

## Introduction

Hay fever is seasonal inflammation of the nose (rhinitis) and/or eyes (conjunctivitis) due to pollen allergy. Grass pollens are the main seasonal allergens in Britain, reaching peak airborne levels during May, June and July. Some patients experience symptoms of hay fever earlier in the year due to tree pollen allergy. In other parts of the world different seasonal allergens are involved.

## Prevalence

Hay fever is not fatal and rarely causes hospital admission. Its occurrence is therefore determined from general practitioner consultations and population surveys.

During 1995 and 1996, the Health Survey for England enquired about symptoms of non-infective rhinoconjunctivitis in the past year and a lifetime history of doctor-diagnosed hay fever among a nationwide sample of adults and children. The age distribution of these two outcomes is similar (figure 1). The prevalence is similar in males and females at all ages.

The prevalence of hay fever is lowest in young children, rises rapidly to reach a peak in adolescence and early adulthood, and thereafter declines gradually with advancing age. This pattern is evident in primary care consultations for hay fever or allergic rhinitis (LAIA factsheet 96/3, figure 5).

## Time trends

The proportion of the British population consulting their general practitioner at least once during the year for hay fever has increased from 5 per 1000 in 1955-56 to 11 per 1000 in 1970-71, and 20 per 1000 in 1981-82. In 1991-92 the figure was 28 per 1000, although this may slightly overestimate the upward trend as 1992 was an unusually bad year for hay fever sufferers. This increase is evident in all age groups (LAIA factsheet 96/3, figure 5). It could reflect a true rise in hay fever prevalence or a change in awareness or consultation behaviour as new medications for hay fever became available.

Five population surveys repeated after ten or more years using similar methods also suggest a doubling or trebling of the prevalence of reported hay fever in British, Swedish and Finnish adolescents during the 1970s and 1980s. Results from two national British cohorts interviewed in 1974 and 1986 are shown in

Figure 1: Prevalence of symptoms and diagnosis of hay fever by age in England, 1995-96.

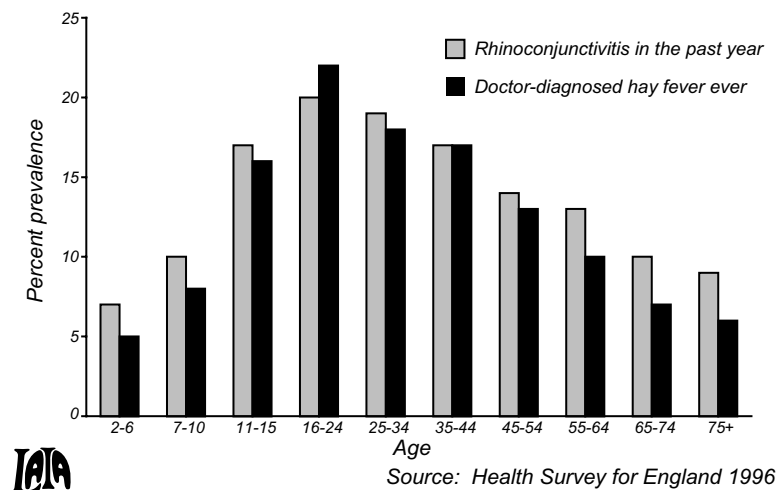


Figure 2: Prevalence of hay fever in past year at age 16 in two national British birth cohorts.



Figure 3: Prevalence of nasal allergies including hay fever in adults aged 20-44 in various countries.

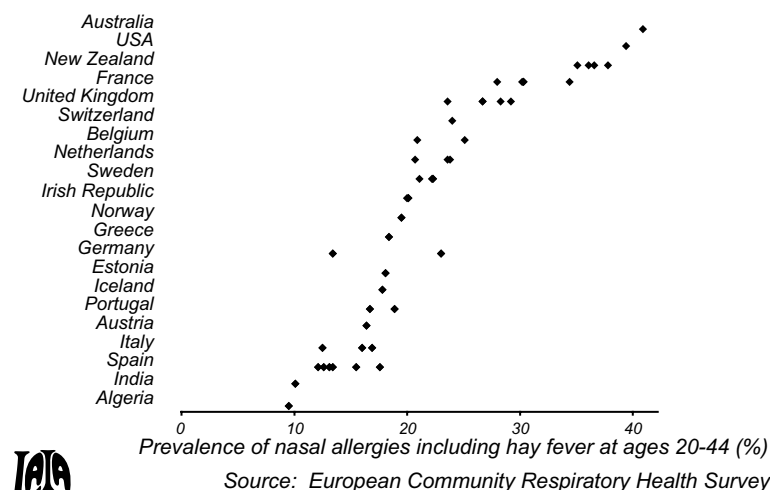


figure 2. The prevalence of parentally-reported hay fever increased in all social classes.

These recent trends appear to be a continuation of a prolonged rise in hay fever prevalence which began during the nineteenth century. In Switzerland, a large survey of 77,000 subjects conducted in 1926 found only 0.82% with symptoms of hay fever, whereas more recent Swiss surveys show the prevalence had risen to 5% in 1958 and to around 10% by the mid-1980s.

