

Work-related Asthma and You: Cleaning Products

Asthma is a common lung disease that makes breathing difficult. It can affect your ability to work and your overall quality of life. When asthma is not managed well, it can even threaten your life.

Exposure to cleaning products is sometimes associated with work-related asthma. You may be at risk for developing work-related asthma if:

- you clean or disinfect, or
- you work in an area where cleaning or disinfection products are being used or have recently been used.

What is Work-related Asthma?

When asthma is caused or triggered by breathing in a substance in the workplace, it is called “work-related” asthma. There are 2 types of work-related asthma: occupational asthma and work-aggravated asthma.

Definitions

Work-related asthma: a worker breathes in a substance in the workplace that causes or triggers asthma.

Occupational asthma: a worker’s asthma is caused by exposure to a substance in the workplace.

Work-aggravated asthma: a worker already has asthma (or had it before) and the asthma becomes worse because of something at work.

What are the Symptoms of Work-related Asthma?

People who have work-related asthma often do not realize that their symptoms are related to their work. The symptoms are the same as for regular asthma. They include any or all of the following:

- cough
- shortness of breath
- wheezing, and
- chest tightness.

In work-related asthma, the symptoms usually become worse during the working day and throughout the workweek. They decrease over the weekend, on days off and during vacations.

If you have these symptoms, go to your doctor or to the occupational health department or employee health services at work. If your doctor, or another health care professional, thinks that you may have work-related asthma, it is important to tell your supervisor, union representative and joint health and safety committee (JHSC), right away.

What Causes Work-related Asthma?

Chemicals in Cleaning Products that can Cause Occupational Asthma

Some chemicals found in products used for cleaning and disinfection at work can cause occupational asthma. The Table lists some examples.

Cleaning Products that can Trigger Work-aggravated Asthma

Many cleaning products and disinfectants contain chemicals (e.g., chlorine, ammonia, hydrochloric acid) that may irritate the lungs and make asthma worse.

In addition, other irritants and common allergens that may cause work-aggravated asthma are present in many workplaces. They include:

- fumes, vapours, dusts and sprays (e.g., those from industrial sources [particularly acids, chlorine, alkaline dusts, smoke and/or aldehydes]; paints, perfumes and fragranced products, and second-hand cigarette smoke¹)
- other irritants and common allergens (e.g., irritant dusts from mineral sources such as cement dusts, common allergens from animal or plant sources such as dust mites, mould and fungal spores)
- viral respiratory infections
- indoor air pollution (inadequate ventilation), and
- outdoor air pollution or smog (for outdoor employees).

OTHER FACTORS

Other factors that may cause work-aggravated asthma in any workplace include:

- temperature and humidity extremes (cold and heat), and
- physical exertion.

Who is at Risk?

Janitors, cleaners and others who clean and disinfect at work are at risk for work-related asthma. However, other workers who are present in the work area where the cleaning and disinfection products are used are also at risk.

Jobs where you may be exposed to cleaning products include:

- janitor, cleaner
- maid or housekeeper (e.g., in a hotel)
- domestic cleaner (e.g., employed in another person’s home)
- health care worker (e.g., nurse, practical nurse)
- office worker
- hotel maintenance worker
- restaurant worker, bartender, and
- teacher.

Working Safely with Cleaning and Disinfection Products

To work safely with cleaning products:

- choose “environmentally preferable” cleaning products, when they contain fewer sensitizers and irritants than conventional products
- read warning labels and follow them
- read material safety data sheets (MSDSs) for the products you use
- follow instructions when preparing cleaning products; never use a product at full strength when the instructions say to dilute it
- mix only the amount needed for the job
- never mix different cleaning products; mixing bleach and ammonia or bleach and acids can create poisonous fumes and vapours
- use the fewest number of products for the job
- use the smallest amount of any product that will do the job
- use the proper equipment for the job (e.g., microfibre cloths and mops pick up more dirt than “regular” dust cloths and mops)
- wear the correct personal protective equipment (PPE) for the job (a dust mask **will not** protect you from breathing fumes and vapours from cleaning products)
- whenever possible, avoid sprays and aerosols; instead use products that can be poured and wiped
- clean up spills immediately
- increase ventilation rates and/or leave windows and doors open during and after applying cleaning products or disinfectants (leave windows and doors open for about 1 hour after cleaning, or longer if it is a large job or several different cleaning products have been used)
- whenever possible, clean after regular working or school hours; if this is not possible, let others know in advance when you will be cleaning in their work area, and
- store cleaning products in their original containers.



