HEALTH BASICS

Pollen

Pollen is a fine plant powder that can trigger allergies in sensitive people.

WHAT IT IS
Fine grains made by plants for reproduction

WHERE IT COMES UP
Allergy symptoms, pollen forecasts, and allergy test results

WHY IT MATTERS
Can trigger nose, eye, or asthma reactions

WHAT IT IS NOT
Not a disease or diagnosis

WHO TO ASK
Primary care clinician or allergy specialist

HOW IT IS CHECKED
Skin-prick or allergen-specific IgE blood testing

Overview

Pollen is a powder made of tiny grains that plants use to reproduce. Trees, grasses, weeds, and flowering plants all produce pollen. Each type contains its own mixture of proteins.

Pollen itself is not a disease. Most people breathe it in without a problem. In someone with a pollen allergy, however, the immune system mistakes certain pollen proteins for a threat. This can lead to allergic rhinitis, often called hay fever, as well as eye or asthma symptoms.

Wind-pollinated plants cause many seasonal allergies because they release lightweight pollen into the air. Grasses and plants such as birch, ragweed, and cedar are common examples, although important pollen types differ by region.

Plants pollinated mainly by insects tend to release less pollen into the air. This means that a colourful flower is not automatically a major allergy trigger. Fragrance, mould in soil, or pollen carried on a bouquet can still bother some people.

Pollen seasons are affected by plant type, location, temperature, rainfall, and wind. Tree pollen often rises earlier in the year, followed by grass and then weed pollen, but local patterns may be different.

How it works

Pollen grains carry the male reproductive material of a plant. Their job is to reach another part of the same plant species so that seeds can form.

Airborne grains can land in your nose, eyes, mouth, or airways. They may also collect on hair, clothing, pets, cars, and indoor surfaces.

An allergy begins with sensitisation . This means the immune system has made immunoglobulin E, or IgE, antibodies against a particular pollen protein. Sensitisation may not cause noticeable problems.

When a sensitised person is exposed again, IgE can activate immune cells called mast cells. These cells release histamine and other chemicals. The resulting inflammation may affect the lining of the nose, eyes, and lungs.

Different pollens can contain similar proteins. Because of this, a person may react to several related plants. Similar proteins may also occur in certain raw fruits, vegetables, or nuts. This is called cross-reactivity.

A pollen count estimates how much pollen is in the outdoor air during a set period. Counts can help identify broad patterns, but they do not predict exactly how you will feel. Your response also reflects the pollen type, time spent outside, medications, asthma control, and other exposures.

Why it matters for your health

Pollen matters mainly because it can act as an allergen. An allergen is a usually harmless substance that triggers an allergic immune response.

Pollen allergy may contribute to allergic rhinitis , which is inflammation inside the nose. It may also cause allergic conjunctivitis, meaning inflammation of the eye's surface. Typical reactions include sneezing, an itchy or runny nose, congestion, and itchy or watery eyes.

Pollen exposure can also trigger coughing, wheezing, or chest tightness in some people with asthma. It does not cause every case of asthma, and not everyone with pollen allergy has asthma.

The timing of a reaction can offer useful clues. Problems that return during the same season, improve away from a particular area, or follow gardening and lawn mowing may suggest an outdoor allergen. Similar problems can also come from dust mites, pets, mould, infection, smoke, or other irritants, so timing alone does not establish the cause.

A positive allergy test also does not prove that pollen is responsible for your symptoms. It

shows sensitisation. The result needs to fit your actual exposure and health history.

What can go wrong

Several named conditions and situations relate to pollen:

Pollen-food allergy syndrome is also called oral allergy syndrome. For example, someone allergic to birch pollen may react to certain raw fruits or vegetables because their proteins resemble birch pollen proteins. Cooking may change some of these proteins, but this is not true for every food or every person. Food reactions should be discussed with a clinician rather than tested by deliberately eating the suspected food.

Thunderstorms can sometimes break pollen into smaller particles and concentrate them near ground level. This can trigger serious breathing problems in susceptible people. Local weather alerts and an existing asthma action plan may be important during these events.

Pollen reactions can affect sleep, concentration, school, work, exercise, or asthma control. These effects are reasons for routine medical review, especially when over-the-counter treatment is not helping.

