

Pollen allergy

Pollen from grasses, weeds or trees can trigger symptoms of allergic rhinitis (commonly known as hay fever) and asthma. Pollen seasons can last for several months and exposure is difficult to avoid. However, there are several ways to prevent or reduce symptoms.

What is pollen?

The word **pollen** is derived from the Greek word meaning 'fine flour' and the role of the pollen grain is to fertilise the female flower to reproduce plant species.

Pollen grains can be spread by birds, bees or wind:

- Some plants (such as flowering plants, including wattle trees) produce small amounts of pollen which are distributed by birds and bees from one plant to another.
- Other plants (such as pasture grasses and weeds) rely on the wind to spread their pollen. These pollen are produced in vast quantities, blow long distances and cause allergies in people, even if they live a long way from the source.

Most of the pollen that cause allergies is produced by airborne pollen from northern hemisphere grasses, trees and weeds:

- Improved pasture grasses are more allergenic than Australian native grasses.
- Pollen from exotic trees, which are planted for their autumn colours, is more allergenic than pollen from Australian trees.

Several types of weeds with highly allergenic pollen have also been introduced, including:

- Pellitory weed (commonly known as asthma weed) was accidentally introduced in a shipload of marble from Italy in the early 1900s. It is mainly found in Sydney.
- Paterson's Curse (*Echium plantagineum*) is an attractive flowering plant that was deliberately brought from England in the late 1800's by Dr Paterson. This plant has taken over large tracts of pasture in rural Australia and produces highly allergenic pollen.
- Ragweed and Parthenium weed were introduced in pasture seed imported from the United States. They have spread throughout Queensland and northern New South Wales.

Pollen allergy causes allergic rhinitis

The correct name for hay fever is seasonal allergic rhinitis. Even though it was known that pollen rather than hay was the cause as far back as the early 1800's, the term hay fever is still frequently used. Allergic rhinitis symptoms are caused by the body's immune response to inhaled pollen, resulting in chronic inflammation of the eyes and nasal passages.

Allergic rhinitis symptoms include:

- Runny, itchy, congested nose
- Irritable, itchy, watery and red eyes
- Itchy ears, throat and palate.

Allergic rhinitis is a common and debilitating disease

- Allergic rhinitis affects around 18% of people in Australia and New Zealand
- Allergic rhinitis predisposes people to more frequent sinus infections
- People with allergic rhinitis often suffer from fatigue due to poor quality sleep
- Moderate or severe allergic rhinitis impairs learning and performance in children, results in more frequent absenteeism in adults and reduced productivity, and therefore can cause considerable impairment in quality of life
- Around 80% of people with asthma have allergic rhinitis, and having allergic rhinitis can make asthma more difficult to control

Pollen can also trigger asthma

Some people with moderate or severe allergic rhinitis believe that their allergic rhinitis 'turns' into asthma or that it makes them tight in the chest or wheeze. However, pollen can directly trigger asthma as well as allergic rhinitis. Small particles of allergens can penetrate deep into the airways of the lung. Thunderstorms can also contribute to this:

- When pollen granules come into contact with water, starch granules are released that are small enough to be breathed into the airways, causing allergic rhinitis and asthma in some people
- If you wheeze mostly during Spring and/or Summer, see your doctor for appropriate advice

Further information on thunderstorm asthma is available on the ASCIA website:

www.allergy.org.au/patients/asthma-and-allergy/thunderstorm-asthma

Pollen seasons can last for several months

Pollination times vary with the plant variety and its location. For example, trees pollinate in late winter and early spring. Grasses flower next, and the weed 'Plantain' flowers from August through to May. Grass pollen numbers are also higher in inland areas, where there are no natural barriers to wind dispersal.

In Australia pollen numbers are lower on the east coast where the prevailing winds come from the sea and where there is protection from westerly winds by the Great Dividing Range. Pollen numbers are higher on the Victorian south coast because the prevailing winds are from the north carrying pollen from the northerly grasslands. In South Australia and Western Australia, the concentration of pollen can vary according to the prevailing winds.

The principal grasses growing in the northern coastal areas are subtropical and mainly flower in January, February and March. Allergenic grasses in the southern part of Australia are mostly Northern hemisphere grasses, with the main flowering period in October - December.

