

ABC of allergies

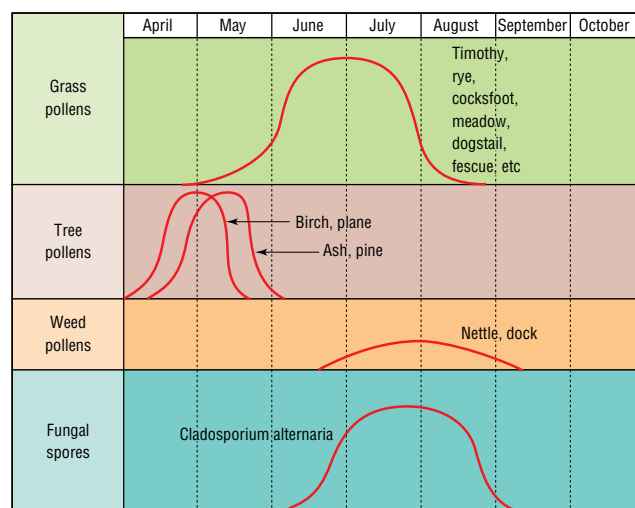
Summer hay fever

Stephen Durham

Summer hay fever causes considerable morbidity and affects quality of life at a time usually considered as the best of the year. Its prevalence has increased over the past 20 years despite falling pollen counts.

Environmental triggers

The main cause of hay fever in Britain is grass pollen, particularly perennial rye (*Lolium perenne*) and timothy grass (*Phleum pratense*). Symptoms peak during June and July. Symptoms in spring are commonly due to tree pollens, whereas symptoms in late summer and autumn may be due to weed pollens and mould spores. Rape seed may also provoke symptoms of rhinitis, although usually through irritant rather than allergic mechanisms. It has been suggested that emissions of nitrogen dioxide and ozone from vehicle exhausts have been increasing the sensitivity to airborne allergens.



Pollen calendar for Britain

Mechanisms of rhinitis

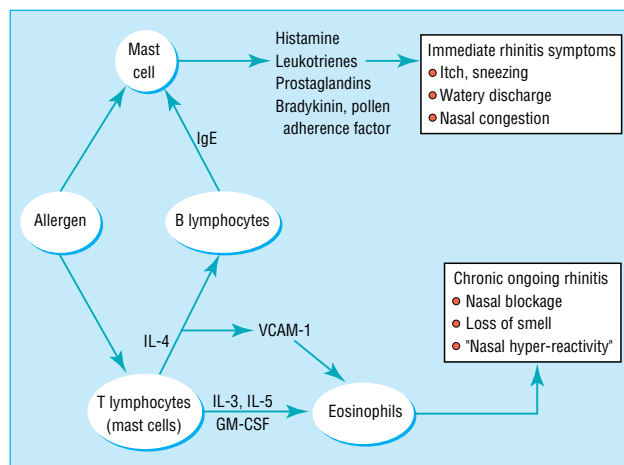
The symptoms of rhinitis are caused by an interaction between grass pollen and IgE on the surface of sensitised mucosal mast cells (type 1 hypersensitivity). The cells release mediators such as histamine and leukotrienes, which produce itch, sneeze, watery anterior nasal discharge, nasal congestion, and symptoms affecting the eyes.

Allergens are also recognised and processed by mucosal dendritic cells (Langerhans' cells) or macrophages, which then stimulate T lymphocytes to release interleukins, which promote tissue eosinophilia and IgE production. These compounds act to produce ongoing rhinitis, symptoms of blockage, impaired sense of smell, and nasal hyperreactivity (an exaggerated nasal response to environmental irritants such as cold air, perfume, or tobacco smoke).

Antihistamines and nasal corticosteroid sprays are first line treatment



Perennial rye grass (*Lolium perenne*)—common in Britain



Hypothesis on mechanisms of summer hay fever (rationale basis for treatment). IL=interleukin, VCAM=vascular cell adhesion molecules, GM-CSF=granulocyte macrophage colony stimulating factor

Diagnosis

Most patients present with the diagnostic symptoms of seasonal itching, sneezing, watery nasal discharge, and associated eye problems. The nose may be examined with an auriscope to exclude a structural problem. Skin prick tests are not usually needed for diagnosis, but a positive result may help to reinforce advice to take topical prophylaxis.

Drug treatment

Antihistamines

Oral antihistamines are effective in patients with mild to moderate disease, particularly in those whose main symptoms are palatal itch, sneezing, rhinorrhoea, or eye symptoms. Antihistamines have little effect, however, on nasal blockage.