Table: Some Chemicals that are Related to Cleaning Products and may Cause Occupational Asthma

Cleaning Duties or Products	Chemicals
All-purpose cleaning, glass cleaning, degreasing, oven cleaning, tile and grout cleaning	<ul style="list-style-type: none"> • ethanalamines (all-purpose cleaners, degreasers, glass cleaners, oven cleaners) • quaternary ammonium compounds, such as benzalkonium chloride (all-purpose cleaner) • amino alcohols • aliphatic polyamides
Disinfecting (e.g., kitchen, toilet, other surfaces)	<ul style="list-style-type: none"> • in any setting, quaternary ammonium compounds • in industrial and hospital settings: <ul style="list-style-type: none"> ○ formaldehyde ○ glutaraldehyde ○ chlorhexamine, chloramine T
Floor cleaning, waxing, stripping and polishing	<ul style="list-style-type: none"> • ethanalamines • formaldehyde • benzalkonium chloride
Carpet cleaning	<ul style="list-style-type: none"> • tributyl tin oxide
Laundry	<ul style="list-style-type: none"> • monoethylamine (MEA) • ethylene diamine triethylene tetramine (EDTA)
Pool cleaning and/or disinfecting	<ul style="list-style-type: none"> • muriatic acid • chloramine

Never mix cleaning products that contain ammonia with chlorine bleach or products that contain acids. Accidental spills or mixtures causing high levels of irritating fumes can also cause occupational asthma.

¹ Second-hand smoke cases in Ontario are now reduced because of anti-smoking bylaws in workplaces.

To work safely with disinfectants:

- select the right disinfectant for the job (check with the employer, JHSC and/or an industrial hygienist from the Occupational Health Clinics for Ontario Workers [OHCOW] or Workplace Safety & Prevention Services [WSPS])
- choose “environmentally preferable” disinfectants, when these contain a smaller load of sensitizers and irritants
- plan how often to disinfect (e.g., high traffic areas need to be disinfected more often – check with the employer and JHSC)
- dilute disinfectants according to the manufacturers’ directions (check with the employer and JHSC, as needed)
- use the lowest concentration recommended by the manufacturer
- mix only the amount needed for the job
- clean the area before disinfecting (follow the manufacturer’s instructions)
- use the smallest amount of disinfectant that will do the job, and
- store disinfectants in their original containers.

“Environmentally Preferable” Cleaning Products

Many workplaces are starting to use cleaning products that are safer for the environment. They may be called “green” or “eco” cleaning products. When choosing such products:

- choose ones that have been certified (proven) to be less harmful to both the environment and people’s health, and
- look for products labelled with an Environmental Choice, Envirosesic or Green Seal logo (they are less harmful to the environment and to people’s health).

Products that have these logos on the label may still cause occupational asthma or work-aggravated asthma in some people. Therefore, employers and workers should take the prevention steps listed below, even when using green cleaning products.

How to Prevent Work-related Asthma due to Cleaning Products

Work-related asthma can largely be prevented by eliminating or reducing exposure to any agents that are known to cause it. Both employers and employees can help to prevent it.