White Cypress (Murray) Pine is the only Australian tree that produces highly allergenic pollen. Its growth extends from the western slopes and plains of Eastern Australia across to Western Australia, south of the Tropic of Capricorn and it flowers from late July through to the end of August.

Wattle trees are frequently blamed for early spring symptoms but allergy tests (skin prick tests) seldom confirm that Wattle is the true culprit. There are many species of Casuarina or Australian Oak trees, which produce pollen throughout the year and may cause allergic rhinitis symptoms at any time of the year.

Diagnosis is important

A careful history should be taken of the timing of symptoms, identifying plants and trees that grow in the area and whether relief is obtained by going away on holiday. When this history has been obtained, confirmatory allergy tests (skin prick tests and/or blood allergen specific IgE tests) should be performed using allergens which are appropriate for the area of residence and work. The relevance of the test results can then be interpreted by a doctor trained in allergy, in conjunction with the history.

Tips for reducing pollen exposure

- Stay indoors until after midday (if possible) to reduce your exposure to pollen, particularly in the pollen season and on windy days
- Try to avoid going out during or after thunderstorms, particularly when pollen counts are high. Information about pollen counts in Australia is available at www.pollenforecast.com.au/
- Wear sunglasses to protect your eyes
- Do not mow the grass and stay inside when it is being mown. If mowing is unavoidable, wear a mask or consider taking a non-drowsy antihistamine if your doctor has suggested this
- Consider planting a low allergen garden around the home
- Keep windows closed both at home and particularly when in your car (and where possible use recirculating air conditioning in your car)
- Do not picnic in parks or in the country during the pollen season
- Try to plan your holidays out of the pollen season or holiday at the seaside
- If you are sensitive to particular weeds or trees that are outside your bedroom window, have them removed
- If landscaping at home, research plants less likely to trigger allergic rhinitis or asthma.
- Shower when you arrive home and rinse your eyes frequently with water
- Carry a supply of tissues

Effective treatments are available

Seek advice from your pharmacist or doctor about medications or treatments that will relieve your symptoms. Although medications do not cure allergies, they are much more effective with fewer side effects than medications available 20 years ago. You just need to know the best way to use them, and to avoid medicines that can cause more problems than they solve, like frequent decongestant (unblocking) nose sprays or tablets.

Antihistamine tablets or syrups (non-sedating) help to reduce symptoms (sneezing, itchy and irritating eyes), but they are not as effective in controlling severe nasal blockage and dribble. The advantage of antihistamines is their flexibility; you can take them when you have problems, and avoid them when you are well. Antihistamine eye drops can also be helpful in controlling watery eyes due to allergies.

Intranasal corticosteroid nasal sprays (INCS) have a potent action on inflammation when used regularly (like asthma preventer medications). These need to be used regularly and with careful attention to the way in which they are used. Different brands of INCS vary in strength and effectiveness, so it is important to read the labels and check details with your doctor or pharmacist.

Combination medications containing an antihistamine and intranasal corticosteroid nasal spray are available and offer the combined advantages of both medications.

Decongestant sprays unblock and dry the nose, but should not be used for more than a few days as they can cause long term problems in the nose.

Decongestant tablets unblock and dry the nose, but should be used with caution as they can have 'stimulant' side effects like tremors, trouble sleeping, anxiety or an increase in blood pressure. People with high blood pressure should not take this medication.

Combination medications containing an antihistamine and decongestant are also available, but these need to be used with caution as the decongestants can cause many side effects.

Natural products such as salt water nasal sprays or douches can be effective in relieving symptoms.

Appropriate management of 'pollen asthma' includes commencing **anti-inflammatory asthma medication** either preventatively or with the first 'wheeze' of Spring. Some patients undergoing allergen immunotherapy for their allergic rhinitis find that their seasonal asthma improves as well.

Allergen immunotherapy is a long term treatment option

Medications only reduce the severity of symptoms and do not cure allergic rhinitis. Another treatment option is allergen immunotherapy (also known as desensitisation), which switches off the allergic reaction, by repeatedly introducing small doses of allergen extracts, by injection, sublingual tablets, sprays or drops.

Allergen immunotherapy is a long term treatment which is usually given over a few years.

Allergen immunotherapy should only be initiated after assessment by a clinical immunology/allergy specialist to determine if this is an appropriate treatment option.

Further information on allergic rhinitis and allergen immunotherapy is available on the ASCIA website: www.allergy.org.au/patients/allergy-treatment/immunotherapy

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