Terfenadine and astemizole are the most commonly prescribed drugs, are effective, and rarely cause drowsiness or anticholinergic side effects. With these drugs it is important to emphasise the manufacturers' instructions in view of the extremely rare complication of cardiac arrhythmias in overdose and, in the case of terfenadine, interactions with erythromycin or ketoconazole (which should not be given concurrently).

Newer alternatives include loratadine and fexofenadine. Acrivastine is short acting and may be useful when symptoms are mild and episodic. Cetirizine has also been shown to be highly effective in placebo controlled trials. The place of topical nasal antihistamines in hay fever is currently being evaluated.

Corticosteroids

Topical corticosteroids are extremely potent, with a low potential for systemic side effects. They are the best treatment for patients with moderate to severe nasal symptoms. Aqueous corticosteroids are better tolerated than those in fluorocarbon propellants and have a better local distribution in the nose. The side effects are minor—local irritation and occasional (in 5% of cases) bleeding. Treatment should be started before the beginning of the hay fever season for maximal effect. Patients should be given instruction on the importance of regular treatment and how to use the nasal spray.

Topical corticosteroids are effective against all nasal symptoms, including nasal blockage. Although systemic absorption is negligible in adults, care should be taken when nasal steroids are given to children who are also taking inhaled steroids for asthma or topical steroids for eczema. Sodium cromoglycate two to four times daily is an alternative, particularly in children. Eye drops containing sodium cromoglycate, such as Opticrom, are effective in most patients (often within minutes) for allergic symptoms affecting the eyes.

Second line treatment

In patients who fail to respond to antihistamines or topical corticosteroids, a short course of an oral corticosteroid (say, prednisolone 20 mg for five days) may produce rapid relief of symptoms. This is particularly effective when the nose is completely obstructed as topical treatment will not gain access to the nose.

An alternative is to use a topical decongestant short term to allow penetration of topical corticosteroids. Ipratropium bromide may have a role when watery rhinorrhoea is pronounced.

In general it is important to establish which are the patient's dominant symptoms and, particularly for severe symptoms, to match the treatment to the symptoms.

Diagnosis of hay fever

<i>History</i>	Prominent itch or sneezing and associated eye symptoms
<i>Nasal examination</i>	Pale, bluish, swollen mucosa (only if symptomatic at time)
<i>Skin prick test or radioallergosorbent test</i>	Not essential, although of educational value and reinforces oral advice

Diagnosis of summer hay fever is usually straightforward

Stepwise approach to treatment of summer hay fever

Allergen avoidance (if appropriate)

Mild disease or with occasional symptoms

- Rapid onset, oral, non-sedating histamine H₁ antagonists when the patient is symptomatic; or
- Antihistamine or cromoglycate topically to eyes or nose, or both

Moderate disease with prominent nasal symptoms

- Topical nasal steroid daily (start early in the season); plus
- Antihistamine or cromoglycate topically to eyes

Moderate disease with prominent eye symptoms

- Oral, non-sedating histamine H₁ antagonists daily; or
- Topical nasal steroid and sodium cromoglycate topically to eyes

If above are ineffective, check compliance and consider:

- Nasal examination
- Allergy tests
- Additional pharmacotherapy—for example, short course of oral steroids
- Immunotherapy (requires referral to specialist)

Effects of drugs on nasal symptoms in adults

	Itch or sneezing	Discharge	Blockage	Impaired smell
Topical corticosteroids	+++	+++	++	+
Oral antihistamines	+++	++	+/-	-
Sodium cromoglycate*	+	+	+/-	-
Ipratropium bromide	-	+++	-	-
Topical decongestants	-	-	+++	-
Oral corticosteroids	+++	+++	+++	++

*First line treatment in children.

Avoiding allergens

Patients with allergies are usually advised to avoid the provoking allergen. It is, however, controversial whether this should be routinely recommended for pollen allergy. As hay fever is usually not severe or life threatening, drugs can allow patients to lead a normal life without unnecessary restrictions. But patients with debilitating symptoms may benefit from simple advice. Pollen counts at ground level are highest during the evening and at night, when open grassy spaces should be avoided.

Immunotherapy

Most patients with hay fever will have their symptoms controlled by the above measures. Patients whose symptoms remain uncontrolled may benefit from "allergen injection immunotherapy." This form of treatment is performed only in specialised centres. Careful selection of patients for this treatment is essential, and immunotherapy is contraindicated in those with chronic asthma. Indications and guidelines for immunotherapy in Britain were the subject of a recent report by the British Society for Allergy and Clinical Immunology.

The pollen calendar is adapted with permission from Varney (*Clin Exp Allergy* 1991;21:757). The diagram showing the mechanisms of summer hay fever and the box on the stepwise approach to the treatment are adapted with permission from Lund et al (*Allergy* 1994;49(suppl 19):1-34).