## International variations

Two recent international studies have shown wide variations between countries in the prevalence of allergic rhinitis in adults and children using the same age range, contemporaneous surveys and a standardised questionnaire in each centre. Some of the differences in prevalence may be due to linguistic or cultural variations in the interpretation of the questionnaires, rather than true variations in disease prevalence.

The European Community Respiratory Health Survey enquired "Do you have any nasal allergies including hay fever?" among 127,500 adults aged 20-44 years in 45 centres, mainly in Western Europe. Figure 3 shows the variation in prevalence within and between countries in this study. English-speaking centres have the highest prevalences.

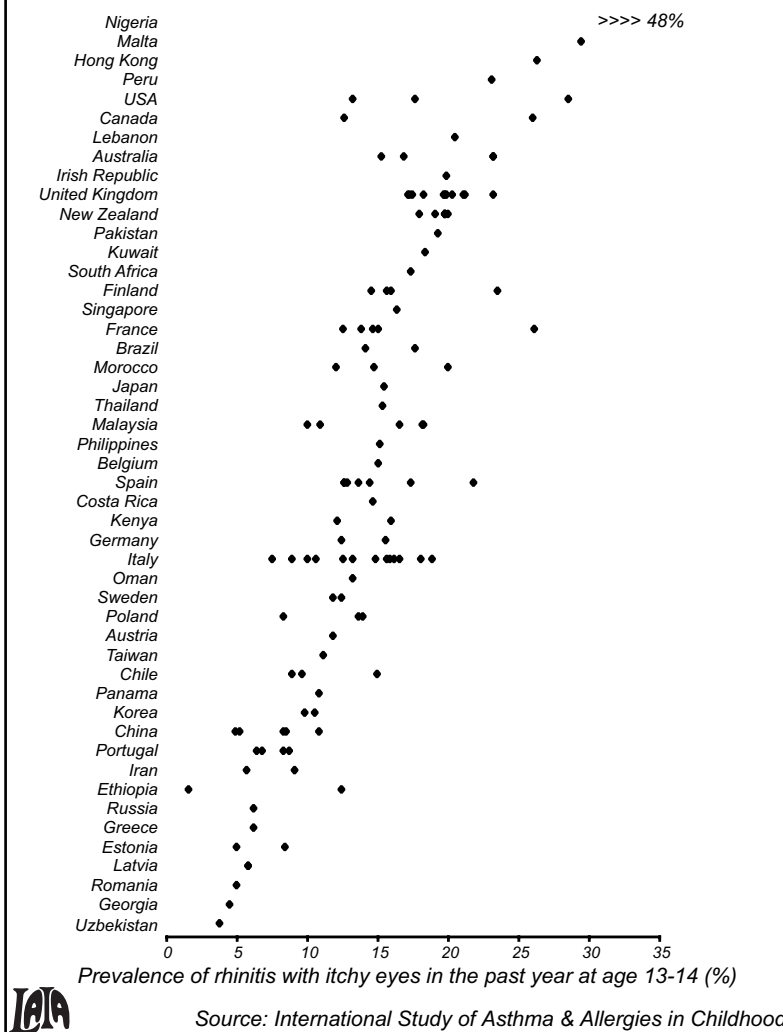
The International Study of Asthma and Allergies in Childhood included over 463,801 children aged 13-14 years from 155 centres in 56 countries worldwide. The results for prevalence of non-infective rhinoconjunctivitis in the past year are shown in figure 4. Substantial variation is evident both within and between countries. The lowest prevalences were found in parts of eastern Europe and central Asia, with high prevalences reported from centres in several regions of the world, including Britain.

## Variations within countries

Many population surveys have shown graded variations in hay fever prevalence by family size or birth order and by socioeconomic status. Objective measures of allergy confirm these variations. Figure 2 shows the effect of birth order and father's social class on hay fever prevalence in two national British birth cohorts. Within each cohort firstborn children from more affluent families were at highest risk of hay fever, but the prevalence was higher in 1986 than in 1974 irrespective of socioeconomic status or position within the family. The biological interpretation of these findings remains uncertain.

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Figure 4: Prevalence of non-infective rhinoconjunctivitis in children aged 13-14 in various countries.



## Summary

- Hay fever is a common complaint in all age groups, particularly adolescents and young adults.
- The prevalence of hay fever and related consultations in primary care are increasing in Britain and elsewhere.
- The prevalence of hay fever or allergic rhinitis varies substantially between and within countries.
- Britain has relatively high prevalence compared to other countries.
- Within countries, hay fever is most common in firstborn children from small, affluent families.

## Sources

1. Health Survey for England 1996 (combines both 1995 and 1996 data). Data tabulations attached.
2. Butland BK, Strachan DP, Lewis S, Bynner J, Butler N, Britton J. Br Med J 1997;315:717-721.
3. European Community Respiratory Health Survey. (ECRHS). Eur Respir J 1996;9:687-695.
4. Strachan D, Sibbald B, Weiland S, Ait-Khaled N, Anabwani G, Anderson HR, Asher MI, Beasley R, Björkstén B, Burr M, Clayton T, Crane J, Ellwood P, Keil U, Lai C, Mallol J, Martinez F, Mitchell E, Montefort S, Pearce N, Robertson C, Shah J, Stewart A, von Mutius E, Williams H. International Study of Asthma and Allergies in Childhood (ISAAC). Pediatr Allergy Immunol 1997;8:161-176.