



The Leicester Cohorts

Food intolerance and wheezing in south Asian and white children: Prevalence and clinical significance

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Introduction

Hospital-based studies in the UK, backed-up by objective lab testing, suggest that food and drink more commonly trigger asthma in south Asian than in white children.

Food intolerance has been associated with severe and persistent asthma in children. A higher prevalence of food intolerance in south Asians could therefore help to explain reported ethnic differences between prevalence and severity. Population-based data confirming these findings are missing.

Aims

In a population-based cohort study, including children of white and south Asian ethnicity we aimed:

A) to compare reported prevalence of food-related wheeze between south Asians and white children,

B) to compare characteristics and prognosis of children with food-related wheeze to those of other current wheezers.

Methods – Leicestershire cohort

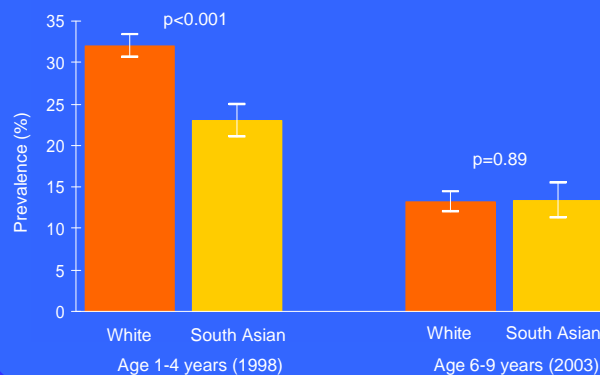
A cohort of 6100 white and 2600 south Asian children aged 1 to 4 years was randomly sampled from the population of Leicestershire, UK.

Parents completed postal questionnaires in regular intervals. For this study, data from the 1998 and 2003 questionnaires were used, when the children were aged 1-4 and 6-9 years respectively. Response rates were 80% and 52% in 1998 and 2003 respectively.

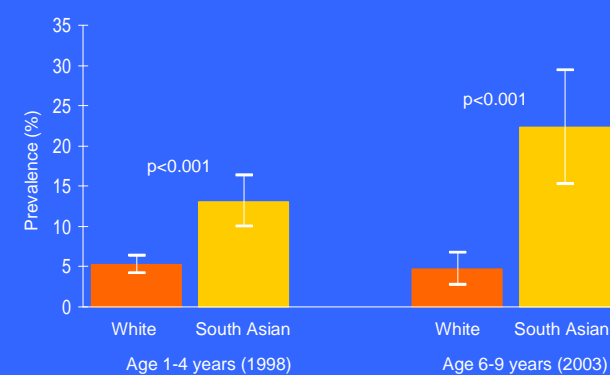
Food-related wheeze was assessed as follows: "Did any of the following things cause wheezing in your child? Food or drinks (yes/no/don't know)"

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Reported prevalence of current wheeze in white and south Asian children



Reported prevalence of food-related wheeze in white and south Asian current wheezers



Characteristics of children with food-related wheeze compared to other current wheezers

	Age 1-4 years (n=2014)			Age 6-9 years (n=561)		
	OR*	(95% CI)	p	OR*	(95% CI)	p
South Asian ethnicity	3.8	(2.6-5.7)	<0.001	9.1	(4.5-18.2)	<0.001
Frequent attacks of wheeze during past 12 months	2.1	(1.4-3.0)	<0.001	2.1	(1.0-4.1)	0.041
Wheeze triggered by exercise during past 12 months	2.1	(1.4-3.0)	<0.001	4.9	(2.3-10.4)	<0.001
Wheeze triggered by pets during past 12 months	3.4	(1.9-5.8)	<0.001	2.0	(0.9-4.4)	0.093

*Multivariable logistic regression, adjusted for age, gender, and all variables listed in table

✦ **Persistence of wheeze 5 years later** was strongly predicted by food intolerance at age 1 to 4 years after adjusting for age, sex, ethnic group and asthma severity **OR=1.9** (1.1-3.2, p=0.014).

Conclusion

- This population-based study confirms findings from hospital-based research, showing a **higher reported prevalence of food-related wheeze among UK-born children of south Asian origin** compared to white children at both preschool and early school age.
- In both ethnic groups, children with food-related wheeze had more frequent symptoms and attacks were triggered more often by non-infectious stimuli compared to other current wheezers.
- Food-related wheeze was associated with a **twofold risk of symptom persistence 5 years later**.
- Our findings that **food-related wheeze is associated both with more severe and more persistent symptoms** as well as with south Asian ethnic origin might **partly explain the excess of healthcare utilisation by south Asian wheezers**.