



# Extrinsic allergic alveolitis (EAA)

The aim of this information is to explain a group of allergic lung diseases called extrinsic allergic alveolitis (EAA), linked to exposure to dust.

## What is EAA?

EAA refers to a group of lung diseases that can develop after exposure to certain animal and vegetable dusts. The name describes the origin and the nature of these diseases:

- 'extrinsic' – caused by something originating outside the body
- 'allergic' – an abnormally increased (hypersensitive) body reaction to a common substance
- 'alveolitis' – inflammation in the small air sacs of the lungs (alveoli)

## What causes EAA?

Exposure to certain animal and vegetable dusts can produce EAA. The effects may occur after a few days of contact, or they may take years to develop. The dusts responsible are usually a complicated mixture of substances, often contaminated by tiny bugs (micro-organisms), which can cause an allergic reaction. The dusts can come from:

- husks
- bark
- wood
- mouldy hay, straw, and bagasse (fibres from crushed sugar cane)
- grain
- insects and insect fragments
- 'bloom' (dust) from bird feathers
- dried urine of rodents (usually those housed in laboratories)
- animal dander (old skin scales that are constantly shed)
- bacteria
- fungi, or mould

Micro-organisms also produce toxic chemicals that may form part of the dust.

## What are the symptoms?

Once you have been exposed to the dust and have developed antibodies, you are 'sensitised', meaning you have become allergic to the dust. There are three possible ways in which your body may respond to this:

- acute (sudden onset)
- sub-acute (coming on more gradually)
- chronic (long-term)

Depending on both the individual and the exposure dose, symptoms may include:

- cough
- breathlessness
- sweating
- sore throat
- headache
- nausea
- occasional fever
- loss of weight
- lack of energy

In general, flu-like symptoms are most common in the more acute forms. However, in most chronic cases breathlessness and weight loss are the main symptoms. In some cases there is progressive lung damage, which may be permanent, but this is rare. EAA can very occasionally cause death, but only in extreme and rare cases.

### How is EAA diagnosed?

The most important factors in making the diagnosis are your job or personal history (for example, have you been exposed to certain kinds of dust?), as well as blood tests. Your doctor may need to do some other tests, such as chest X-rays, CT scans and lung function tests to see how severe your EAA is.

### How is EAA treated?

Following diagnosis, you should avoid coming into contact with the animal and vegetable dust that causes your EAA, if possible. This alone should improve your health and prevent progression. Most cases of EAA will get better or stop progressing once exposure to the cause has ceased. For serious cases, you may need medical treatment in the form of steroids or oxygen.

### Who is at risk?

You can get EAA in many different environments and it is commonly linked to the workplace. However, one of the most common causes in the UK is keeping budgerigars at home. The following table lists some of the diseases, and illustrates how you may get them.

### Examples of EAA

Disease	Exposure	Preventive measures
Air conditioner lung	Reservoir water in humidification systems contaminated with micro-organisms	Maintenance of air and water handling systems
Animal handler's lung	Dander, hair particles, dried rodents' urine	Good ventilation
Bagassosis	Sugar cane contaminated with micro-organisms after the sugar is extracted	Application of a special kind of acid to bagasse (fibres from the crushed sugar cane). Good ventilation. Sealed processes, meaning there is no risk of leaks and no fumes or dust escape into the atmosphere.
Bird fancier's lung	Bloom from feathers and possibly dust from droppings	Good ventilation. Spray droppings with water when cleaning.

Disease	Exposure	Preventative measures
Cheese washer's lung	Cheese mould	Wrap the cheese in foil during ageing.
Farmer's lung	Mouldy hay, straw, grain	See section on dust control below.
Malt-worker's lung	Mouldy malt	Application of mechanical methods in the malting process.
Maple bark stripper's disease	Mouldy maple bark	Spray logs during debarking. Remote control of some operations.
Mushroom worker's lung	Mouldy mushroom compost	Good ventilation.
Sequoiosis	Mouldy sawdust from sequoia trees	Good ventilation. Sealed processes.
Sewage sludge disease	Dust of heat-treated sludge	Good ventilation. At outside facilities, you should stand upwind of storage piles.
Wheat weevil lung	Weevil contamination of grain or flour	See section on dust control below.
Suberosis	Mouldy cork dust	Good ventilation.
Wood pulp worker's disease	Mouldy wood chips	Good ventilation. Remote control of some operations.

