

Hay Fever: Diagnosis and Management

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Abstract

Review Article

Hay fever (allergic rhinitis) is a common condition with symptoms similar to those of a cold. It is an allergic reaction to environmental allergens such as pollens, dust mite, molds and animal dander. Avoiding allergic triggers and taking appropriate treatments are the best ways to reduce the frequency of hay fever symptoms.

Keywords: Allergic rhinitis, Hay fever, Allergens, Symptoms, Treatments.

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INTRODUCTION

Hay fever is the common name for allergic rhinitis, is an allergic reaction to tiny particles in the air called allergens. When you inhale allergens through your nose or mouth, your body responds by releasing a natural chemical called histamine. Various indoor and outdoor allergens can trigger hay fever symptoms. Common causes include dust mites, mold, pet dander and pollen from trees and plants. Hay fever symptoms include sneezing, nasal congestion, and irritation of the nose, throat, mouth, and eyes. Unlike allergic rhinitis, which is triggered by allergens, infectious rhinitis refers to the common cold, which is caused by a viral infection. Hay fever is not contagious [1-3].

Hay fever is a common condition that affects close to 18 million Americans, according to the Centers for Disease Control and Prevention (CDC) [1]. Hay fever, also known as allergic rhinitis or nasal allergies, can be seasonal, perennial (year-round), or occupational. Rhinitis refers to the irritation or inflammation of the nasal passages. Hay fever affects 1 in 5 people in Australia. Despite its name, it's not caused by hay and doesn't cause a fever [2,3].

Symptoms of Hay fever

Common symptoms include

The common symptoms of hay fever include a runny nose, nasal congestion, snoring during sleep, sneezing, watery, red, itchy eyes, coughing, an itchy throat or roof of the mouth, postnasal drip, an itchy nose, sinus pressure, pain, and itchy skin. If left untreated, these symptoms can become persistent or chronic [1,2,4].

In some cases, hay fever symptoms can become so severe that they interfere with sleep, concentration, and daily activities, leaving a person feeling tired or unwell.

Less common symptoms may include

Feeling tired during the day, difficulty concentrating, frequent headaches, recurring sore throats, a hoarse voice, facial pain or pressure, a reduced sense of smell, frequent sinus infections in adults, recurring ear infections (otitis) in children, Wheezing and Fatigue and malaise (general feeling of discomfort) [3,4].

long-term symptoms of hay fever

Hay fever symptoms typically begin immediately after exposure to a specific allergen. If the symptoms persist for several days, they can lead to additional issues such as a decreased sense of smell, headaches, dark circles under the eyes (allergic shiners), fatigue, irritability, and puffiness around the eyes.

Difference between the symptoms of Hay fever and other cold conditions

Difference	Hay Fever	Cold
Timing	Begins immediately after exposure to an allergen.	Starts one to three days after exposure to a virus.
Duration	Lasts as long as you're exposed to allergens, often weeks.	Usually lasts three to seven days.
Symptoms	Causes a runny nose with thin, watery discharge.	Causes a runny nose with thicker, yellowish discharge.
Fever	Does not cause a fever.	Often results in a low-grade fever.

Causes allergic rhinitis (hay fever)

Allergic rhinitis occurs when your immune system overreacts to airborne irritants (allergens), which are so tiny that they can be easily inhaled through the nose or mouth. While allergens are harmless to most people, if you have hay fever, your immune system mistakenly identifies them as threats. In response, the immune system releases natural chemicals into the bloodstream, primarily histamine [4, 6]. This causes the mucous membranes in the nose, eyes, and throat to become inflamed and itchy as the body attempts to expel the allergen. Seasonal and perennial allergies can be triggered by various allergens [5, 6], including:

- **Dust mites** that inhabit carpets, drapes, bedding, and furniture.
- **Pollen** from trees, grass, and weeds.
- **Pet dander**, which consists of tiny flakes of dead skin.
- **Mold spores** present in damp environments.
- **Cockroaches**, along with their saliva and waste.

Additionally, food allergies can cause inflammation in the nose and throat. If you suspect you are having an allergic reaction to something you ate, seek medical assistance immediately. Food allergies can be life-threatening [7].

Triggers the symptoms

Your symptoms may vary based on the time of year, your location, and the specific types of allergies you have. Understanding these factors can help you prepare for potential symptoms. Seasonal allergies often peak in early spring, but different plants bloom at various times throughout the year. For instance, tree pollen is most prevalent in early spring, while grass pollen is more common in late spring and summer. Ragweed pollen typically peaks in the fall. Pollen allergies can be exacerbated on hot, dry days when the wind carries pollen more effectively [6, 7].

The symptoms of hay fever worse by

The symptoms of hay fever can be aggravated by various irritants, as hay fever leads to inflammation in the nasal lining, making it more sensitive to airborne irritants. These irritants include [5-7]:

- Wood smoke
- Air pollution
- Tobacco smoke
- Wind

- Aerosol sprays
- Strong odors
- Fluctuations in temperature
- Changes in humidity
- Irritating fumes

Diagnosis**History**

Your doctor can diagnose hay fever from a description of your symptoms and when they occur. They may also ask what medications you already take for hay fever — over the counter or prescribed — what triggers you have noticed in your work or home environment, and how hay fever affects your quality of life [8, 9].

