

# Occupational Asthma

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**A guide for employers, workers and their representatives**



British Occupational Health Research Foundation





## What is asthma?

A condition in which inflammation of the lining of the small airways of the lung together with spasms of the muscles around the airways, cause these airways to narrow and reduce airflow both into and out of the lungs. This produces wheezing, shortness of breath, chest tightness, and coughing. Most people with asthma have periodic attacks of symptoms separated by symptom-free periods. Symptoms can be aggravated by cold air and cigarette smoke and are often worse at night or early in the morning.

## What is work related asthma?

There is an association between symptoms and work, and can be put into the following categories:

- ***Work aggravated asthma:*** pre-existing/new onset worsened by workplace exposure
- ***Occupational asthma:*** caused by substances inhaled at work, typed as follows:
- ***Allergic:*** or sensitised to a substance caused by a reaction from the immune system. There is a gap between exposure and symptoms.
- ***Irritant:*** Airway dysfunction caused by a reaction to a substance which does not involve the immune system. Symptoms develop within a few hours of exposure.

## What is the extent of the problem?

Occupational factors account for 9-15% of cases of asthma in adults of working age with almost 90% of those cases being attributed to an allergic response. The substances responsible for this are known as sensitising agents, and many are well known. HSE figures show that 1,500 to 3,000 people develop occupational asthma in the UK every year, rising to 7,000 including work aggravated cases.

In terms of effects on the economy, new cases over a ten-year period cost society £1.1 billion. In terms of human cost, some workers are left severely disabled, causing early retirement with others forced to change jobs. Occupational asthma is readily preventable, and this is based on controlling exposure to sensitising agents.

### About this guidance

This guidance is based primarily on findings from medical evidence relating to occupational asthma and agents known to cause asthma (asthmagens). Using good medical evidence to support this type of guidance is essential, in order to decide the policies for the prevention, identification and management of occupational asthma.

There are full guidelines available from the British Occupational Health Research Foundation (BOHRF). These are aimed at a whole range of groups from the medical profession to employers, workers and their safety representatives. This brief guide is primarily based on these guidelines and targets people in the workplace, supporting good occupational health management practices and worker consultation. The guide will be distributed on a global basis.

### Legal requirements

Since this guide will be distributed world wide it is difficult to cite any specific legislation, however the principles of legal requirements regarding risk assessment are fairly universal. What follows are legal concepts connected to controlling the causative agents of occupational asthma, and would be common especially in the European Community.

- Assess the risks and decide what precautions are needed
- Prevent or adequately control exposure by elimination or substitution

- If this is not possible, by engineering controls such as enclosure and extraction
- As a last resort, PPE such as Respiratory Protective Equipment (RPE)
- Ensure control measures are used and maintained
- Monitor the exposure regularly
- Provide health surveillance to at risk groups

In the UK these requirements come under the auspices of: The Control of Substances Hazardous to Health Regulations (COSHH).

### Consultation

This is important and should involve workers, safety representatives and their trade union; not only is it good practice but consultation is a legal duty. This joint approach is essential; the following are some examples of why.

Health surveillance plays an important role in identifying the condition and those affected will be more at ease if their safety representatives are fully involved in the process. Trades unions are a good source of advice, for example on legal requirements such as data protection and disability discrimination, and identifying causative agents.

Safety representatives carry out workplace inspections, which includes checking engineering controls such as ventilation or personal protection. They are fundamental to the risk assessment process and securing a good safety culture.

It is very important to remember that consultation is about involving all parties and taking on board their views, not just giving workers information.

## What do employers, their workers and safety reps need to know?

At least 1 in 10 cases of new or recurrent asthma in adults is caused by workplace exposure, and these are related to a very large number of substances used at work. The most frequently reported agents include:

*Isocyanates – these are found in many paints and foams; Flour and Grain Dust; Colophony and Fluxes; Latex; Animals; Aldehydes; Wood Dust etc.*

There are many more substances (agents) that are known to be capable of causing occupational asthma, and these will affect a whole host of occupations. These include *bakery workers, pastry makers, paint sprayers, cleaners, nursing and care staff, catering workers, lab technicians, chemical workers, animal handlers, woodworkers, welders and timber workers etc*

The risk of developing occupational asthma is connected to the level of exposure to the agents, this means that the chances of developing an allergy to the substance will increase at higher exposure levels. Therefore removing or reducing exposure to the substance will reduce the incidence of the disease.

It is important you address the situation immediately as sensitisation and occupational asthma are more likely to develop in the first years of exposure, such as from isocyanates.

In addition people develop symptoms of asthma at lower levels than those which will cause sensitivity, and the quicker they are removed from exposure the more likely a complete recovery is possible. It is extremely important that employees are informed of the causes, risks and symptoms of asthma so they can report them.

## What are the symptoms?

Workers should report the following symptoms as soon as they develop, either to occupational health or their GP, and discuss with them about informing employers:

- Attacks of wheezing, coughing, chest tightness or shortness of breath;
- Rhinitis (sneezing, runny nose) and/or
- Conjunctivitis (itchy and inflamed eyes) are other key symptoms.

The symptoms may develop immediately after exposure, but sometimes may only appear after several hours' exposure. Whilst it may not necessarily be occupational asthma, the evidence indicates that the diagnosis is likely to be occupational asthma in about half the cases referred to a chest physician.

