

Occupational Disease Casebook

Occupational Asthma



Occupational Safety and Health Branch
Labour Department



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Introduction

Occupational asthma is caused by prolonged inhalation of allergens at work, which results in bronchial hypersensitivity to these allergens leading consequently to episodic attacks of airway obstruction (i.e. asthma). The more common allergens include isocyanates, rosin fumes, formaldehyde, flour and protein.

Occupational asthma is one of the prescribed occupational diseases under the Employees' Compensation Ordinance. As occupational asthma shares the same symptoms as ordinary asthma, its diagnosis relies very much on detailed occupational and medical history as well as information on the relationship between work and attacks. Most patients do not have asthma before the relevant employment and asthmatic attacks appear after they have worked for a period of time. During attacks, the patient may have difficulty in breathing, shortness of breath, wheezing and coughing. Attacks may become more frequent and severe in the course of work while the condition may be better during vacation. The treatment for occupational and ordinary asthma is the same, mainly by the use of bronchodilators to alleviate the symptoms during attacks. In severe cases, steroid may be used at the same time. These medications can only control the symptoms but the disease cannot be cured.

The objective of this booklet is to illustrate, with four cases, the causes of occupational asthma and the specific measures to prevent the disease.

Decoration Worker

Case Summary

Peter was a decoration worker and his main duty was to put waterproof silicone rubber sealants onto window jambs to prevent leakage. Having taken up the job for one and a half years, he found that he had difficulty in breathing, shortness of breath, coughing and wheezing whenever he worked for about ten minutes as a result of inhaling odours of the waterproof sealants. Peter went to hospital and was examined thoroughly by a doctor. He was diagnosed with occupational asthma.



Case Analysis

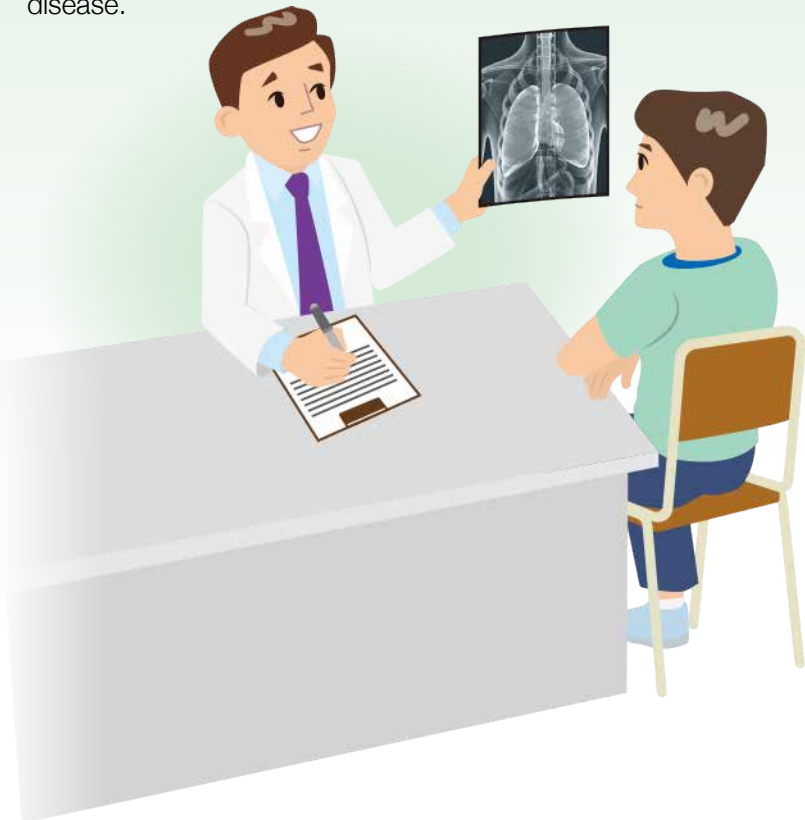
Peter contracted occupational asthma because of the following reasons:

- 1 The waterproof sealants contain an allergen called methylene diphenyl diisocyanate which can cause asthma.
- 2 Inadequate ventilation in the workplace led to the accumulation of chemicals.
- 3 Failure to use a suitable respirator at work.

Preventive Measures

Cases of occupational asthma similar to Peter's can be prevented by taking the following measures:

- 1 Ensure good ventilation and an effective exhaust system installed at the workplace to reduce the accumulation of chemicals.
- 2 Use suitable respirators at work.
- 3 Pre-employment and periodic medical examinations allow early detection of asthmatic symptoms and prevent deterioration of the disease.



University lecturer

Case Summary

Ann was a lecturer of the department of anatomy at a university. Apart from teaching, she often had to conduct research work in the autopsy room. The specimens that she handled were preserved in formalin.