Physical exam

To rule out other causes of hay fever symptoms, the following steps should be taken:

- **Inspect your facial features**, particularly your nose and eyes, for any visible signs of hay fever.
- **Assess nasal airflow** by asking you to breathe through your nose.
- **Examine your nostrils** using a specialized scope to check for any abnormalities.
- **Evaluate your throat** for any signs that may be related to your symptoms.

Allergy testing

Allergy testing, such as a blood test or skin prick test, is the primary method for determining if your hay fever symptoms are triggered by a specific allergen^{8,9}. You may be referred to a clinical immunologist or an allergy clinic for testing. A skin prick test involves the following steps:

- **Pricking the skin's surface** with a needle, typically on the forearm, upper arm, or back.
- **Applying a droplet of a suspected allergen** onto the pricked area of your skin.
- **Observing for a skin reaction** to determine if your immune system responds.

It's important to interpret any allergy testing results in conjunction with your medical history and hay fever symptoms. A positive result indicates sensitivity to the allergen but does not confirm that it is the cause of your symptoms. Additionally, undergoing too many allergy tests can lead to confusion and unnecessary lifestyle changes aimed at avoiding every potential allergen [9,10]. Discuss the implications of your test

results with your doctor to understand whether any lifestyle adjustments are needed [10].

Management and Treatment

Several allergy medications can alleviate symptoms and help you manage hay fever. These treatments come in various forms, including liquids, pills, eye drops, nasal sprays, and injections [9,10]. Consult your healthcare provider before taking any medication, especially if you are pregnant or have other health concerns. Your provider may recommend:

Antihistamines

Antihistamines are available by prescription or over the counter [8-10]. They work by blocking the histamine released during an allergic response. However, be aware that some antihistamines can cause drowsiness. It's advisable to avoid alcohol while taking these medications, particularly if you plan to drive. Antihistamines can be found in pills, liquids, eye drops, nasal sprays, and inhalers.

Decongestants

These medications relieve nasal and sinus congestion and can be taken orally (in pill or liquid form) or as a nasal spray. However, decongestants may increase blood pressure and can cause side effects such as headaches, insomnia, and irritability. It's important to note that nasal decongestants can be addictive if used for more than five days, so discuss their use with your provider.

Corticosteroid Nasal Sprays

Corticosteroid nasal sprays reduce inflammation and relieve hay fever symptoms. Some common types of nasal sprays include:

- **Beclomethasone:** Typically available by prescription, this corticosteroid decreases inflammation and is effective for environmental allergies like hay fever. It is usually dosed twice daily and is intended to treat nasal symptoms such as swelling, redness, and itching.
- **Budesonide:** Another corticosteroid spray commonly used for asthma, it blocks your body's inflammatory response to irritants and allergens. Budesonide can be taken once daily and helps alleviate symptoms like runny nose, sneezing, and stuffiness.
- **Mometasone:** This spray is designed to treat symptoms such as sneezing, congestion, and runny nose.
- **Fluticasone:** Available over the counter and by prescription, this nasal spray treats all hay fever symptoms. It is typically dosed once daily, and regular use can reduce daily allergy symptoms, including those that interfere with sleep.

Leukotriene Inhibitors

These medications are available only by prescription and block leukotriene, a substance your

body releases during allergic reactions that contributes to inflammation and hay fever symptoms. The most common leukotriene inhibitor is montelukast [8-10].

Immunotherapy

This treatment involves helping your body learn to tolerate allergens through a series of allergy shots [10,11,13]. Your provider will administer gradually increasing amounts of the allergen over time, allowing your immune system to develop tolerance and reduce its reaction [12-14].

Prevention

While hay fever cannot be entirely prevented, certain lifestyle changes can help you manage allergies effectively [10,12]. To reduce symptoms, consider the following [13,14]:

- Avoid touching your face and rubbing your eyes or nose.
- Keep windows closed in your home and car during peak pollen seasons (spring, summer, and early fall).
- Use dust mite covers for pillows, mattresses, and box springs.
- Restrict pets from couches and beds, and keep bedroom doors closed.
- Use air filters in your vacuum cleaner and air conditioner to minimize airborne allergens.
- Wash your hands frequently, especially after interacting with pets.
- Bathe your pets regularly.
- Wear a hat and sunglasses outdoors to protect your eyes from pollen, and change clothes as soon as you come indoors.

Prognosis

Hay fever can be uncomfortable, but it typically doesn't lead to serious health issues. Most individuals manage their symptoms through lifestyle changes and over-the-counter medications [8]. However, those with airborne allergies may have a higher risk of ear infections and sinus infections. Additionally, hay fever can disrupt sleep, leading to daytime fatigue. For individuals with asthma, hay fever can exacerbate asthma symptoms [10-12].

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- Terms Linked in this Article:**
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 7. common cold (<https://my.clevelandclinic.org/health/diseases/12342-common-cold>)
 8. dust mites (<https://my.clevelandclinic.org/health/diseases/17712-dust-mite-allergies>)
 9. asthma (<https://my.clevelandclinic.org/health/diseases/6424-asthma>)
 10. eczema (<https://my.clevelandclinic.org/health/diseases/9998-eczema>)
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