Employers

All employers should take all reasonable measures to prevent work-related asthma:

- first, try to **eliminate** the asthma-causing agent from the workplace
- if elimination is not possible, **substitute** a less hazardous agent (check MSDSs)
- when substitution is not possible, **control the exposure** by closing off the work processes that release the agent into the air, or by installing ventilation systems to capture and contain emissions (e.g., gases, vapours) at the source

- apply **administrative controls**: these include policies, procedures, safe work practices, job rotation and advance notice to **minimize exposure time of workers**, and
- provide **PPE**, such as respirators, to employees
PPE is the last line of defence and should not be used as the only method of exposure control when exposures are ongoing. PPE should be used when exposures are not already prevented or significantly reduced by elimination, substitution and control. Anyone using PPE also needs training on its proper use, storage and maintenance.
- **train employees** on safe working and housekeeping procedures, and
- **monitor** the exposure level of hazardous agents in the workplace to make sure that workers are not exposed to levels greater than recommended in regulations, standards and guidelines.

Employers are supposed to inform their employees about potential workplace hazards and to provide proper training. Employers must make sure that every controlled product has an up-to-date MSDS (one that is less than 3 years old) when it enters the workplace.

Occupational health professionals are available to help employers recognize, evaluate and control workplace hazards and their health effects. They can also provide education and information to employees on work-related asthma and its control measures.

Employees

Employees can also help to ensure that they do not get work-related asthma. You can:

- **learn about the hazards in the workplace** by speaking to your health and safety or union representative, an occupational health professional (e.g., a nurse or doctor from your occupational health or employee health department) or your employer
- **attend training courses** provided on work-related asthma and occupational health and safety
- **be aware of the early signs** of work-related asthma
- **follow safe work practices**, policies and procedures that are provided by your employer
- **use the PPE** provided
- **report any problems** with equipment, PPE or ventilation systems, and
- **participate** in all health and safety programs in the workplace.

What Should I do if I Have Trouble Breathing?

Act right away if you have symptoms of work-related asthma:

- make an appointment with your family doctor
- tell your doctor your symptoms, where you work, what your job is and what chemicals and materials you work with every day
- take this fact sheet to your doctor, and
- ask your doctor for a referral to an occupational health professional who has a good knowledge and

understanding of work-related asthma (e.g., you could contact a respiratory [lung disease] doctor, an allergist, an occupational health doctor or nurse from your occupational health or employee health department, an OHCOW clinic or an occupational lung disease clinic or specialist).

If your asthma started while you were working and seems worse at work, it is particularly important to have specialized tests arranged to determine whether you have occupational asthma.

If your doctor tells you that you have work-related asthma, tell your supervisor, occupational health or employee health department, JHSC representative and/or union representative, right away.

Anyone who has work-related asthma needs ongoing protection from asthma-causing agents or triggers at work, even if the asthma is controlled with medication. Steps can be taken to move you away from the exposure, such as changing the duties in your current job or changing your job in your workplace. In some cases, you may need to leave the job, especially if you have occupational asthma. The Workplace Safety and Insurance Board (WSIB) provides compensation (payment), if you have to leave a job (even for a short time) due to work-related asthma.

Work-related asthma is a serious illness. If you are not protected from workplace exposures and do not get medical treatment, you may become permanently disabled, which could affect your ability to continue to work in your current job. Early recognition and treatment are very important to prevent this illness from getting worse.

For more information, contact:

- Occupational Health Clinics for Ontario Workers: www.ohcow.on.ca or 1-877-817-0336
- Workplace Safety & Prevention Services: www.wspss.ca or 1 877 494 WSPS (9777)
- Ontario Safety Association for Community and Healthcare: www.osach.on.ca or 1-877-250-7444 (for health care employees)
- The Lung Association’s Asthma Action Helpline: 1-800-668-7682
- The Lung Association: www.on.lung.ca or 1-888-344-LUNG (5864)
- The Asthma Society of Canada: www.asthma.ca or 1-866-787-4050
- Workplace Safety and Insurance Board: www.wsib.ca or 1-800-465-5606
- Ministry of Labour health and safety information: www.labour.gov.on.ca/english/hs/index.html or 1-800-268-8013.

Contact OHCOW or WSPS for the companion brochure, *Work-related Asthma: Preventing Work-related Asthma* in the Cleaning Industry, which accompanies this fact sheet.