.ca/oshanswers/diseases/asthma.html)
- National Heart Lung and Blood Institute [www.nhlbi.nih.gov/health](http://www.nhlbi.nih.gov/health)
- Occupational Safety and Health Administration [www.osha.gov/SLTC/occupationalasthma/](http://www.osha.gov/SLTC/occupationalasthma/)



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[www.health.utah.gov/asthma](http://www.health.utah.gov/asthma)

*Story Bank*  
UTAH DEPARTMENT OF HEALTH

For anyone living with Work-Related Asthma, the Utah Department of Health would like to hear your story. Make a "deposit" in the Utah Health Story Bank today.

<http://health.utah.gov/bhp/sb/>