

Hay Fever Basics



Hay fever is a type of allergic rhinitis caused by pollen or spores. Allergic rhinitis is a condition where an allergen (something that causes an allergic reaction) makes the inside of your nose inflamed (swollen).

Hay fever usually occurs in spring and summer, when there is more pollen in the air. Trees, grass and plants release pollen as part of their reproductive process. Mould and fungi also release tiny reproductive particles, called spores.

People with hay fever can experience their symptoms at different times of the year, depending on which pollens or spores they are allergic to.

Symptoms

Hay fever symptoms vary in severity and your symptoms may be worse some years than others, depending on the weather conditions and the pollen count (see below). Your symptoms may start at different times of the year depending on which types of pollen you are allergic to.

The symptoms of hay fever include:

- frequent sneezing
- runny or blocked nose
- itchy, red or watery eyes (also known as allergic conjunctivitis)
- an itchy throat, mouth, nose and ears

Less commonly, you may experience:

- the loss of your sense of smell
- facial pain (caused by blocked sinuses)
- sweats

- headaches

Hay fever is an allergic reaction

Hay fever symptoms are caused by protein molecules in pollen grains. The immune system 'over-reacts' to these allergens, which it manifests in the form of an allergic reaction. Immune molecules known as Immunoglobulin E are produced and these cause the release of the inflammatory chemical called histamine from mast cells (a type of immune cell).

It is histamine that produces the characteristic symptoms of an allergic reaction.

A non-allergic person's immune system will not produce this reaction on exposure to allergens in pollen.

Hay fever and everyday life

Hay fever is not considered a medically serious allergy, unlike peanut allergy or asthma which can cause potentially fatal attacks. The main impact hay fever has on everyday life is upon the general quality of life. Common effects are:

- regular headaches
- trouble sleeping
- loss of productivity at work and in school
- adverse effects on sporting activities

I swear the pollen count has reached destroy-the-humans level today.

Research shows that students' academic performance may be affected during exams, given that the exam season usually coincides with the height of the pollen season.

How common is hay fever?

Hay fever is a relatively new disease, first described in 1819. It took nine years to accumulate enough hay fever cases to present a paper on this new condition to a medical journal. Now hay fever is much more common, particularly in the UK, which has more cases than anywhere else in the world (followed closely by Ireland, New Zealand, Australia and Canada). Hay fever:

- is the most common allergic disease
- affects 10-25% of adults in the UK
- affects 10% of children (aged six-seven) and 15% of those (aged 13-14)
- is now being seen in children as young as three and four years old

Hay fever and asthma

If you have asthma, your asthma symptoms may get worse when you have hay fever. Sometimes, asthma symptoms only occur when you have hay fever. These symptoms include:

- tight chest
- shortness of breath
- coughing
- wheezing

Pollen count

Hay fever symptoms are likely to be worse if the pollen count is high. The pollen count is the number of grains of pollen in one cubic metre of air.

Air samples are collected in traps set on buildings two or three storeys high. Taking samples from this height gives a better indication of the pollen in the air from both local and distant sources. Traps on the ground would only collect pollen from nearby trees and plants.

The air is sucked into the trap and the grains of pollen are collected on either sticky tape or microscope slides (glass plates). The pollen is then counted. Samples are usually taken every two hours, and the results are averaged for a 24-hour period.

The pollen forecast is usually given as:

- low: fewer than 30 grains of pollen in every cubic metre of air
- moderate: 30-49 grains of pollen in every cubic metre of air
- high: 50-149 grains of pollen in every cubic metre of air
- very high: 150 or more grains of pollen in every cubic metre of air

Hay fever symptoms usually begin when the pollen count is over 50. The pollen count is usually given as part of the weather forecast during the spring and summer months.

Which pollens are you allergic to?



Most people with hay fever are allergic to grass pollen. However, trees, mould spores and weeds can also cause hay fever. Research suggests that pollution, such as cigarette smoke or car exhaust fumes, can make allergies worse.