Severe breathing difficulty, difficulty speaking because of breathlessness, blue or grey lips, fainting, or swelling of the tongue or throat needs emergency help. Follow your emergency or asthma action plan if you have one, and contact emergency services.

New or worsening wheezing, or asthma symptoms that are not responding as expected to prescribed reliever medicine, needs prompt medical assessment.

- Seasonal allergic rhinitis: Inflammation of the nose caused by seasonal allergens
- Allergic conjunctivitis: An eye reaction causing itching, redness, or watering
- Allergic asthma: Asthma symptoms triggered or worsened by an allergen
- Pollen-food allergy syndrome: Mouth or throat reactions to cross-reactive raw foods
- Thunderstorm asthma: Sudden asthma outbreaks linked to storms and high airborne allergen levels

What you can do

If pollen does not cause you any problems, there is nothing you need to test, treat, or avoid.

If you suspect a pollen-related reaction, keep a brief record. Note the date, location, activities, weather, pollen forecast, and specific problems you noticed. Also record whether symptoms

improved indoors or away from the area. This can make a clinical assessment more useful.

You can ask a primary care clinician or allergy specialist:

Skin-prick testing places small amounts of allergen on the skin and checks for a local reaction. A blood test measures IgE antibodies to selected allergens. Neither test should be interpreted without your history. Commercial food IgG tests do not diagnose pollen allergy.

Practical steps may reduce exposure, although pollen cannot be removed completely. You might check local pollen forecasts, keep windows closed when counts are high, avoid mowing or raking when your trigger is active, and change clothes after prolonged outdoor activity. Showering and washing your hair can remove pollen carried indoors. A well-fitting mask may reduce inhaled particles during yard work.

Treatments for related allergy conditions may include antihistamines like cetirizine or loratadine , corticosteroid nasal sprays, allergy eye drops, or saline nasal rinses. Ask a pharmacist or clinician which option is suitable and how to use it correctly. People with asthma should continue their prescribed asthma plan rather than treating breathing symptoms as hay fever alone.

Allergen immunotherapy exposes a person to controlled amounts of a confirmed allergen over time. It is provided as injections or, for selected allergens, tablets placed under the tongue. Assessment and monitoring by an appropriately trained clinician are required.

- Whether the pattern fits pollen allergy or another condition
- Whether skin-prick or allergen-specific IgE blood testing would help
- How allergy treatment fits with asthma, pregnancy, or other medicines
- Whether allergen immunotherapy is appropriate for confirmed allergy

Common questions

Is the yellow dust on cars always the pollen causing allergies?

No. Visible dust may come from plants that release large grains in high amounts, including some pine trees. Smaller pollens can cause strong reactions without forming an obvious coating. Your relevant trigger cannot be identified by colour alone.

Can pollen enter a home?

Yes. It can enter through open doors and windows or travel on clothing, hair, shoes, and pets. Indoor levels are usually shaped by ventilation and outdoor conditions.

Can someone develop pollen allergy as an adult?

Yes. Sensitisation and noticeable allergic reactions can begin at different ages. New seasonal symptoms still need assessment because infection, asthma, and irritants can produce similar problems.

Does rain clear pollen from the air?

Steady rain often lowers airborne pollen for a time. Conditions around thunderstorms can be different because pollen may break into smaller particles and move in concentrated gusts.

Does local honey treat pollen allergy?

Evidence does not show that ordinary local honey reliably treats pollen allergy. The pollens found in honey are also not necessarily the windborne pollens responsible for seasonal symptoms.

Do I need a pollen allergy test before using a pollen forecast?

No. A forecast can help you compare exposure with your symptoms. Formal testing is most useful when the result would clarify the trigger or change management.

Sources

- Centers for Disease Control and Prevention. Allergens and Pollen . Climate and Health
- American Academy of Allergy, Asthma & Immunology. Pollen Allergy
- American College of Allergy, Asthma & Immunology. Seasonal Allergies
- Dykewicz MS, Wallace DV, Amrol DJ, et al. Rhinitis 2020: A practice parameter update . Journal of Allergy and Clinical Immunology . 2020;146(4):721-767
- Werfel T, Asero R, Ballmer-Weber BK, et al. Position paper of the EAACI: Food allergy due to immunological cross-reactions with common inhalant allergens . Allergy . 2015;70(9):1079-1090