Increase in prevalence of wheeze from first to second generation Asian immigrants in the UK?

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Background

There is insufficient and conflicting knowledge on the prevalence and severity of wheeze in ethnic minority groups in the UK, the largest of them (3% of the total population) being Asians originating from the Indian subcontinent (India, Pakistan and Bangladesh) (*Thorax 2000; 55: 175-76).* Such information might help to disentangle the relative importance of genetic background and environment in explaining the high prevalence of wheezing illness in Britain.

Questions:

1) Is there a **difference in the prevalence of wheeze** between the **Asian** (A) ethnic minority group and the native **Caucasian** (C) population?

2) Does the difference affect both generations:
a) **parents,** and
b) **pre-school children**

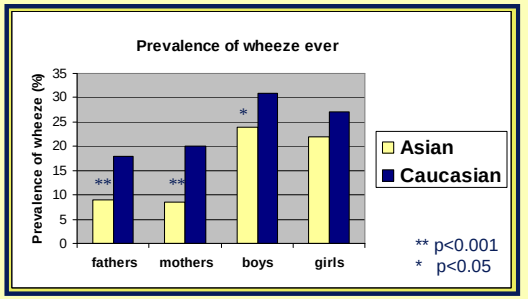
2) Is any difference in the prevalence of wheeze explained by **different exposures** of Asians and Caucasians **to environmental risk factors** for wheeze?

Methods

In 1998, a parent-completed questionnaire survey was performed in a random population sample of 1800 Asian and 2600 Caucasian families with a child aged between 1 and 4.99 years in Leicestershire, UK. The questionnaire included questions on the prevalence of wheeze in the index child and both parents, sociodemographic information and important environmental risk factors for wheeze (tobacco smoke exposure during pregnancy & childhood, breast feeding, pets, indoor fuels, traffic exposure, parental education, single parent).

Results (1)

- **Response rates** were 73% (A) and 84% (C).
- **Prevalence of wheeze** (both lifetime prevalence and 12-month prevalence) and diagnosed asthma was significantly lower in parents and in children of Asian ethnicity compared to Caucasians
- The **difference** in prevalence between Asians and Caucasians was larger in parents than in children



Results (2)

In children, the difference in the prevalence of wheeze was **entirely explained by different exposure to environmental risk factors for wheeze** (maternal smoking, pets, socioeconomic conditions).

In adults, differential exposure to classic environmental **risk factors** (passive and active smoking, pets, paternal education, single parent) **explained only a small part** of the ethnic difference in the prevalence of wheeze.

Crude and adjusted odds ratios (OR) for the prevalence of wheeze ever in Asians compared to Caucasians

	Univariate analysis		Multivariate analysis &	
	OR	p *	OR	p *
boys	0.79	0.03	1,06	0.69
girls	0.84	0.13	1,02	0.88
fathers	0.44	<0.001	0.57	<0.001
mothers	0.37	<0.001	0.44	<0.001

& adjusted for parental smoking, pets, paternal education and single parents;
* likelihood ratio test

Conclusions

1) The large ethnic difference in the prevalence of wheeze between first generation Asian immigrant and Caucasian adults is significantly reduced in the second generation.

2) While classic environmental risk factors (tobacco smoke, pets, socioeconomic conditions) explain the difference in prevalence of wheeze between Asian and Caucasian pre-school children, they account for only a small part of the difference in prevalence between adults

3) The main reason for the lower prevalence of wheeze in Asians is likely to be environmental and not genetic. Exposures which have had their effect either in early childhood or in utero, before emigration to the UK, must be responsible.

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