When any one worker develops confirmed occupational asthma or rhinitis, the exposure and presence of symptoms of other workers should be investigated.

## What are the solutions?

Eliminating or substituting the sensitising agent is the best control measure. You therefore need to decide if you can use another substance that is not a known sensitiser. The full list of sensitisers can be obtained from your relevant government body.

If you need to use the substance then you will need to look at making sure that exposure is effectively controlled. This can be achieved at source for example by using engineering controls such as ***Local Exhaust Ventilation (LEV)***. The equipment should be selected carefully, monitored for effectiveness and maintained and inspected regularly.

***Personal Protective Equipment (PPE)*** is the last resort – so how effective is it in controlling incidences of the disease?

Respiratory Protective Equipment (RPE) will reduce the incidence of the condition but not prevent it. To achieve optimum effect it has to be of the appropriate type, fit tested, well maintained and training given in wearing, removal, storage and replacement. It must be noted that even brief removal of the RPE will result in a higher risk of becoming sensitised and developing occupational asthma.

Preventing onset of the disease by eliminating or reducing exposure is the primary objective; a secondary method involves detecting early or pre-symptomatic disease.

This incorporates adequate consultation with workers and their representatives, to implement health surveillance combined with education and training. The purpose is to prevent worsening of symptoms by early detection and removal from exposure.

Removal from exposure should not mean loss of job under frustration of contract, as a person who develops occupational asthma might be covered by disability legislation. The employer would then be required to make suitable adaptations to ensure that work is available without being exposed to the causative agent. This may involve redeployment to a similar job or substitution of the hazardous agent, to avoid lack of improvement or worsening of the condition. In all cases safety representatives and their unions should be involved in discussing this matter.

## Health surveillance

Where a risk of occupational asthma is identified health surveillance should be provided. This can detect the disease at an early stage and the outcome is improved in workers who are included in the programme.

For new workers or those transferring to a new job where there is a risk of occupational asthma, health surveillance should be:

- A respiratory questionnaire completed annually
- During the first two years of employment, more frequent surveillance
- Workers with pre-existing asthma of any origin should have more frequent surveillance to detect any evidence of deterioration
- Workers who develop rhinitis should have increased surveillance, and the workplace exposure should be investigated and reduced

There are different types of test used for identification of the disease, and these are available in the full guidelines. Here is a brief insight into some of the relevant tests to give you an idea:

Skin prick testing and blood sampling, may be available to detect antibodies to some asthmagens, which would be present in a sensitised person. Clinical questionnaires are useful to identify symptoms of wheeze and/or shortness of breath, but will not detect all people with asthma. Lung function tests may identify some cases of asthma not detected by questionnaire, although the disease can be present with normal readings.

Employers should assess exposure in the workplace and find out if any of their people have any relevant respiratory symptoms. It is essential workers representatives are consulted fully in developing and initiating questionnaires of this kind. In the UK, trade union representatives are being trained, in a health monitoring technique called body mapping. (For more information contact the TUC). This is not only useful in detecting symptoms, but workers are more likely to discuss any problems with their Representatives.

If it is confirmed that any workers have developed occupational asthma, remedial measures should be implemented to protect them and all other workers.

## Medical confidentiality

Medical professionals will perform any clinical tests needed, and it must be noted that for an employer to obtain the full results, the consent of the person is needed. This also applies to any questionnaire enquiring about symptoms – consent is subject to strict laws on medical confidentiality.

In developing a consent form workers and their representatives must be consulted. Strict legal advice should also be obtained as forms need to be worded so they satisfy any legal requirements.

## What about new workers with asthma

These types of examinations should be approached with care, as little is known about people's susceptibility factors to occupational asthma. The evidence indicates that a previous history of asthma is not significantly associated with occupational asthma. So it should not be used to exclude individuals from employment; even identification of existing occupational asthma should not exclude someone from working. It would have to be established that the condition was caused by a particular substance/s, and that the person would be exposed to it/them in their new position. If in doubt, seek advice from an occupational health professional.

## Rehabilitation

If someone goes sick, due to occupational asthma, keep in contact with him or her and tell them you are ready to meet and help if necessary. Obtain consent to discuss plans for a return to work with their medical adviser, all parties should be involved medical practitioner, manager, workers' representative.

Rehabilitation is an important process, and should be taken up as soon as possible, as delaying will reduce effectiveness.

The chances of an individual returning to work decreases significantly with the passage of time.

There is consistent evidence derived from several countries that about one third of workers with occupational asthma are unemployed after diagnosis. This figure remains the same for these sufferers even after six years, showing that rehabilitation programmes for people with this disease need to be implemented. This is because the loss to society as a whole is immense, in terms of:

*Reduced quality of life and financial loss for the sufferer*

*Loss to family, friends and the community from reduced social activity*

*Loss of skills and cost to business*

*Cost to the tax payer*

Early diagnosis and early avoidance of further exposure, either by relocation or substituting the sensitising agent, offer the best chance of complete recovery.

Remember that involving all concerned parties, and working together, will greatly increase the chances of successful rehabilitation. In fact a good all round partnership will help reduce the adverse effects of occupational asthma as a whole.