### How can EAA be prevented?

There are three basic steps you can take to reduce the amount of dust you come into contact with:

- Ventilation – local exhaust ventilation and general ventilation both help.
- Separation – separate yourself from any dusty processes and use personal protective equipment such as a respirator (mask) and gloves.
- Education – it is important to know that certain animal and vegetable dusts can cause diseases. Managers and workers should learn about ways to store materials so that they minimise mould formation and reduce dust.

On farms, you can reduce the possibility of EAA by:

- Using well-designed, leak-proof ducting and enclosed conveyor systems for grains and feeds.
- Using local ventilation systems in any egg-handling areas or feed storage and/or preparation areas.
- Ensuring that there is effective ventilation and plenty of fresh replacement air.
- Fitting the enclosed cabs of tractors and combine harvesters with air filters.

It is important to wear personal protective equipment, but this should be considered as the last resort for respiratory protection. Such equipment is not a substitute for proper dust control. A key point is often the storage of vegetable produce in a manner that minimises contamination with micro-organisms – initial drying and storage in a dry environment.

Ideally, dust suppression measures should be put in place by the employer – but these are very costly. Respirators (such as dust masks), are best used when:

- engineering or administrative controls are not technically possible;
- engineering controls are being installed or repaired; or
- there is an emergency or other temporary situation – for example, maintenance operations.

If you need respiratory protective equipment for a job, then a full respiratory programme should be put in place that includes selection, use, and care of masks and other respirators. You should also receive a training and education programme via your employer.

Remember, there are a range of respirators that give different levels of protection. It is important to identify what the dust is so that you can choose the right respirator. If your EAA is caused by your work environment, but neither dust prevention measures nor respirators are feasible or effective, then it may be necessary for you to consider working in another environment where such dusts are not present.

## Further advice

Ask your doctor for more advice on EAA or contact the following organisations, which may be able to advise on work-place training and correct respiratory protection:

- UK Health and Safety Executive. **helpline:** 0845 345 0055 **w:** [www.hse.gov.uk](http://www.hse.gov.uk)
- Environment Agency of England and Wales.  
**helpline:** 03708 506 506 **w:** [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)
- Scottish Environment Protection Agency. **t:** 01786 475700 **w:** [www.sepa.org.uk](http://www.sepa.org.uk)

The British Lung Foundation (BLF) Helpline can also provide advice on EAA and other types of lung condition. It is open from 10am to 6pm, Monday to Friday and calls are charged at a local rate.

**Helpline:** 08458 50 50 20

## Related information

The BLF produces a range of leaflets, booklets and other information materials about lung disease. These are available to read on our website – [www.lunguk.org/publications](http://www.lunguk.org/publications) – and can be ordered free of charge from our online shop at [www.blfgifts.com](http://www.blfgifts.com) or by calling the BLF Helpline on 08458 50 50 20.

The following may be of interest to you:

- Allergy (FL6)
- Occupational lung disease (FL17 & BK8)

The BLF values feedback on all of its information. Let us know your views by contacting us using the details below.

British Lung Foundation  
73-75 Goswell Road  
London EC1V 7ER

- **helpline:** 08458 50 50 20
- **e:** [enquiries@blf-uk.org](mailto:enquiries@blf-uk.org)
- **w:** [www.lunguk.org](http://www.lunguk.org)

Registered charity of England and Wales – no.326730  
Charity registered in Scotland – no. SC 038415

**Code:** IS11      **Version:** 2.0  
**Last medically reviewed:** June 2011  
**Due for medical review:** June 2013  
**For the most up to date version of this leaflet and for references call 020 7688 5555 or visit [www.lunguk.org](http://www.lunguk.org)**