

# OCCUPATIONAL ASTHMA

## STATEMENT OF THE PROBLEM

About 10% of all asthma cases in adults are believed to have an occupational source. Some 200 substances-gases, vapors, and organic and inorganic dusts-found in manufacturing workplaces, in farming and logging and among certain occupations have been identified as causes of asthma. More than 250 occupations have been found to expose workers to asthma triggers.

## BACKGROUND

Occupational asthma can develop as a result of two processes:

1. Allergy-induced asthma, which is the result of exposure to a substance that causes the person's immune system to trigger an antibody response. People with allergy-induced asthma are advised to change their worksite as continued exposure to the allergen can result in severe, disabling asthma.
2. Irritant-induced asthma is the result of a reaction to inhaling irritating substances. It is more common than allergic reactions and results in the short-term worsening of a condition already present. Irritant reactions directly affect the airways but do not produce an antibody response. The same symptoms occur and may be severe. People with irritant-induced asthma may choose to continue working, but should work with employers to take steps to reduce exposure to the irritant either by avoidance of exposure to the irritating substance or by use of ventilation and respiratory protection in the form of air hoods to protect them from inhaling the air from the factory floor or by use of a helmet with respirator. Simple filter-type face masks do not provide adequate protection.

Scientists have also identified a syndrome-Reactive Airways Dysfunction Syndrome (RADS) which is somewhere between allergy-induced asthma and an irritation-induced reaction. It is typically an intense onetime irritant exposure followed by asthma-like symptoms (coughing, wheezing, shortness of breath). This resolves over days or weeks and sometimes months.

## ASSESSMENT

Symptoms of occupational asthma include 3 basic patterns:\*

- A prompt occurrence of trouble breathing and wheezing within minutes of exposure to the allergen or irritant. The condition worsens in 10-30 minutes and clears up in 1-2 hours. Symptoms go away after the worker leaves the workplace and do not recur on weekends or on the worker's days off. (Spill of an agent can cause high-level exposure that triggers a reaction quickly.)

- A delayed or late onset reaction, often beginning 1 to 6 hours after exposure and peaking in 3-8 hours. Sometimes it lasts 2-36 hours and can recur nightly after a single exposure. It may take days or weeks to resolve.
- A dual response, both prompt and late onset. Symptoms begin within minutes of exposure and return to normal in 1-2 hours. Symptoms flare up again in the evening or after bedtime and continue in some people for up to 12 hours.

Clues to the diagnosis of occupational asthma include:

- Onset of symptoms within months of starting a job.
- Use of a new industrial agent or process
- Improvement in symptoms after leaving the work area, on weekends or holidays
- Symptoms that worsen during certain production procedures when exposure is greatest.
- Other workers similarly affected

(Information from Asthma and Allergy Foundation of America)

## EDUCATIONAL MESSAGES

- Occupational asthma can result from an allergic response to substances in the workplace or from chemicals that cause irritation to the airways. Allergy caused asthma is more serious and can result in severe symptoms. It is recommended that people change jobs if that is the cause. Irritation-induced asthma can be managed by avoiding exposure to the offending substance and/or by using ventilation and masks.
- Diagnosis of occupational asthma can be difficult. It is important to be able to report what and when symptoms occur. The doctor may try to reproduce the symptoms in a challenge test in which the person is exposed to a substance in a controlled environment. Allergy skin tests and blood tests may also be used in diagnosis.
- A wide variety of plant and animal derived proteins, insect and plant dusts, chemicals, pharmaceutical agents and bacterial enzymes are believed to cause occupational asthma. Certain industries have higher incidences such as: bakers (flour dust), manufacture of detergents, logging, furniture industries, handling of animals, chemical industries such as production of epoxy resins, adhesives and fire retardants, plastics industry. Hairdressers who are exposed to chemicals and health care workers exposed to latex products are also at risk.
- Keeping track of when and where symptoms occur are important in diagnosing occupational asthma. Taking peak flow readings both while at work and when away from work can aid in the diagnosis.

## ACTIONS

CHW ACTIONS	PARTICIPANT ACTIONS
<ul style="list-style-type: none"><li>• If the participant experiences symptoms at work, assess if participant is in an occupation or industry that places them at risk for work-related asthma.</li><li>• Help participant identify symptoms and when/where they occur relative to suspected worksite exposure.</li><li>• Teach participant how to use peak flow meter and record results and symptoms.</li><li>• Refer to HMC Occupational Medicine Clinic if work-related symptoms are suspected.</li></ul>	<ul style="list-style-type: none"><li>• Track &amp; record symptoms and when/where they occur.</li><li>• Measure peak flow values every 1-2 hours during the work shift and while away from the workplace. Keep a log for 3 weeks-2 weeks at work and 1 week off work.</li><li>• Record when medication is needed to manage symptoms.</li><li>• Go to HMC Occupational Medicine Clinic if suspect work-related symptoms.</li></ul>

## FOLLOW-UP VISITS

## SUPPLIES

## EDUCATION HANDOUTS

## REFERRALS