At the beginning, she had eyes and throat discomfort, and with symptoms like tearing and running nose. Later, she had

difficulty in breathing, cough and wheezing soon after inhaling volatile formalin

vapours. She suspected that she had asthma.

Ann went to hospital and was examined thoroughly by a doctor.

She was diagnosed with occupational asthma.



Case Analysis

Ann contracted occupational asthma because of the following reasons:

- 1 Formalin contains formaldehyde which is an allergen that can cause asthma.
- 2 After taking specimens out of the specimen bottles, she often failed to re-cap the bottles, which caused continuous vaporization and accumulation of formaldehyde at the workplace.
- 3 No suitable exhaust system was installed in the autopsy room to remove the accumulated formaldehyde.

Preventive Measures

Cases of occupational asthma similar to Ann's can be prevented by taking the following measures:

- 1 Maintain good working habits and re-cap the bottles right after taking specimens out.
- 2 Ensure good ventilation and an effective exhaust system (e.g biological safety cabinet) installed at the workplace to reduce the accumulation of chemicals.
- 3 Pre-employment and periodic medical examinations allow early detection of asthmatic symptoms and prevent deterioration of the disease.



Baker

Case Summary

John had been working in a bakery for more than twenty years. Every day, he used a large amount of flour, sugar, eggs and yeast powder to bake various kinds of bread and cakes. In the course of baking, he used his hands to mix flour and other ingredients, resulting in the flour particles floating in the air. As early as two years ago, John had already had symptoms like coughing. Later on, he also had wheezing. His condition fluctuated from time to time, and all along it could not be cured. John went to hospital and was examined thoroughly by a doctor. He was diagnosed with occupational asthma.



Case Analysis

John contracted occupational asthma because of the following reasons:

- 1 Constant inhalation of flour particles floating in the air while at work.
- 2 Failure to use suitable ventilation system causing accumulation of flour particles.
- 3 Failure to use a suitable respirator at work.

Preventive Measures

Cases of occupational asthma similar to John's can be prevented by taking the following measures:

- 1 Use suitable equipment such as mixers with covers, to mix flour with other ingredients.
- 2 Use an effective exhaust system to improve ventilation at the workplace.
- 3 Use suitable respirators at work.
- 4 Pre-employment and periodic medical examinations allow early detection of asthmatic symptoms and prevent deterioration of the disease.



Welder

Case Summary

Frankie had been working as a welder for more than three years, during which he always inhaled fumes generated from welding. About half a year ago, he often had running nose, cough, difficulty in breathing and wheezing after work, that even made him unable to sleep. He noticed his symptoms worsened after work, but there was some improvement when he was on leave.

Frankie went to hospital and was examined thoroughly by a doctor. He was diagnosed with occupational asthma.



Case Analysis

Frankie contracted occupational asthma because of the following reasons:

- 1 The welding fumes contained ozone and metals such as chromium that sensitized his airways and finally led to asthma.
- 2 Inadequate exhaust ventilation at the workplace resulted in the accumulation of allergens.
- 3 Failure to use suitable respirators during welding.

Preventive Measures

Cases of occupational asthma similar to Frankie's can be prevented by taking the following measures:

- 1 Welding should be performed at well-ventilated workplaces installed with suitable exhaust systems to reduce the accumulation of allergens.
- 2 Use suitable respirators at work.
- 3 Pre-employment and periodic medical examinations allow early detection of asthmatic symptoms and prevent deterioration of the disease.



Conclusion

Although this booklet only presents four cases from different industries, the causes of these cases and the respective preventive measures are also useful to employers and employees of other trades/industries for reference in order to reduce the risk of employees contracting occupational asthma.

Enquiries

If you wish to enquire about this booklet or other occupational safety and health matters, please contact the Occupational Safety and Health Branch of the Labour Department through:



2852 4041 or

2559 2297 (auto-recording service available outside office hours)



2581 2049



enquiry@labour.gov.hk

Information on the services offered by the Labour Department and on major labour legislation is also available on our website at www.labour.gov.hk.

For details on the services offered by the Occupational Safety and Health Council, please call 2739 9000, or browse the website at www.oshc.org.hk.

Occupational Health Clinics of the Labour Department

Any workers who are suspected of suffering from work-related illness, can make a call to the Occupational Health Clinic for appointment booking. Doctor's referral is not required.

Kwun Tong Occupational Health Clinic



2343 7133

Fanling Occupational Health Clinic



3543 5701

Complaints

If you have any complaint about unsafe operations or environments at workplaces, please call the LD's OSH complaint hotline at 2542 2172 or fill out and submit an online OSH complaint form on our website. All complaints will be treated in the strictest confidence.



Online OSH Complaint Form

This booklet is issued free of charge and can be obtained from offices of the Occupational Health Service of the Labour Department. It can also be downloaded from website of the Labour Department. For enquiries about the addresses and telephone numbers of the offices, please visit the website of Labour Department or call 2852 4041.

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