There are around 30 types of pollen and 20 types of spore that could cause your hay fever. The

pollen that causes hay fever could come from:

- grass: The majority of people in Ireland with hay fever are allergic to grass pollen,
- trees: such as birch, oak, ash and cedar, or
- weeds: such as mugwort and ragweed

Spores that cause hay fever can come from:

- fungi, such as wild mushrooms, and
- mould, for example from compost heaps

When is there most pollen?

Different trees and plants produce their pollen at different times of the year.

Depending on which pollen you are allergic to, you may experience your hay fever symptoms at different times. In the UK:

- From January to April, pollens from trees are the most common cause of hay fever.
- From May to August, pollens from grass are the most common cause of hay fever.
- During the autumn, hay fever may be caused by weeds such as nettles and docks, late flowering plants, and mould and fungal spores.

The effect of the weather

The amount of sunshine, rain or wind affects how much pollen plants release and how much the pollen is spread around. On humid and windy days, pollen spreads easily. On rainy days, pollen may be cleared from the air, causing pollen levels to fall

During their pollen season, plants release pollen early in the morning. As the day gets warmer and more flowers open, pollen levels rise. On sunny days, the pollen count is highest in the early evening.

Confusing hay fever with other conditions

A person who appears to be suffering hay fever symptoms may be suffering from:

- Perennial rhinitis: In perennial rhinitis, some other allergen, like house dust mite, is involved (symptoms are present all year round but, for some reason, seem worse in the pollen season). To learn more about rhinitis, visit our Rhinitis Information page.
- Sinusitis: This is inflammation of the sinus cavities, which are empty spaces within the skull, behind the nose. Sinusitis may be caused by allergy, but it

may also be caused by benign growths in the nose called polyps. Acute sinusitis can also result from bacterial infection.

Alleviating hay fever

It is very difficult to completely avoid pollen or spores. However, reducing your exposure to the substances that trigger your hay fever should ease the severity of your symptoms. Follow the advice below to avoid being exposed to excessive amounts of pollen and spores.

When outside:

- avoid cutting grass, playing or walking in grassy areas, and camping
- wear wraparound sunglasses to stop pollen getting in your eyes when you are outdoors
- change your clothes and take a shower after being outdoors to remove the pollen on your body
- try to stay indoors when the pollen count is high
- keep car windows closed - you can buy a pollen filter for the air vents in your car (which will need to be changed every time the car is serviced)

When indoors:

- keep windows and doors shut in the house - if it gets too warm, draw the curtains to keep out the sun and keep the temperature down
- do not keep fresh flowers in the house.
- vacuum regularly, ideally using a machine with a HEPA (high-efficiency particulate air) filter.
- don't bring pollen indoors – during hay fever season try to change your clothes on arriving home and wash or rinse your hair
- dry laundry indoors to prevent them collecting pollen from outside
- damp dust regularly.
- Using an air cleaner may help, but it depends on the type of air cleaner (see below)
- keep pets out of the house during the hay fever season - if your pet does come indoors, wash it regularly to remove any pollen from its fur
- do not smoke or let other people smoke in your house

Smoking and breathing in other people's smoke will irritate the lining of your nose, eyes, throat and airways, and can make your symptoms worse.

Finally, check the pollen count regularly to know when your efforts need to be more concentrated.

Can an air cleaner help?

While numerous manufacturers of 'air cleaners' / 'air filters' claim to be able to clear pollen from the air, they can only reduce, not eliminate, the problem, because:

- they can only clean the air that passes through them, and stratification, eddies and more means that some air in the room never passes through the filter
- they don't clean surfaces at all and it only takes a small disturbance to put settled pollen back into the air

The only technology we know of that can neutralise pollen over time throughout the air in a room and on surfaces is Airora's 'Hydroxyl Cascade' technology.

You can learn more about why traditional air cleaners don't work well [here](#) and why Airora's unique technology does work [here](#).