The ABC of allergies is edited by Stephen Durham, honorary consultant physician in respiratory medicine at the Royal Brompton Hospital, London. It will be published as a book later in the year.

How to avoid pollen

- Keep windows in cars and buildings shut
- Wear glasses or sunglasses
- Avoid open grassy places, particularly in the evening and at night
- Use a car with a pollen filter
- Check for pollen counts in the media
- During the peak season take a holiday by the sea or abroad

Grass pollen immunotherapy

- Immunotherapy should be considered in patients with summer hay fever uncontrolled by antiallergy drugs
- It should be administered only in hospital or specialised clinics with immediate access to resuscitative facilities
- Patients should be kept under observation for the first 60 minutes after injections
- Patients with asthma should not be given grass pollen immunotherapy
- Allergen extracts used should be biologically standardised

Further reading

- Howarth PH. Allergic rhinitis: a rational choice of treatment. *Respir Med* 1989;83:179-88
- Naclerio RM. Allergic rhinitis. *N Engl J Med* 1991;325:860
- Lund V on behalf of the International Rhinitis Management Working Group. International consensus report on the diagnosis and management of rhinitis. *Allergy* 1994;49(suppl 19):1-34
- Frew AJ on behalf of a British Society for Allergy and Clinical Immunology Working Party. Injection immunotherapy. *BMJ* 1993;307:919-22

BMJ 1988;316:843-5

When I use a word ...

Medical Greek

The Reverend Spooner (1844-1930), warden of New College Oxford 1903-24, is well known for the verbal tic that we call a spoonerism. Spoonerisms are formed by metaplasm or metathesis, which were first defined by Henry Peachum in *The garden of eloquence conteyning the figures of grammer and rhetorick* (1577): "Metaplasumus, is a transformation of Letters, or syllables in single words ... eyther for cause of necessity, or else to make the verse more fine" and "Metathesis, when letters be transposed in a word, and removed from their proper places." A good example of metathesis quoted in the *Oxford English Dictionary* is the change from Fastolph to Falstaff.

However, both metathesis and metaplasm seem to be restricted to changes within a single word, rather than to transpositions between two words, which is what spoonerism more commonly means. A more natural word, perhaps, would be metaphasis, which is not to be found anywhere in the *Oxford English Dictionary*, but appears in an article about Spooner's dysgraphia (*Proc R Soc Med* 1976;69:639-48) by John Potter, who writes that Punch described Spooner as "Oxford's great metaphasiarch" and quotes Sir Ernest Barker (*Age and Youth*, OUP 1953): "[Spooner] was seldom guilty of metaphasis or the transposition of sounds."

Marrowsky is an earlier alternative, defined in the *Oxford English Dictionary* as "a variety of slang, or a slip in speaking, characterized by transposition of initial letters, syllables, or parts of two words." The first example quoted dates from 1863, antedating the first citation for spoonerism by 37 years. The origin of "marrowsky" is not known. In *Notes and Queries* (1923;13th series/I:331) an anonymous correspondent suggested that it might have been from a Polish count, well known in London circles at one time. One H Askew replied, "I think that the Polish Count referred to may be identified with Count Joseph Boruwlaski, the celebrated Polish dwarf, who was born near

Chaliez in Polish Russia, in November 1739." The original questioner then asked (1924;146:125) "What claim had [Boruwlaski] on the word 'Marrowskying'? Did his autobiography contain any spoonerisms or pre-spoonerisms?" No one replied to this question, although several gave information on where portraits of the count could be found. The English translation (1792) of Boruwlaski's French autobiography does not mention marrowskying, and I think that he is a red herring. Marrowsky remains unidentified.

There are, however, even earlier terms. Hotten's *Dictionary of Modern Slang* (1860) refers to "medical Greek" and Otto Jespersen, in *Language* (1922), to "hospital Greek." In his *Dictionary of Historical Slang*, Eric Partridge writes that "medical Greek" dates from about 1800, but he gives no examples. He also says that Albert Smith called marrowskying "Gower Street dialect" in 1848, so presumably the hospital from which it originated was University College Hospital. The source of Partridge's information was probably *Slang and its Analogues* by JS Farmer and WE Henley (1896), who wrote under "marrowsky" that "At the London University they had a way of disguising English (described by Albert Smith in 'Mr Ledbury', 1848, as the Gower-street dialect)."

Does anyone in Gower Street have more information? Does anybody have a copy of "Mr Ledbury"?

Jeff Aronson, *clinical pharmacologist, Oxford*

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