



# ASTHMA BURDEN UPDATE

## ■ ASTHMA BURDEN BRIEF

This edition focuses on work-related asthma (WRA).

Asthma is a chronic lung disease caused by inflammation of the lower airways and episodes of airflow obstruction.

Work-related asthma (WRA) consists of both occupational asthma (new onset asthma associated with the workplace environment) and work-exacerbated asthma (pre-existing asthma worsened by the workplace environment).

Nationally, 1 in 10 adults with current asthma, who were ever employed, has WRA. This is an estimated annual average of 1.4 million adults with WRA. Proportions of WRA are highest among persons aged 45–64 years (12.7%), blacks (12.5%) and persons of other races (11.8%).<sup>1</sup>

Asthma symptoms include shortness of breath, chest tightness, nasal congestion, cough and wheezing.

While the exact cause or causes of asthma remain unknown, numerous factors, such as inhalation of allergens or pollutants, infection, cold air, vigorous exercise and emotional stress, have been identified as irritants/triggers of asthma symptoms that can lead to asthma attacks. Risk factors include genetics, pre-existing asthma, pre-existing allergies and working in some certain occupations (listed in the table below).

Fumes from metal, gases (e.g. ammonia), vapors, dust (e.g., from latex rubber, grains, flour, wood, animal origin) and some other occupational exposures can cause asthma symptoms. The most commonly identified exposures are diisocyanates, which are used in the production of coatings, adhesives, insulators and foams. Estimates show about 11 percent of workers exposed to diisocyanates, will develop bronchial hyper-reactivity.<sup>2</sup>

### ***How to Manage Work-Related Asthma***

- Seek medical treatment, which may include the use of asthma medication (e.g., inhaler, steroid).
- Reduce exposure to known irritants (e.g., wood dusts, hair dyes). Continued exposure to these irritants will make it difficult to control your asthma.
- Consult Occupational Safety and Health Administration guidelines to confirm these irritants are within acceptable range in your workplace.  
<https://www.osha.gov/workers.html>
- Request your employer to relocate you to an area where the irritants are not present.



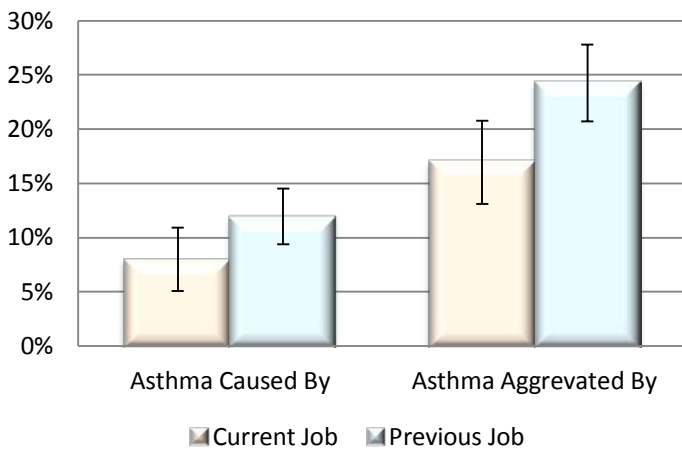
Asthma episodes or attacks can vary from mild to life-threatening. Sometimes patients removed from the workplace do not fully recover from airflow limitation; therefore they may require continued treatment for asthma. Although asthma cannot be cured, symptoms can be controlled with appropriate medical care and efforts to control exposure to triggers, allowing people with asthma to lead lives largely unrestricted. Asthma episodes may cease to exist for some people.

1. U.S. Centers for Disease Control and Prevention, Morbidity and Mortality Weekly Report (MMWR). *Work-related Asthma – 38 States and District of Columbia*, 2006-2009. May 25, 2012 / 61(20): 375-378.

2. Beach J, Rowe BH, Blitz S, et al. *Diagnosis and Management of Work-Related Asthma*. Rockville (MD): Agency for Healthcare Research and Quality (US); 2005 Nov. (Evidence Reports/Technology Assessments, No. 129.)

About 14 percent of Illinois residents, or 1.3 million people, have been diagnosed with asthma (2011). Approximately 5 to 15 percent of adult onset asthma is thought to be WRA.<sup>3</sup>

### Percentage of adults with active asthma and work-related asthma, Illinois, 2007-2010.



- Nearly 20 percent of adults with active asthma reported their asthma was caused by a previous (11.9%) or current job (8.0%).

- More adults with active asthma reported their asthma was aggravated by their previous job (24.3%) compared to adults who said their asthma was aggravated by their current job (17.0%).

- 6 percent of adults with active asthma had to change or quit their job due to chemicals, smoke, fumes or dust, which caused their asthma to worsen.

Source: Illinois Adult Asthma Callback Survey, 2007-2010

### Common Workplace Irritants and Related Work Activities

Substance Groups	Common Activities
Isocyanates	Vehicle spray painting, foam manufacture
Flour/grain/hay	Handling grain at docks, milling, malting, baking
Electronic soldering flux	Soldering, electronic assembly, computer manufacture
Latex rubber	Gloves in health care, laboratories
Laboratory animals	Laboratory animal work
Wood dusts	Saw milling, woodworking and furniture manufacture
Glues/resins	Curing glues and epoxy resins in joinery and construction
Gluteraldehyde	Health care
Hair dyes	Hairdressers
Penicillin's/cephalosporin's	Pharmaceutical
Chromium compounds	Welding stainless steel
Platinum salts	Catalyst manufacture
Cobalt	Hard metal production, diamond polishing
Nickel sulphate	Electroplating
Subtilisin/enzymes	Detergent manufacture

The table above provides a broad indication of the types of substances that are known respiratory irritants and their associated common work activities<sup>4</sup>. This is not an exhaustive list.

3. Beach J, Rowe BH, Blitz S, et al. *Diagnosis and Management of Work-Related Asthma*. Rockville (MD): Agency for Healthcare Research and Quality (US); 2005 Nov. (Evidence Reports/Technology Assessments, No. 129.)

4. July 2008 by the Health and Safety Authority, The Metropolitan Building, James Joyce Street, Dublin 1.  
[http://www.hsa.ie/eng/Publications\\_and\\_Forms/Publications/Occupational\\_Health/Guidelines\\_on\\_Occupational\\_Asthma.pdf](http://www.hsa.ie/eng/Publications_and_Forms/Publications/Occupational_Health/Guidelines_on_Occupational_Asthma.pdf)